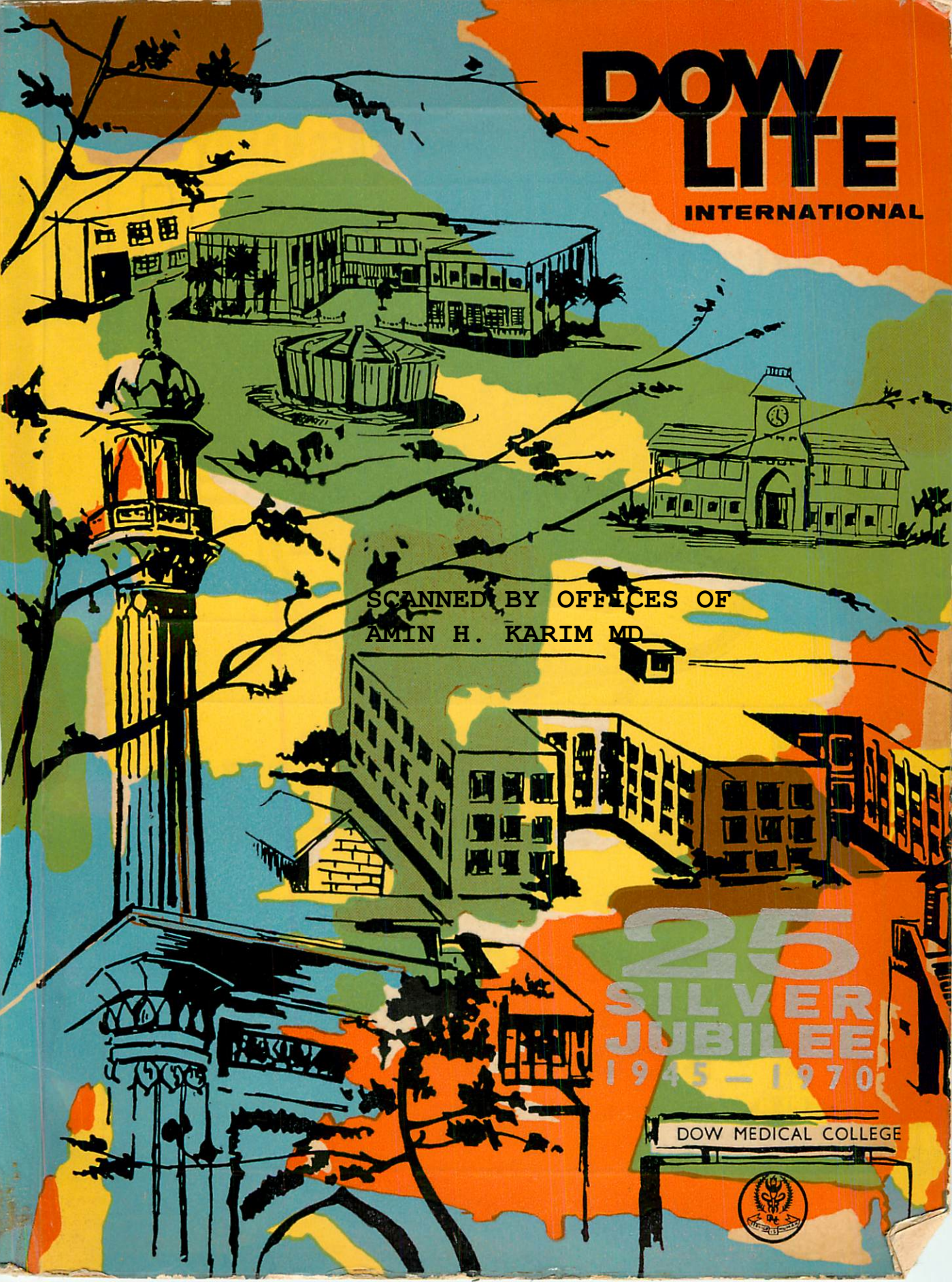

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On the auspicious occasion of our Alma-Mater's Silver Jubilee (1945-46 - 1970-71), the Chairman and the Editor of Dowlite take the pleasure of presenting the Jubille Edition of DOWLITE INTERNATIONAL to the readers.

Every thing has been done to make this issue worthy of the occasion.

It is hoped that the Magazine comes upto the expectations of all.

Editor & Magazine Secretary
Dow Medical College Students' Union

## PATRON

*Prof. ABDUL WAHID*

MS (Anat), MS. (Surg), FICS.

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Prof. FAZAL ELAHI

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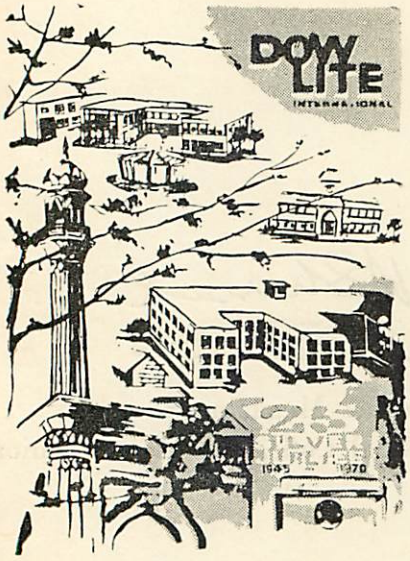
*Dr. NUSRAT ALI SHAIKH*

(M.B.,B.S. F.R.C.P.)

## *Editor & Magazine Secretary*

**HASHEM SHARIAT**

*Final Year M.B.,B.S.*

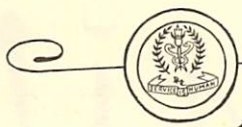



## TITLE COVER

Top, left the Hospital with its Auditorium in front. In the right foreground the old College Building while in front of it, is the new College, built in 1945. On the left side is the College Mosque.

The individual Articles Published in this Dowlite, in no way, necessary represent the views of the members of the Editorial Board and the Editor.

# DOWLITE



# International

1945 1970

# Silver Jubilee

# Dow Medical College

# Karachi


بسم الله الرحمن الرحيم
ومن يؤت الحكمة فقد أوتي خيرا كثيرا
البقرة ٢٦٩

In the name of Allah
The Beneficent The Merciful
And he who hath been
granted wisdom hath
been given abundent
good.

Usman

# تاج کمپنی کے انمول ہیرے

۱۔ **قرآن مجید** مع ترجمہ مولانا محمود الحسن صاحب۔ حاشیہ پر تفسیر مولانا شبیر احمد صاحب عثمانی
بڑی تقطیع، عکسی طباعت دو رنگہ

۲۔ **قرآن مجید** مع ترجمہ مولانا اشرف علی صاحب تھانوی حاشیہ پر مکمل تفسیر بیان القرآن
بے نظیر تفسیر اور بے نظیر خوبصورت عکسی طباعت

۳۔ **قرآن مجید** مع ترجمہ از شاہ رفیع الدین صاحب محدث دہلوی حاشیہ پر تفسیر موضح القرآن
بینظیر لفظی ترجمہ۔ دیدہ زیب عکسی طباعت

۴۔ **قرآن مجید** مع ترجمہ از شاہ عبد القادر صاحب محدث دہلوی حاشیہ پر تفسیر موضح القرآن
شاہ عبد القادر کا ترجمہ اور تاج کمپنی کی طباعت سونے پر سہاگہ ہے

۵۔ **قرآن مجید** مع ترجمہ از مولانا فتح محمد خاں صاحب جالندھری۔

۶۔ **قرآن مجید** مع ترجمہ از مولانا اشرف علی صاحب تھانوی۔ حاشیہ پر تفسیر بیان القرآن اختصار شدہ

۷۔ **قرآن مجید** مع ترجمہ از مولانا عبد الماجد صاحب دریابادی۔ حاشیہ پر مکمل تفسیر ماجدی
تعلیم یافتہ طبقہ کیلئے ایک بے بہا تحفہ

۸۔ **قرآن مجید** مع ترجمہ انگریزی۔ از مسٹر مارماڈیوک پکتھال۔ کتابی تقطیع، بہت آسان صاف انگریزی ترجمہ

۹۔ **قرآن مجید** چھ اردو ترجموں کے ساتھ۔ حاشیہ پر تفسیر عثمانی و تفسیر موضح القرآن
دنیا بھر میں ایک نئی چیز۔ بڑی تقطیع

۱۰۔ **قرآن مجید** مع انگریزی ترجمہ و تفسیر از مولانا عبد الماجد دریابادی۔
انگریزی جاننے والے کہتے ہیں یہ ترجمہ و تفسیر بے نظیر ہے۔

مکمل فہرست مفت طلب کریں!

۱۱۔ **قرآن مجید** مع ترجمہ اردو و انگریزی یکجا۔ از مولانا فتح محمد خاں و مسٹر مارماڈیوک پکتھال۔

۱۲۔ **قرآن مجید**۔ بلا ترجمہ۔ چھوٹی تقطیع سے لیکر بڑی تقطیع تک بیسیوں کروں اقسام عکسی طباعت

۱۳۔ پنجسورے، یازدہ سورے، اوراد، دعائیں۔ دلائل الخیرات۔ مناجات مقبول، نشر الطیب اور
دیگر بے شمار اسلامی، مذہبی مطبوعات۔ عورتوں اور بچوں کے لئے اعلیٰ ترین لٹریچر

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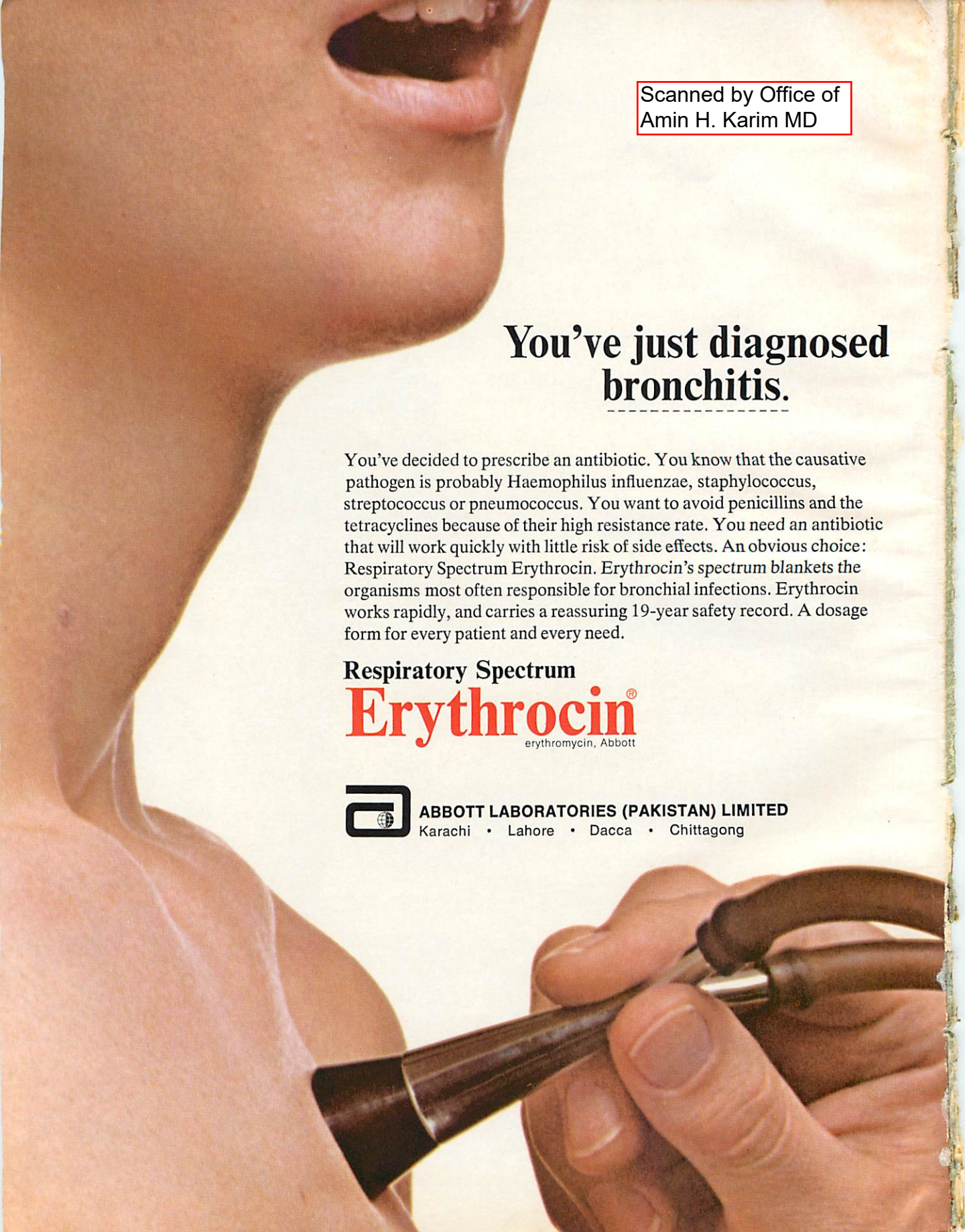
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# National Consolidation

*"Islam has taught us this, and I think you will agree with me that whatever else you may be and whatever you are, you are a Muslim. You belong to a Nation now; you have now carved out a territory, vast territory, it is all yours; it does not belong to a Punjabi or a Sindhi, or a Pathan, or a Bengali; it is yours. You have got your Central Government where several units are represented. Therefore, if you want to built yourself into a Nation, for God's sake give up this provincialism. Provincialism has been one of the curses, and so is sectionalism— Shia, Sunni, etc.'*



*Quaid-i-Azam Mohammed Ali Jinnah.*

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# Governor of Sind



Lt. Gen. RAKHMAN GUL
*S. Pk., SQA., Sk., MC.*

# MESSAGE

I AM glad to learn that the Dow Medical College, Karachi, is celebrating its Silver Jubilee Year in December, 1970.

The Institute, indeed, has rendered commendable services in the field of medical education, despite the fact that it was the solitary college, on the eve of the partition of the Himalayan sub-continent, that provided doctors for the sourthern part of the western wing of the infant state of Pakistan.

The medical profession is one of the noblest pursuits which win profound respect and admiration as it opens new venues of service to humanity and its humane approach towards the ailing people is certainly praiseworthy.

There is a great dearth of medical men in rural area. I hope, the young doctors, after completing their education, will spread out themselves in our villages and will serve, with missionary zeal, their brethren in distress, irrespective of territorial and financial considerations.

I congratulate the promoters of the Annual Magazine, "Dowlite International", on this auspicious occasion and wish them all the successes in their venture.

I trust that the Silver Jubilee Annual may prove to be a compendium of medical know-how for the students of medicines and surgery.

Lt. GEN. RAKHMAN GUL,
S. Pk., SQA., SK., MC.

# MESSAGE

I AM glad that you have remembered me on this auspicious occasion of the celebration of 25th Anniversary of Dow Medical College, Karachi. I feel delighted to be associated with it, because, as you may be aware, being Health Minister in those days, I have been closely connected with the affairs and development of this institution when it was transferred from the Government of Sind in July, 1951. Soon after it was taken over by the Central Government, a grant of over Rs. 43 lakhs was sanctioned for its development out of two year priority social uplift programme initiated by the first Prime Minister of Pakistan, the Late Shahid-e-Millat Liaquat Ali Khan. The College started only with 44 seats in 1945-46 and they were increased to 130 from its 1951-52 session. Soon thereafter the condensed M.B.B.S. Course classes were also started in this institution. I, therefore, feel proud when I learn of the continued progress of the College.

Your College is one of the Medical College that Pakistan inherited and has played a vital role in providing the much needed medical cover to the people. It has also been a pioneer in promoting education in Pharmacy by starting Diploma in Pharmacy Classes in 1954. I hope that Dow Medical College, located in a place which has the distinction of being the birth place of the Founder of Pakistan and situated in the biggest city of Pakistan, will set traditions for medical profession and become a foremost Institution worthy of the largest Muslim country and a progressing nation.

I wish you all success in your celebrations and will always look forward eagerly to the onward march of your College.

30-1-71

(A. M. MALIK)
*Minister.*

# Message

*I understand that the Dow Medical College Students' Union (Magazine Section) in publishing the silver jubilee number of their annual magazine DOWLITE to commemorate the silver jubilee of the College. The editor has made a special effort to present material regarding the history of the college which has rendered valuable service in medical education. Many students belonging to this city, this province, Pakistan and several friendly countries are amongst its alumni. It is befitting that the students of the college should record their appreciation of their alma mater through a special edition of DOWLITE. I am convinced that this effort will be instrumental in enlightening the members of the college and others with the history of the college and the contribution that it has made to the cause of medical education.*

I. H. Qureshi

(I. H. QURESHI)
*(S. Pk., Ph. D. (Cantab)*
*Vice-Chancellor.*
*University of Karachi.*

# *OUR PATRON*



Professor Abdul Wahid

MS. (Anat), MS (Surg.) FICS
Patron, Students' Union & Administrator.
Dow Medical College, Karachi.

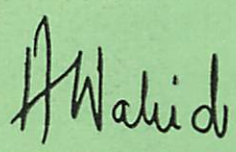
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# MESSAGE

THE comparison of ourselves with the students of other nations is an important adjunct to the available educational facilities for us locally. One of the methods to know about fellowmen of this little world is to write and read about each other. It is most befitting at this time to sart this medium of communication which shall serve to acquaint the students of the friendly countries in the first instance and others as well about our trends, standards and calibre. Such a literature is going to stimulate a sense of reciprocity and we are bound to receive foreign literature in return. This will enable us to teach as well as learn in a very broad manner.

It is, no doubt, a very difficult task that we are undertaking and we hope to gain and maintain a respectable status for our scholarship. There are many traditional things that should not be hidden from the outside world even if for nothing more than to get healthy criticisms and advice for improvements. At the same time there may be some facts which might have been due to very extra-ordinary circumstances, which may not be significant for reporting as they might create a feeling among the readers that they are customary in the country.

Mr. Hashem Shariat, our Magazine Secretary, deserves our appreciation and congratulations for having brought out this Magazine. I wish him all success.



PROF.A. WAHID

MS. (Anat), MS (Surg), FICS

*Patron, Students' Union and, Administrator,*
*Dow Medical College, Karachi.*

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# Our Chairman


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Professor : FAZAL ELAHI

F.R.C.S.; F.I.C.S.; F.A.C.S.

# FOREWORD

THE Publication of the Silver Jubilee Number of DOWLITE is a matter of great pride and pleasure for everybody concerned with Dow Medical College, Karachi. In the short period of 25 years this fledgling has grown to the size of a giant. In 1945 there were total number of 44 students and now 1970-71 there are 1101 students.

In 1945, 44 students were admitted to First Year-In 1970-71, 224 students were admitted to First Year.

In 1950 first Batch of Dow students passed among whom there were 9 males and 3 females thus that was a batch of 12 graduates I am proud of having tought that batch which has produced many outstanding doctors.

Till 1970 Dow Medical College has produced 1760 male doctors and 527 female doctors thus a total number of 2287 doctors.

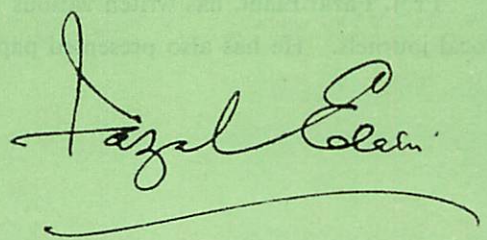
Looking back on my 23 long years of association with Dow Medical College as a teacher, I get a sense of satisfaction and joy when I visualise the growing ranks of young medicos filing through the portals of this College; growing not only in number but also in their brilliant achievements. The students of this College have been second to none in the fields of academic learning and dedication to duty, as well as in sports, cultural, literary and other extracurricular activities. Many of them are now shining like bright stars in the four corners of the globe.

The Journal of Dow Medical College has also grown in stature with the institution. It has been solely due to the selfless services of bands of dedicated and brilliant young men and women medicos, who, in the face of great difficulties and ordeals, kept the Journal going and progressing. The torch has been carried with pride and distinction. It is my prayerful conviction that, *Inshallah*, this relay will never deviate or decline.

I shall take this opportunity to humbly suggest that arrangements should be made to preserve permanently the various outstanding achievements of students and staff of this college, a record of memorable events and the dreams and aspirations of the Alma Mater in the shape of a museum or library to cherish the memories and to act as a beacon for the posterity. We must preserve "The footprints in the sand of time" for the future historian.

I wish to congratulate all those who have contributed articles of such high standard to the Journal. Lastly I wish to congratulate the Magazine Secretary, Mr. Hashem Shariat and his associates, through whose efforts this excellent publication is presented. He admirably overcame the burdles of time, money, space and sometimes inevitable set backs even at the cost of his personal comfort and studies. We salute such dedication.

With thanks giving for the past and best hopes for the future:



PROFESSOR FAZAL ELAHI
F.R.C.S.; F.I.C.S.; F.A.C.S

# PROFESSOR FAZAL ELAHI

*M.B., B.S.; D.T.M. & H. (Eng.); F.R.C.S. (Edin); F.I.C.S; F.A.C.S.,*
*Professor of Surgery Unit II*
*Dow Medical College, Civil Hospital Karachi*

Professor Fazal Elahi was born on 5th of January 1925 in distric Lucknow, India, from where he did his primary and secondary education, and then graduated his M.B.,B.S. from King George's Medical College, Lucknow in 1947. He was awarded Gold and Silver medals, for having honours in Anatomy, Pharmacalog and Pathology. Was awarded Prize of best Muslim student. Having a brilliant medical career, he was University Scholarship holder in all the academic years. He was member of his college tennis club.

On partition, he migrated to Pakistan and joined Dow Medical College as demostrator in Pathalogy from 1948-50.

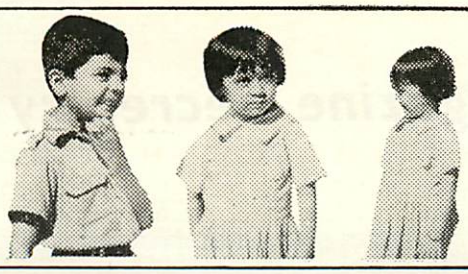
Prof. Fazal Elahi left for U.K. in 1950 for his postgraduation. He was of the first batch of British Council Scholar, from Pakistan. in 1950. He obtained his D.T.M. &H from London School of Hygiene and Tropical Medicine in 1951 and his fellowship F.R.C.S. from Edinburgh in 1953. Later in 1960 was honoured with F.I.C.S. and F.A.C.S.

On return to Pakistan from abroad in 1953, was appointed as assistant Professor of Surgery in Civil Hospital Karachi and its sister institution Jinnah Central Hospital Karachi and then in 1965 he was honoured with Professorship of Surgery.

The Surgical Unit III of Civil Hospital Karachi was organised and made in its present form and location by professor Fazal Elahi, and thus had the pleasure of being the first Professor incharge of this Surgical Unit.

Prof. Fazal Elahi, has writen various papers which have been printed in foreign and local journels. He has also presented paper in several seminars and Symposiums.

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| †Roger, C.J. (1970) Med. Proc. S.A. (Sept) 301 and 303 | gastro-enteritis with resp. infections | 30 | 6 months to 6 years<br>5 days treatment | 87%<br>13% improved | Prompt relief.<br>No superinfection,<br>well tolerated |
| | tonsillitis | 482 | | 95% | |
| | otitis media | 320 | | 90% | |
| | Veld sores (ecthema) caused by H. Influenzae | 50 | | 100% | |

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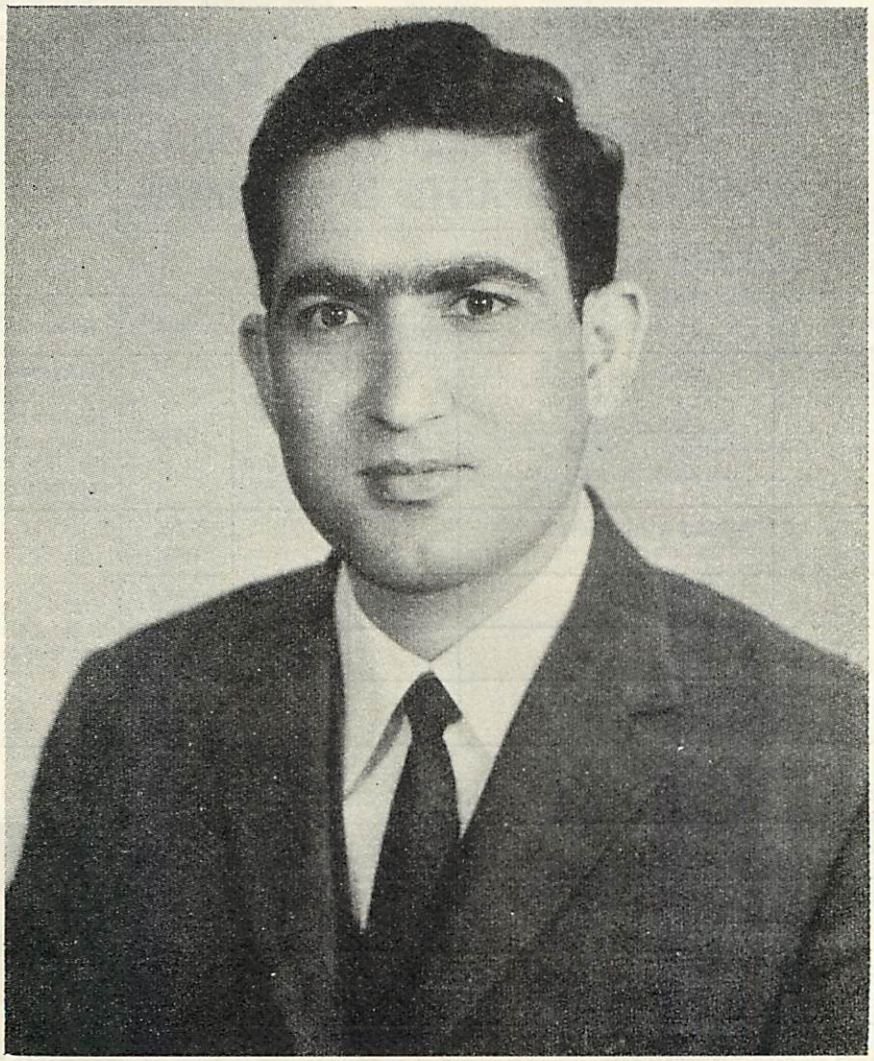
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# *Editor & Magazine Secretary*



HASHEM SHARIAT

*President*

**Arts & Crafts Society, Photographic Society and Writer's Forum**




**Voice of Medicos :**

*IT is a set convention to say a few words in the form of an Editorial, expressing one's views and as such, an Editorial has come to be regarded, unfortunately as a mere tool for criticizing, everything and asking for unattainable objectives, in vague generalization. Likewise, it is generally set aside, since it is not expected to have any practical base and foundation of its own.*

*My purpose, therefore, through these columns is to break this myth and say something positive, tangible and attainable—covering the various aspects of the activities of a medico.*

*There is an unending stream of problems that faces us, and no one can be expected to overcome them overnight. Nevertheless, efforts towards this end are the essence of a progressive outlook which we all must possess. However, efforts in this context must be directed on a priority basis, where we, as students must give priority to what affects us, try to solve our own acedemic problems, set ourselves a standard of learning, of which not only we are proud of but whichreflects to us and ot the world that we are students first engaged in pursuit of the noble cause of Medical Education, for which we entered this institution and not succumb to the temptation which are not of a permanent nature.*

**General Development and Extension of College and Hospital :**

*Having studied in the college environments amidst its traditionally old structures, it is gratifying to note that the expansion phase of the college under our able Administrator, Professor A. Wahid, is fast nearing completions It is requested that the new blocks to be built will have requisite arrangements for the students, with provision of proper boys and girls common rooms, Union office, Secreteries rooms, meeting room, guest rooms etc.*

*Likewise, we suggest and urge that the hospital would be extended to amalgamate within itself the adjoining offsprings namely; Sind Government Hospital, Epidemic Hospital, Civil Defence Training School and T. B. Training Centre, enabling us to have among other fascilities a separate O.P.D. block systematically demarcated.*

*Furthermore it is desirable to shift the, Epidemic Hospital from its present over crowded area to a suitable spot on the out-skirt of the city, for giving the needed relief to the residents of the area and a better atmosphere for patients suffering from contagious diseases.*

**Teacher, Student Relationship and Politics :**

*It is rather unfortunate that I have to include this aspect of our college life into my discussion here, but it is a bitter fact which we all must acknowledge. A teacher, is a custodian and a guardian to the student and it need not be stressed that no matter what stage a student reaches in his professional career, he can never and should never be oblivious of the debt he owes to him for his teaching. Any friction or any unpleasantness in their relationship must be viewed by all as such, and I feel that whenever possible, direct confrontation between an aggrieved student and a teacher or vice versa must be smoothened out through proper arbitrary channels in the spirit of forgive and forget.*

*The "DECLARATION OF GENEVA"* attopted by the World Medical Association at Geneva in* 1948, *which is an amendment to the "HIPPOCRATIC OATH" administered to Medicos all over the world, lays great stress on Student/ Teacher relationship and service to suffering humanity at large.*

*Likewise, acedamic problems pertaining to teaching, examinations and general demand, must be dealt with in the same manner in order to avoid confusion and indiscipline.*

**College Party Politics :**

*The spirit of opposition that we find in our college party politics must be checked, so as to avoid any harmful or negative tendencies. The blessing of constructive criticism must be not be transformed into an evil of destructive politics and this stands true for all.*

*A healthy opposition is a must for any improvement and development in the college, and for that matter any where, but opposition and criticism just for the fun of it or just to degrade and malign the other is not only shameful but an act done in a bad taste. An elected union, irrespective of its individual component and their affiliation must work in a harmonious manner and it must be treated as an entity representing the college and all the students. Its failure or its success should be shared by all and it should not be made a victim of strife due to petty personal considerations of a few students here and there.*

**Academic Time-Table :**

*Maximum utilisation of the time as per time-table would not only go a long way in creating the proper congenial atmosphere in the college, but will also help us in making most of what ever time we have at our disposal. Minor adjustments in clinical teaching times such as the present three hours stretch, of which we generally utilise half the time only, could well be divided with requisite breaks of lecture hours and in this way more concentrated efforts on the part of the students could be ellicited.*

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*See Page XXIX

**The Attendance Myth :**

*The present system of laying undue emphasis on the attendance as an indication of student's regularity is prepasterous, especially when we all know how we manage to get it. I feel that either these restrictions should be scrapped through and through, or they should be adhered to strictly. For by the present moderate pathway we are causing more harm than good.*

**Specialists and the under Graduate Students :**

*Specialities are coming up very fast and rapidly and within the last two years almost all the recognised specialities for the under graduates teaching have been started and fully and highly qualified teachers have already been recruited to these departments.*

*It is gratifying to note that the specialities in our field of Medical Profession, instead of being mere names on the board of hospital departments, have now started taking shape and are actually becoming live departments. But they are yet far from even adolescence and adulthood. They are almost todlers, even the oldest one to have taken shape in our hospital is far from being adequately staffed and equiped, less so are the other specialities which have been born in recent times. It need not be stressed what place specialities have in the present days Scientific World.*

*Further more we are gratefull to the administration under whose guidance the hospital building for housing these departments have been completed and it is hoped that they will have their due share of the responsibility of patient's care and teaching of these specialities subjects to the under graduate students so that they are not left behind in this advancing world in these specialities fields.*

**Clinical Meetings :**

*A series of regular clinical meetings could be initiated to provide a healthy background for the teachers/students discussion, on various clinical cases and this will not only help us to get a better understanding of the subject but will also break the ice and the apparent allofness that exists between the teacher and the student. More over it will give a phrtographic impression on the student's mind, once he attends such a wide ranging discussion as these clinical meetings will involve.*

**Guardianship :**

*Intermingled with the above, is the bright possibility of further improvement in the teachers/students relationship. By a guardianship scheme, by which a reasonable number of students specifically belonging to that catagory which needs guardians regarding matters like accomodations, books, medical treatment, matters concerning studies and other necessary items could be under the academic guardianship of a professor. These students which will have a mutual responsibility and respect towards their guardian—professor in particular & other teachers in general and in this way at least a start towards better, healthier and intimate atmosphere*

*between teachers/students could be achieved. Moreover, it would bring the teachers close and akin to the student and the present gulf that we find on their part to associate themselves with healthy student activities, be it a mere attendance in college functions would be removed.*

**College Record :**

*A word or two above the rather unfortunate state of affairs that prevails regarding the maintanance of college old records. It need not be mentioned that every institution has a history and a back-ground of its own, and the reflection that they give of the institution to others is immense and significant. Hence, to keep our records in tact and to maintain the present records in every sphere of student activities through an archives section would be a trouble worth taking, and I hope that the authorities concerned would take some positive steps in this context. To elaborate, suffice it to say that records like lists of students, union with their group photograph, all publications, published through union, the college Annual Magazine, list of ex-principals and professors with their biodatas and photographs etc., are the things which must be available easily for any reference that might crop up any time.*

**Shortage of Staff :**

*As is usual in all developing countries, Pakistan is also short of Technical Personal, a glaring example of this shortage is our college. We have only about* 78 *teaching staff members for a total number of about* 1100 *students, whereas the college statistic, as published about* 6 *months ago show that there should have been at least* 120 *teaching staff members. The worst part of it is that the student enrolment is increasing and contrary to it the experienced staff especially in the basic departments is dwindling. In order to maintain the standard of education etc., this trend should be arrested by providing insentives to the staff.*

**Authorities :**

*Some mention about the various administrative set ups that are responsible for the running of the college will show that at present they are being controlled by three often conflicting authorities, namely the Pakistan Medical Council, The Health Secretariat and the University of Karachi. Due to this not only is there a great confusion in the solution of the various administrative and academic problems of the college but also there is an unnecessary over-lapping and an intermingling of policies and their interpretations. It need not be mentioned the more the supervisors, the more the hindrance and consequently, limitations increase and work suffers. If an arrangement is made such that the college is under one authority for its proper administrative and academic working, I am sure, we shall find quite a few of our problems solved automatically.*

**Rural Health Service :**

*It is an uncontrovertable fact that the rural Health Services need a great improvement and evident patronage from all sections of the medical profession. It is the doctor's responsibility, no doubt to help improve the services, but it is natural that no amount of compulsory status can help until proper impetus is given to them—impetus in the form of proper facilities for his living and his practising,*

*and also some scope for his further advance and progress. The doctor going there must have a free hand to manage his affairs and he must be provided with proper facilities to do its work properly. Likewise, if he is given a stimulus that he can own the full fledged dispensary where t he works, after a certain given limit of time, he will definitely feel attracted towards it.*

**Difficulties Facing Foreign (Under Graduate) Medical Students :**

*Beside other minor problems that faces our foreign students here is the major difficulties of their language. Students find it very difficult to cope up with the lectures in the class. In order to solve their this problem it would be worth starting a short course of about three months or so, for their progress in the language and thus prepare them for the University level.*

*Likewise the allofness that is usually seen with the foreign students could well be removed if occassions like get-together, outings or educational tours and so on are arranged on Semi Government expences. This would not only bring the foreign students close to the local students but also in turn improve their language.*

**Increase of Seats :**

*The fast increasing number of students trying for admission to the Medical College, and in contrary to their luck of facilities, was soon felt by the President of the Union, who took the matter very urgently and after a very hard work and over coming several hurdles, he managed to increase the seat this year, in the Dow Medical College.*

*Boys seats was increased from* 50 *to* 94, *while that in the girls was increased from* 25 *to* 34.

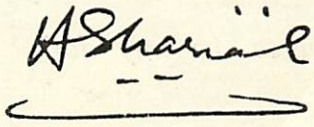
**Another Medical College :**

*At this stage it would be most appropriate to express our hearty welcome to the news about the upcoming Aga Khan's Medical college and hospital in Karachi. To have a sister institution as such would be an invaluable boon to all Karachites in general and the medical students and profession is particular in all the spheres of their activities.*

**Conclusion :**

*All said and done, I request my teachers, colleagues, friends and fellow students to give thoughts to the suggestions made in this editorial for bettering the lot of medicos in our province in particular and the country in general.*

*Finally suggestions and healthy criticism is welcomed from all, so that improvements could be made in the future issues of this magazines, by those who take over its management in future.*



# Hippocratic Oath.

*"I Swear* _____

*"To consider dear to me as my parents him who taught me this art; to live in common with him and if necessary to share my good with him; to look upon his children as my own brothers, to teach them this art if they so desire without fee or written promise; to impart to my sons and the sons of the master who taught me and the disciples who have enrolled themselves and have agreed to the rules of the profession, but to these alone, the precepts and the instruction. I will prescribe regimen for the good of my patients according to my ability and my judgment and never do harm to anyone. To please no one will I prescribe a deadly drug, nor give advice which may cause his death. Nor will I give a woman a pessary to procure abortion. But I will preserve the purity of my life and my art. I will not cut for stone, even for patients in whom the disease is manifest; I will leave this operation to be performed by practitioners (specialists in this art). In every house where I come I will enter only for the good of my patients, keeping myself far from all intentional doing and all seduction, and especially from the pleasure of love with women or with men, be they free or slaves. All that may come to my knowledge in the exercise of my profession or outside my profession or in daily commerce with men, which ought not to be spread abroad, I will keep secret and will never reveal. If I keep this oath faithfully, may I enjoy my life and practice my art, respected by all men and in all time; but if I swerve from it or violate it, may the reverse be my lot".*

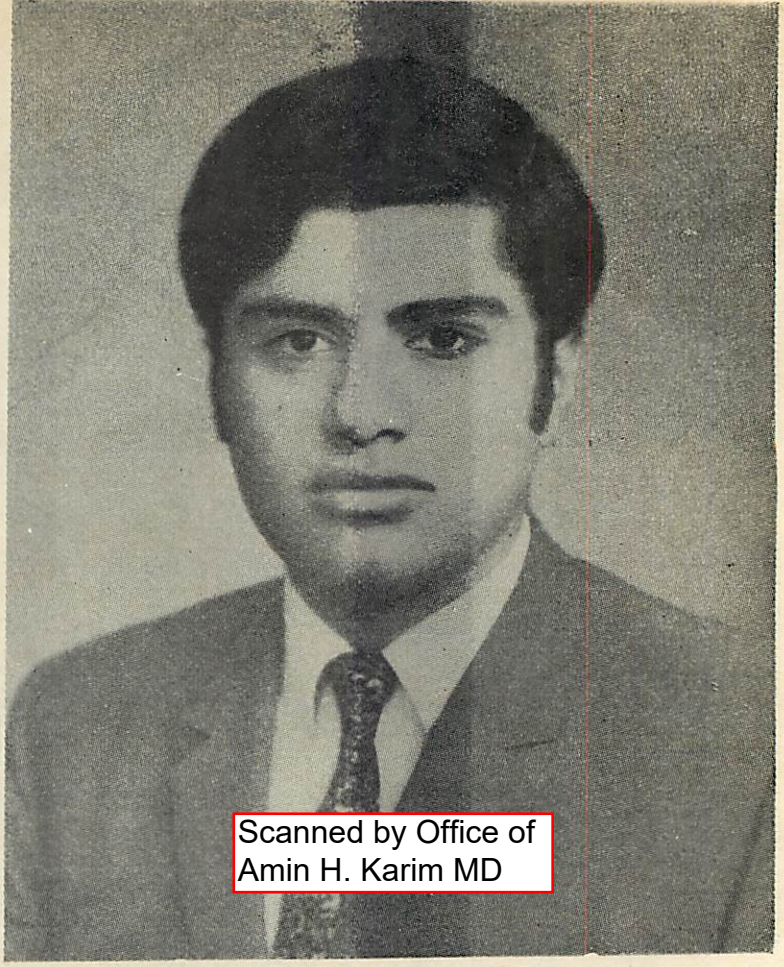
# Declaration of Geneva

*"I solemnly pledge myself to consecrate my life to the service of humanity. I will give to my teachers the respect and gratitude which is their due: I will practice my profession with conscience and dignity; the health of my patient will be my first consideration; Iwill respect the secrets which are confided in me; I will maintain by all means in my power the honour and noble traditions of the medical profession; my collegues will be my brothers; I will not permit considerations of religion, nationality, race, party politics of social standing to intervene between my duty and my patient: I will maintain the utmost respect for human lite from the time of conception: even under threat. I will not use my medical knowledge contrary to the laws of humanity. I make these promises solemnly, freely, and upon my honour."*

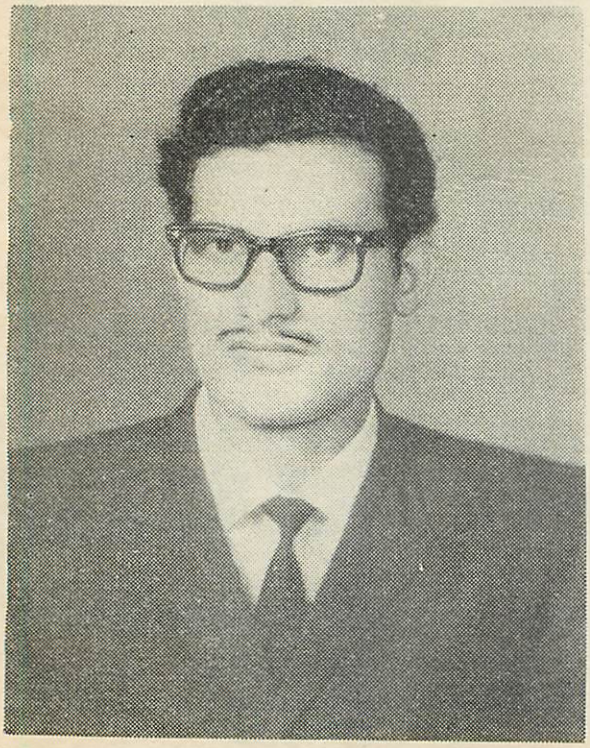
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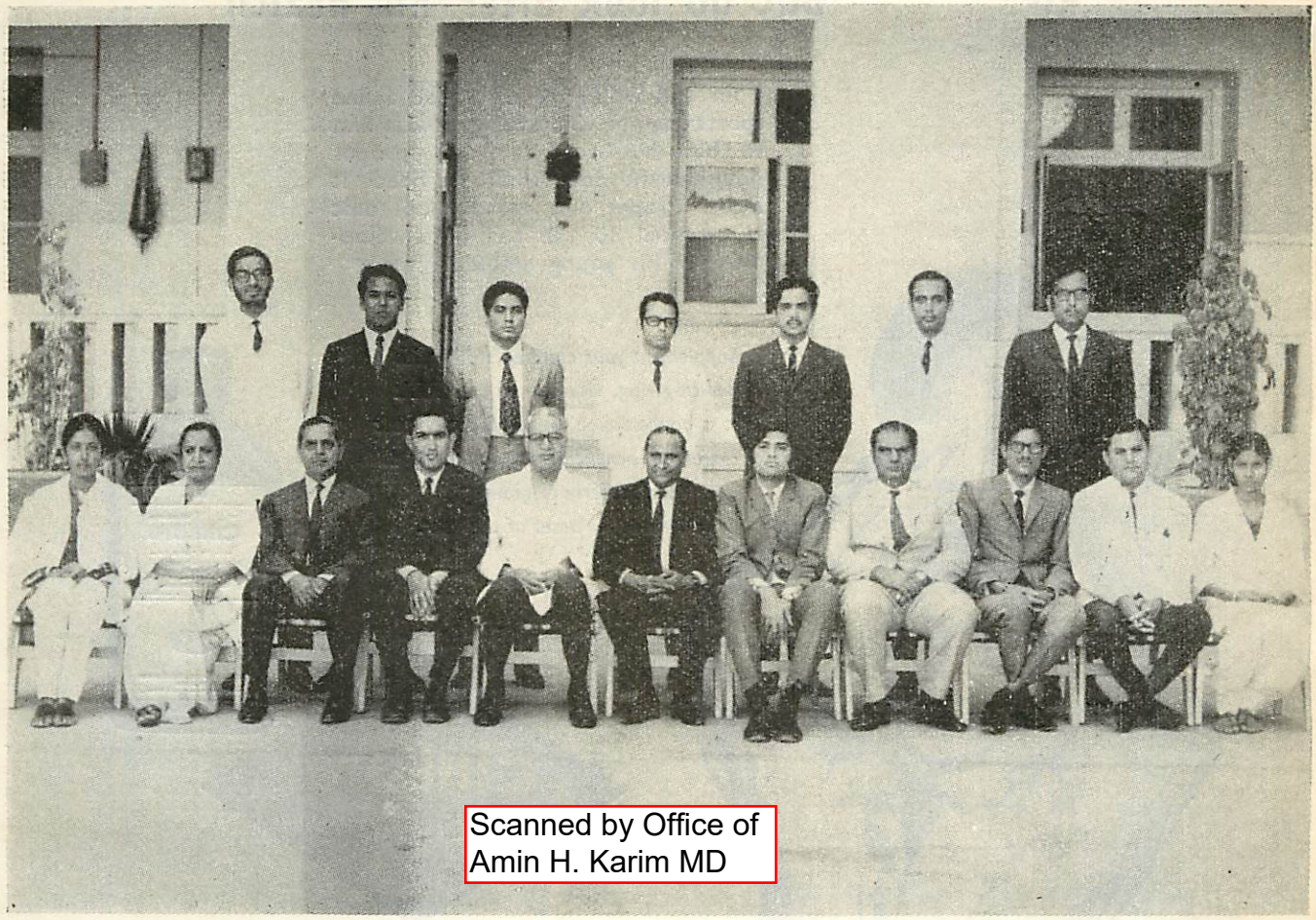
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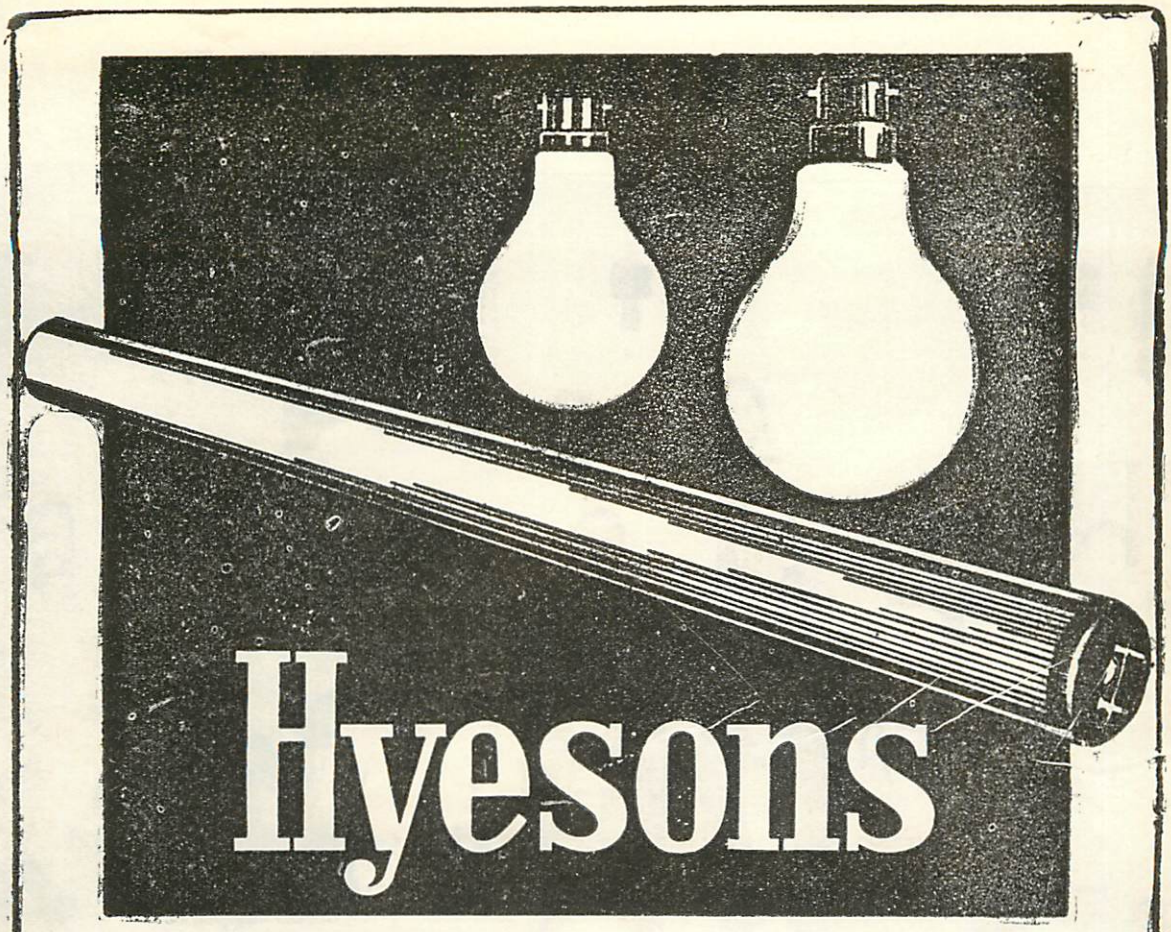


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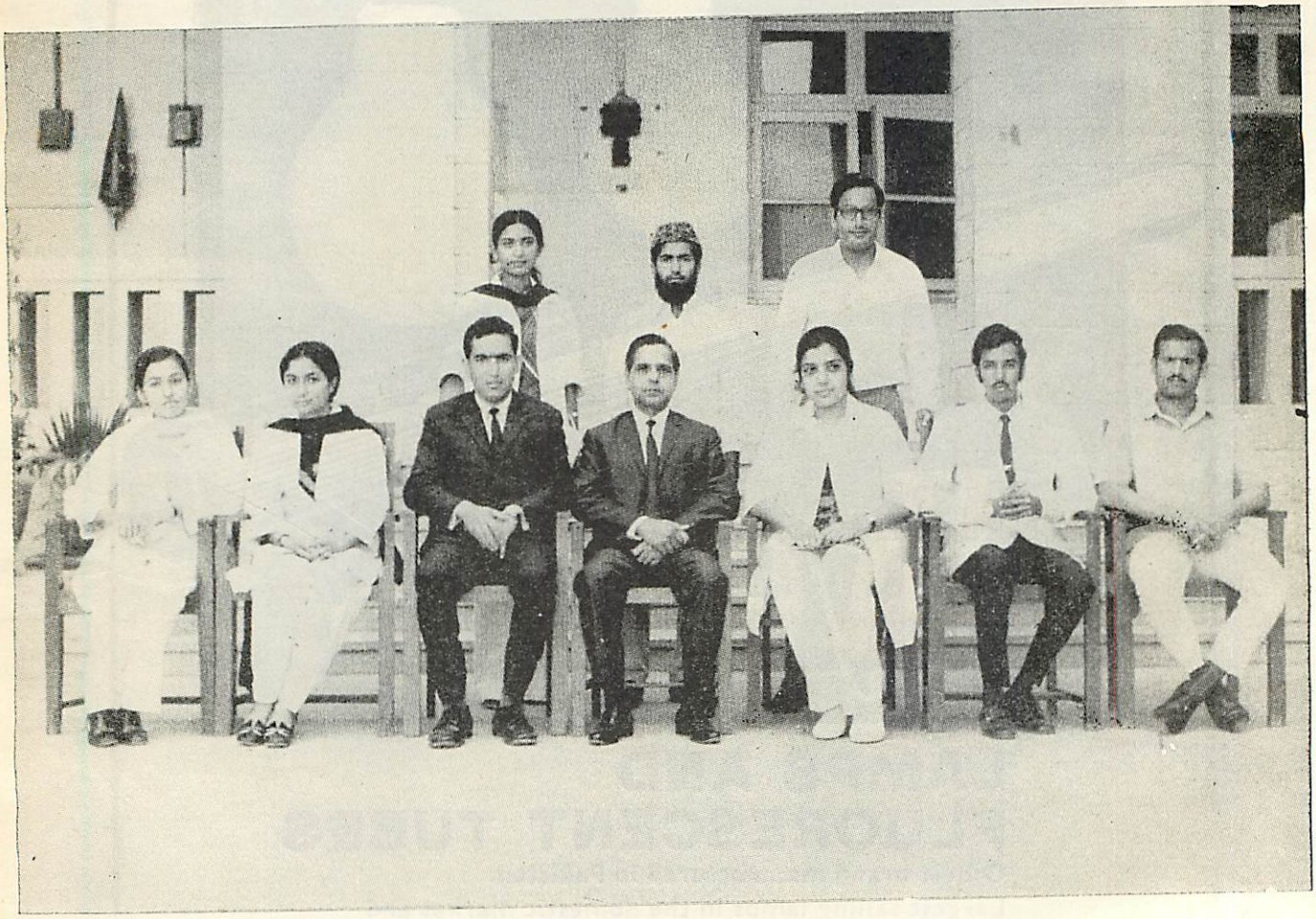
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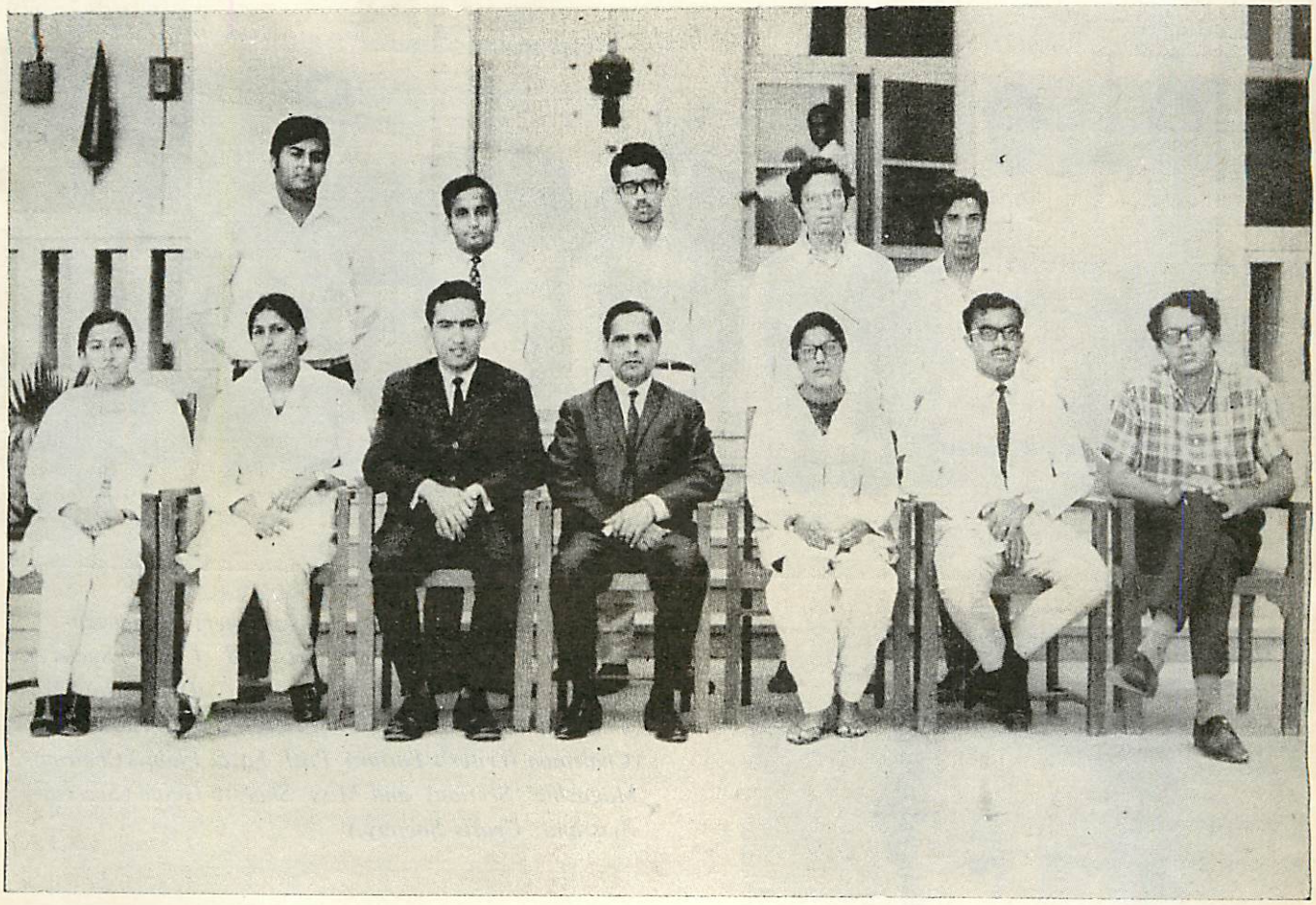
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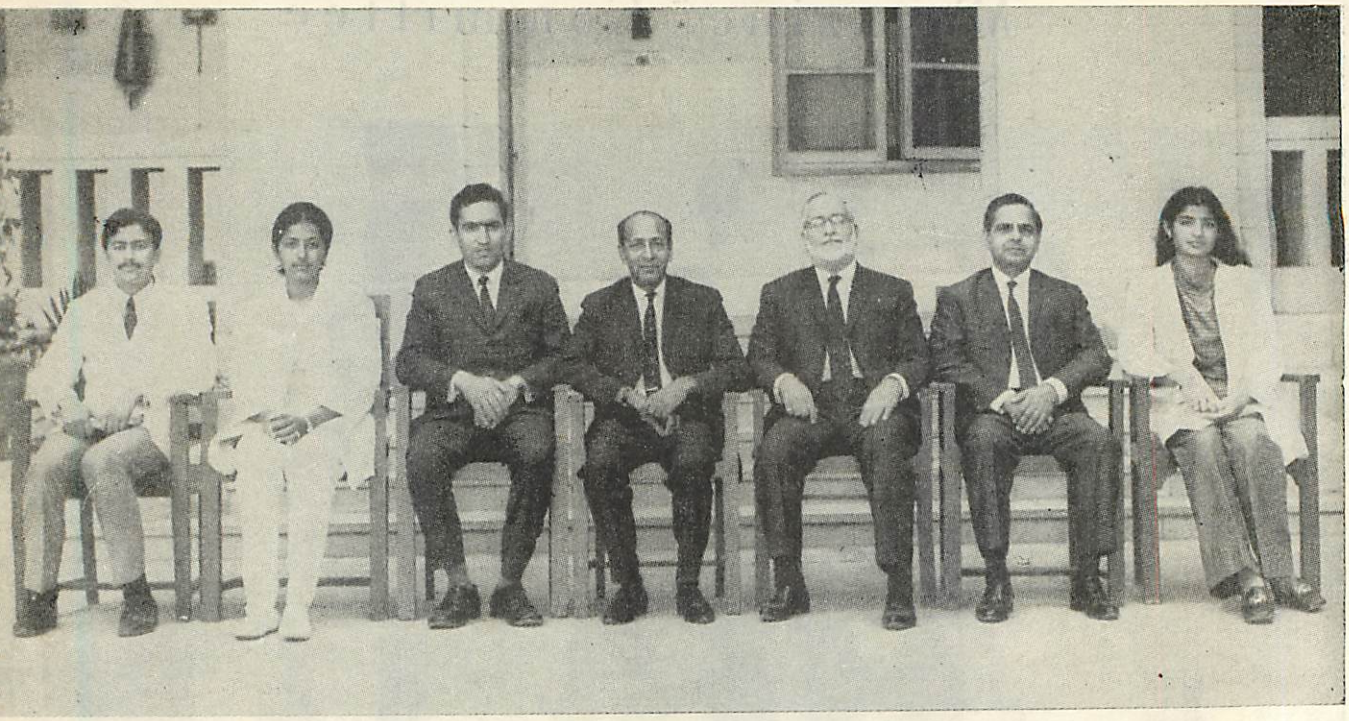
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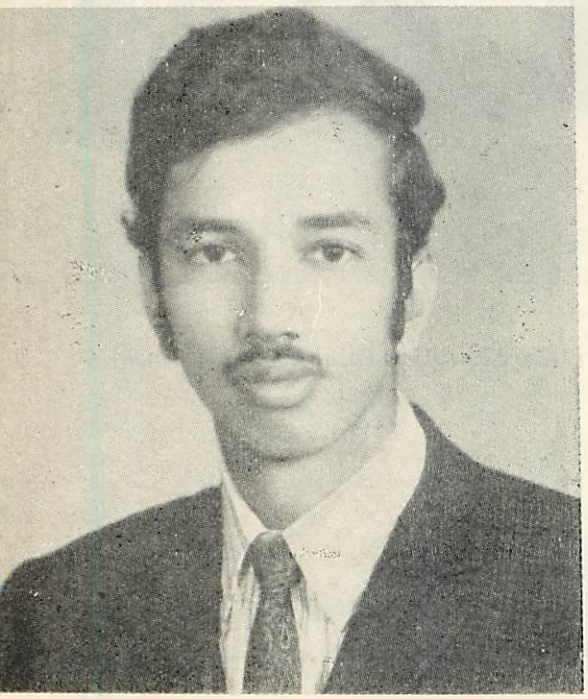
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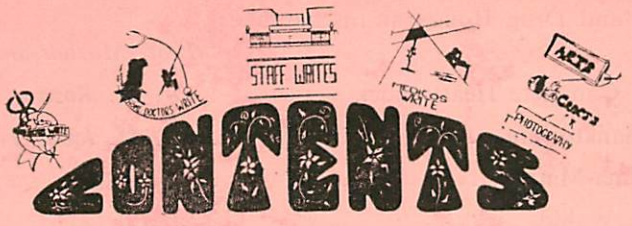


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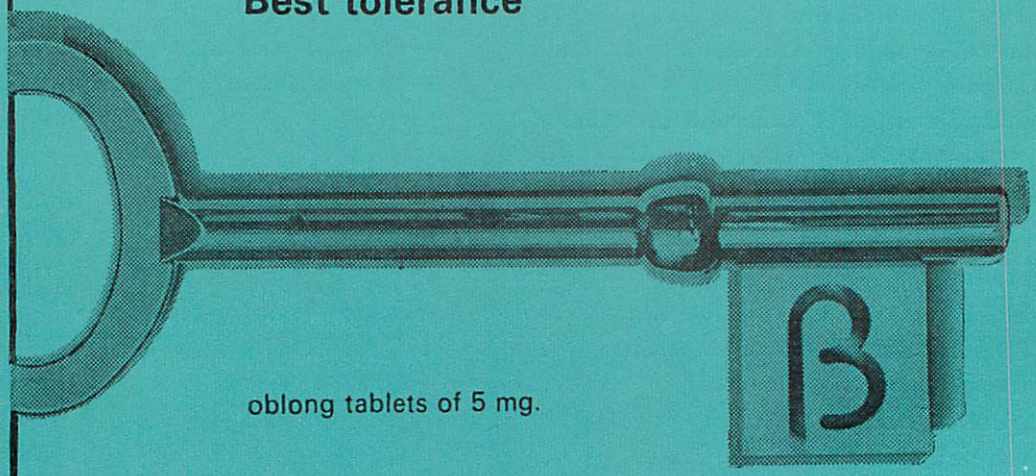

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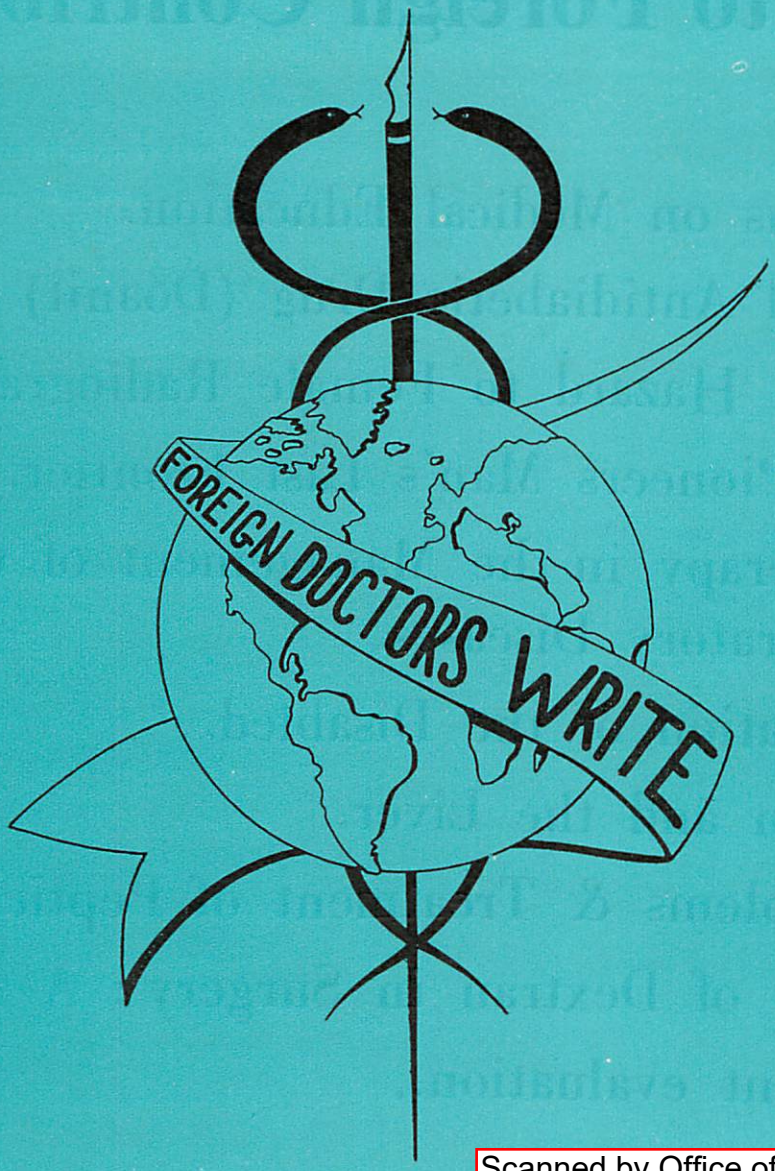



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# Reflections on Medical Education

T. E. LEAR
M.R.C.P.I., D.P.M.

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THE doctor is an expert about the body to which he devotes years of study and examination. The anatomy, physiology, pathology and genetics of the body absorb him throughout his medical school years and afterwards in his general hospital experience. Body systems and body symptoms are considered minutely. Symptoms and signs are classified as syndromes or diseases treatment is directed to dealing with symptoms. Psychology introduced to the curriculum sometimes gets regarded as another system to be studied by the conscientious practitioner.

In the general hospital the clinician deals with the body by the bed-side and in the laboratory the doctor examines the chemicals, tissues and invaders of the body. This is the practice of body medicine, symptom medicine and individual medicine. The more curious doctors wonder about their patients own impressions of their personal body experience, not only in terms of their medical information which they apply to themselves, but the spontaneous, unique and sometimes primitive feelings associated with body experience. This is, perhaps, a more sophisticated practice of psychosomatic medicine, but still the patient, although considered a whole person, is regarded as an individual. This is the extent of the hospital medical model, but the practitioner practising in a social community is confronted by more complex experience than this, because he cannot fail to notice that his patients are family members and members of work and other social groups. Recently a doctor reported the case of a young woman about to be married who complained of many symptoms and there were no physical signs on examination. Soon after this she arranged that her mother would come to live with her and continue to do so after she married. Her symptoms disappeared. The doctor might consider that his patient, as an individual, was not suffering now and feel satisfied that she was better, or he might have a serious doubt that his patient had in fact made a healthy life adjustment in having her mother with her and he might question this with her.

The general practitioner in England frequently refers to himself as family doctor and a physician to a family is different from a physician to an individual patient. The difference was long disregarded in medical education. Psycho-analysis provided the study in detail of the interaction of two people who worked together in a rather special doctor/patient relationship. For many years skills were developed and used in what remained a

rather elite specialist practice and research.

About twelve years ago Michael and Enid Balint, and soon after several psycho-analysts in London, led a trend towards appreciating the importance of studying the doctor/patient relationship, not only in the psychiatrist's office but in the general practitioners surgery as well. For the first time general practitioners and psychiatrists co-operated in a fruitful learning experience in "Balint type" seminars. In the seminars doctors learn to present their work with patients, paying particular attention to the doctor/patient relationship, not omitting to examine the doctors feelings as well as his patients. The work presented is a sample of the doctors usual range of work and not a special psychiatric part of it. Only doctors who are interested in understanding their transactions with patients in detail would be prepared to make what is a considerable investment of time and trouble, during from two to four years. (Compared with the time of a general medical training this is rather less). This style of seminar is used now by various professional workers in many countries for training and development of interpersonal skills.

In concentrating on the doctor/patient relationship, the doctor shifts from his traditional view of individuals to a view of two individuals. Although readily stated, the learning is much more challenging before the doctor reaches a sophisticated position where he can choose to view a situation in different ways and use the traditional skills and his new skills appropriately. In Northampton we have a seminar in which our work is to study the relationship between psychiatrist and patient in the out-patient clinic. The majority of psychiatrists are from India and Pakistan and I was daunted at the outset for two reasons among others. First, I realised that to work together meant extra work for English psychiatrists and for those from overseas to deal with our differences. Secondly, India and Pakistan seemed differently developed socio-economically and if these psychiatrists were returning to practice in their own countries, I was not sure how far a psychotherapeutic model was relevant at this time and that available resources in these countries might best be devoted to a medical psychiatric model. Then again, the pre-dominant model in English psychiatry is still the medical model of which they were well aware.

When we started working I was rather surprised at the sustained interest and determination of these psychiatrists in relationship work. I do not know how far they are motivated by the needs of their future practice as they see it, or to work out a more comfortable experience with the people with whom they are working while they are here. An important early consideration of the psychiatrist/patient interaction in the out-patient concerns the reasons for the general practitioner referring his patient, e.g. how far for consultation and how far for specialist treatment. The emphasis in the former being discussion between two doctors, the general practitioner continuing with the treatment, and in the latter between hospital doctor and patient, the hospital doctor continuing with the treatment.

The triangle of general practitioner, patient and hospital doctor is a fascinating study, with many practice variables described by Dr. R.B. Coles and H. Bridger in an illuminating paper.

In a psychiatric ward the training of psychiatric nurses by long tradition was not very different from that of their general hospital collegues, and yet the job is so different. The person in the general hospital ward is asking for his painful or weak body to be taken over until he can manage it himself again, whereas the person in the psychiatric ward is asking for help with some difficulty in his personal, family or social situation. There are, of course, occasions when both pleas for help are made at the same time, when the highest sophistication of nursing techniques would be called for. I am trying to show how immensely difficult it is for a psychiatrist with his medical training to begin to consider personal or relationship medicine.

I would define psychodynamics as the branch of science concerned with personal and interpersonal experience and the study of the forces which move a person or a group of people. This branch differs from traditional sciences and particularly traditional medical sciences in at least two respects. First with regards to measurements and secondly in the study of relationships rather than individuals.

Let me illustrate what I mean about measurement, from a report of a family doctor. A married woman came to see him saying, "I've got a lump in my breast, its painful and I am worried because my grandmother died of cancer two years ago". Now his job to start

with was with traditional measurement. He compared her account of her symptoms with other accounts of symptom clusters. He observed the size and texture of the skin of one breast, comparing it with that of the other and with many breasts which he had examined previously. When he was feeling the lump he noticed the characteristics and again compared it with other lumps which he had examined when he was learning this measurement. In this learning he compared his own technique with those of other doctors until some standardization was possible. This measurement is crudely in line with that used by physicists and chemists. It was important when he was making this measurement that he should not allow his feelings to distort his observations. For example, it would not do if this woman pushed her fear of cancer into him as it were, so that he expected to find hard glands in the axilla. Thus when the doctor makes his measurements in traditional medicine, he quite properly remains detached from his feelings as far as he can. All sorts of measurements of the body and body systems, somatic and psychological, symptom patterns and behaviour patterns are possible and are the basis of much of traditional medicine, including text-book psychiatry.

Let us return to the woman and her family doctor again. What he noticed was that she did not expose her breast fully at examination and seemed embarrassed and she told him that she sleeps on the sofa downstairs after her husband has gone to bed upstairs. Is this information to be ignored or does it require examination as well? It means that she aroused her doctor's curiosity and he noticed her embarrassment. What he did was to notice what she was doing to him and what he was doing to her. He observed his feelings and used them to examine the doctor/patient relationship. If this is something worth examining, is it worth measuring?, and how is the doctor to measure?, because using traditional measurement he is up a gum-tree for it goes something like this; how can he keep his feelings out to make a measurement when his feelings are what he examines with. It is only too easy to assume that because traditional measurement cannot be used, relationship work is unscientific. I suspect that this is one reason why physcis and chemistry faculties in Universities are so respectable and social science less so. This may be why interpersonal training in the medical curriculum has a low priority. The challenge of course is to find means of measuring interpersonal phenomena.

In recent years techniques have been developed but are not widely known or understood. In Professor Coplin's introduction to the book "The Use of Small Groups in Training" by Gosling, Miller, Turquet and Woodhouse he writes, "To meet the challenge to develop more effective group methods for changing behaviour, professionals from a wide range of disciplines have entered the arena with approaches that proceed logically out of their various theories and practices. Thus there is now emerging an expanding array of approaches based on psychoanalytic principles, role theory, mathematical models, group methods, group therapy, sociometry, psychodramatic and sociodramatic techniques and several schools of social psychology. Each approach has its own paradigm, special language, developed expertise and research method. For a field of enquiry, scarcely out of its infancy, it is perhaps too early to insist on irenic movement towards concensus. Much is to be gained in this first phase of the development of the scientific approach to the understanding of group behaviour by relatively independent studies carried out by students of different persuasions".

Returning to the family doctor, if he reported his experience with the same woman to a third person, his feelings could be examined and if there were several people to whom he was reporting such experiences, he might go some way towards standardizing the observations of his own feelings by mutual checking. Many relationship experiences can be collated in such a seminar and areas of overlapping experience begin to gain a validity with limitations of group bias.

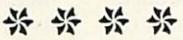
Early experience in development is essentially body experience for the baby as an individual or in his beginning relationship with mother, dualism of mind and body is almost untenable when psychological experience and body experience are almost indistinguishable.

As long as early beginnings influence us therefore, so long will body experience be immensely important and doctors who are body experts will have their skills highly valued. There is a trap here, however, for it may be supposed that learning about the body is sufficient with education for doctors. I doubt if it is enough and, particularly for

doctors practising in the community rather than in the hospital, body medicine may be too narrow in its scope. To introduce further opportunities into the medical course however, is not an easy task and may be best postponed, without doctors skilled in family medicine and with understanding of group techniques participating.

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# New Oral Antidiabetic Drug (Daonil)

THROUGH COURTESY OF

**Hoechst Pharmaceutical Company Ltd.**

THE introduction of oral antidiabetic preparations of sulphonylurea type inaugurated a new era in the treatment of diabetes mellitus. Among them tolbutamide, by virtue of its therapeutic excellence, has been the standard for more than a decade. Their use has meant that many diabetics have been able to do without insulin injections.

HB 419 (DAONIL) was discovered after testing some 8,000 compounds of this type and proved to be the most potent and yet least toxic antidiabetic agent so far produced.

**Chemistry:**

DAONIL (HB 419) is N—4—[2-[5-chloro-2-methoxybenzamido) —ethyl]-phenyl-sulphonyl-N'-cyclohexylurea and has the following structural formula:

## PHARMACOLOGY

**Hypoglycaemic action :**

In relation to the effective dose, DAONIL is several times more potent in hypoglycaemic action than any of the antidiabetic sulphonylureas or sulphonamide derivatives so far introduced. At the same time, it does not produce other effects. In man and various animal species the threshold dose is in the range of 10-20/mg/kg body weight.

Even at a dose of 0.07 mg/kg body weight by mouth its hypoglycaemic effect lasts for at least 24 hours. As the dose is raised, the duration of action lengthens, but the intensity of the effect is limited. Even when doses several times higher than the threshold dose are given, the maximum blood sugar reduction does not exceed 35%.

As far as comparative effectiveness is concerned, 5 mg. DAONIL is approximately equivalent, in man, to 1.0 g tolbutamide, 0.5g carbutamide, and 0.25g chlorpropamide.

**Absorption, breakdown, and excretion :**

After a dose of 5 mg DAONIL given by mouth to human subjects, the peak serum concentration is reached after 4 hours. In accordance with the elimination rate the concontration falls within 24 hours to less than 5% of peak value. Pharmacokinetic studies have shown that no accumulation is to be expected, even after repeated doses. In man the biological half-life in the plasma is approximately 5-7 hours.

In the human body, breakdown takes place by hydroxylation of the cyclohexyl group. The principal metabolite of DAONIL also has a hypoglycaemic effect, but this is weaker than that of the unaltered substance and is of no importance, when therapeutic doses are given.

**Toxicology:**

In animal experiments DAONIL displays remarkably low toxicity, both acute and chronic.

To determine the oral LD**50** the experimental animals were given the largest quantities capable of being administered by mouth in a single dose, yet no toxic symptoms were observed. The LD**50** for white mice, rats and guinea pigs was found to be more than 15 g/kg body weight, and for rabbits and beagles more than 10 g/kg body weight.

Teratological tests were carried out in rats

and rabbits. Scrutiny of the intact foetuses, followed by examination of transverse sections and of the stained skeletons, showed no evidence of any teratogenic action.

**Mechanism of action**

As in the case of other sulphonylureas or sulphonamide derivatives with hypoglycaemic effects, the action of DAONIL is closely linked with the pancreas. In pancreatectomized animals and humans, and in animals with complete alloxan diabetes, it fails to produce any hypoglycaemic effect. Histological studies of the pancreas have shown that in animals DAONIL causes changes in the B-cells of the islets of Langerhans—changes that are interpreted as evidence of insulin discharge and increased functional activity.

In perfusion experiments with DAONIL carried out in dogs, there was evidence of an immediate discharge of insulin from the pancreas. Even in vitro, DAONIL causes insulin release from rat and rabbit pancreas sections.

Also in man a release of insulin could be demonstrated after oral and parenteral administration of DAONIL.

Clinical experience in the oral treatment of diabetes has established that sulphonylurea derivatives are more suitable than insulin for the management of maturity-onset diabetes.

DAONIL has no antibacterial properties.

**Clinical Experiences :**

Prof. A. Loubatieres who is considered to be an authority on sulphonylureas has reported his findings on DAONIL in "Hormone & Metabolism" vol. 1:8-24 (1969) as follows:-

"Glibenclamide (DAONIL) is a new particularly active hypoglycaemic sulphonylurea.

When chronically administrered in the mouse, HB 419 (DAONIL) provokes a neogenesis of the beta cells and an increase in the islet weight. This drug is endowed with the betacytotrophic property."

J. Anderson et. al in BMJ (1970) No. 5709 have reported their findings as follows:—

"The drug is a potent stimulator of insulin release in maturity onset diabetes.

The drug is effective in doses as low as 2.5 mg; and the maximum effective dose is about 15 mg. No significant side effects were found during the period of study.

The metabolic investigations have shown that the drug has some actions which are as yet unexplained."

In the same issue of BMJ another two articles have appeared on DAONIL and findings of the authors are reproduced below:-

D.R. Hadden et. al on Pp. 570-572.

"In an initial trial of Glibenclamide in the treatment of maturity onset diabetes mellitus 28 patients were treated for upto one year and no toxic effects or side effects were encountered. The hypoglycaemic potency of this drug is such that 5 mg of Glibenclamide corresponds to about 1500 mg of tolbutamide and 375 mg of chlorpropamide."

D. J. O' Sullivan et al; Pp 572-574.

"Thirty patients were treated with Glibenclamide for periods upto 16 months. The drug is a potent hypoglycaemic agent, and taken in a single daily dose controls blood glucose levels over a 24 hours period in maturity onset diabetes. A definite dose-effect relationship exists and the drug may be used in doses of 5 to 20 mg daily. There were no appreciable side-effects or toxic effects during the period of study."

**Contraindications :**

Juvenile diabetes mellitus.—Serious metabolic decompensation with acidosis, in particular diabetic precoma and coma.

Serious impairment of renal function, especially if due to glomerular lesions.

In circumstances of unusual stress (e.g. accidents, emergency operations, febrile infections, etc.) it is usually advisable to change to insulin.

**Side-effects :**

Clinical experience in the use of DAONIL has shown that side-effects serious enough to

compel discontinuation are uncommon, even during long-term therapy. Gastrointestinal symptoms such as nausea, anorexia or feelings of pressure or fullness are seldom encountered.

Allergic skin reactions have only occasionally been observed and as a rule rapidly subside when treatment is discontinued.

Haemopoietic reactions (leucopenia, thrombocytopenia) occasionally observed in any kind of long-term medication, are uncommon and transient in patients taking DAONIL.

**Dosage :**

The initial dose of DAONIL should be 1/2 tablet (2.5 mg) daily taken immediately after breakfast or the first major meal. If smooth control is attained the daily dose of 1/2 tablet of DAONIL is continued as maintenance therapy.

If necessary, the daily dose can be gradually increased in steps of 1/2 tablet upto 3 tablets. Single daily dose upto 2 tablets (10 mg) of DAONIL can be taken immediately after breakfast. When the daily dose exceeds 2 tablets the excess should be taken immediately after the evening meal.

After every increase in dosage it is essential to check the blood and urine sugar.

**Change-Over from other Oral Antidiabetics to DAONIL :**

This change can be made from one day to the next.

(a) When control has previously been unsatisfactory:

The initial dose of DAONIL should be 1 tablet daily immediately after breakfast or major meal.

(b) When the control has previously been satisfactory but a change-over is necessary; Treatment should normally be started with 1/2 tablet of DAONIL daily immediately after breakfast or major meal.

**Change-over from insulin to DAONIL :**

The change-over can be carried out as follows:—

(a) Low insulin doses can be replaced at once. Then the dosage should be adjusted in the way prescribed for patients being treated for the first time.

(b) If the patient's insulin requirement is moderate or high, a gradual changeover is advisable. This can be done by giving insulin and DAONIL simultaneously and gradually cutting down the dose of insulin.

**Bibliography :**

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# Radiation Hazard to Female Radiographers



**SALMA HATIMALI**
M.S.R. (D)

**Royal Sussex County Hospital-Brighton, England.**

A radiographer, after becoming pregnant, may well be anxious as to whether continuing at work is likely to constitute an appreciable hazard to her coming child, and it is felt that some guidance on this question may dispel anxiety.

Experience in Great Britain has shown that very few, if any, radiographers working in radiodiagnostic and radiotherapy departments receive doses of radiation as a result of their work sufficient to cause any appreciable hazard. Present safety precautions are such that the personal dose seldom if ever approaches the maximum permissible dose recommended by the International Commission on Radiological Protection and referred to in a recent amendment to the M.O.H. Code of Practice, and as long as such normal precautions are observed, and care is taken to avoid an accidental exposure, the risk to the baby will be very small indeed when compared to the many other risks of everyday life.

*Radiographers in Diagnostic Departments other than those whose duties include the radiography of radium and radioisotope cases* will not need to take any additional action in regard to radiation safety in the event of pregnancy, but they should, as always, be careful consistently to employ good practice, and should be particularly careful to wear protective aprons whenever this is indicated, to avoid holding children, infirm or injured patients while an exposure is being made, and to guard against accidental exposure.

*Radiographers working in X-ray and r-ray beam therapy departments* will not normally need to take any special action in regard to radiation safety in the event of pregnancy, but they also should be careful consistently to employ good practice.

*Radiographers working either diagnostically or therapeutically with radium and radioisotopes and those whose duties include the radiography of radium and radioisotope cases* may, in some circumstances, need to have their duties modified in the event of pregnancy, but in all cases the doses recorded on their film badges or protection dosemeters will indicate to the Protection Officers what steps, if any, need to be taken.

It will be appreciated that it is essential for a radiographer who believes that she is pregnant to inform in confidence, the head of her department. This is particularly important for staff working with radium and radioisotopes in order to ensure that the maximum permissible dose to the foetus is not exceeded, and it will permit, where necessary, appropriate variations to be made in respect of the duties during the subsequent period of employment.

In all hospitals the doses recorded by the monitoring films of female staff are regularly checked where appropriate to verify compliance with the recommended maximum permissible dose for women of reproductive capacity, and particular care will be taken after pregnancy has been reported to ensure compliance with the lower maximum permissible dose that is recommended for the foetus.

**Historical and Scientific Background—I.C.R.P. Recommendations :**

A thorough study of hazards to personnel from exposure to ionising radiations has been made by the International Commission Radiological Protection. Resulting from this, the



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Commission has recommended maximum permissible doses for staff occupationally exposed to X-rays, r-rays and other radiations. These doses have been so chosen that it is believed that any resulting hazards will be at an extremely low and acceptabie level. The recommendations include specific references to the exposure of women of reproductive capacity and of pregnant women from radiation sources external to the body.

**Recommended maximum permissible doses**

The current maximum permissible dose to the gonads, red bone marrow and the whole body recommended by the International Commission on Radiological Protection is as follows:

Radiation workers—5 rems in a year but not more than 3 rems in any quarter.

This is, however, qualified in respect of females as follows:

The abdomens of women of reproductive capacity—1.3 rems in a quarter.

Pregnant woman—1 rem to the foetus during the course of pregnancy after diagnosis.

**Interpretations :**

The limitation of the maximum permissible dose to the abdomens of women of reproductive capacity to 1.3 rems in a quarter is intended to ensure that the dose to an embryo during the critical first two months of organogenesis will normally be less than 1 rem, a dose which the Commission considers to be acceptable. With regard to the dose to the foctus during the course of pregnancy after diagnosis, the Commission indicates that for diagnostic X-ray workers, the recommendations will usually be satisfied even if the woman continues to be occupationally employed under circumstances where the dose to the abdomen is limited to 1.3 rems in a quarter. (This implies that it is the dose to the surface of the abdomen that is so limited.) The Commission further indicates that in the case of workers with high voltage diagnostic X-ray equipment it will usually be necessary to assess the dose received by the foetus. (This is because the depth dose may by the foetus. (This is because the depth dose may be such that limiting the dose to the surface of the abdomen to 1.3 rems in a quarter will be no guarantee that the foetus will not receive more than the maximum permissible dose.)

**Discussion :**

The recommended maximum permissible dose of 1.3 rems in a quarter to the abdomen of women of reproductive capacity is equivalent to an average of about 400 rems in a month. The figure of 1 rem to the foetus during the course of pregnancy after diagnosis averages at about 150 mrems in a month during the subsequent period of pregnancy. In all but the most unusual circumstances (involving supervoltage equipment, when the depth dose might possibly exceed the surface dose), it follows that if the dose received by the surface of the abdomen (that is, as measured by personal monitoring) never exceeds an average of 150 mrems in a month, compliance with the recommendations of the I.C.R.P. is ensured.

Experience of personal monitoring shows that it is unusual for a radiographer working in a diagnostic or therapeutic X-ray department to receive a monthly dose to the surface of her abdomen as high as 150 mrems, and that it is extremely unusual for it to be as high as 400 mrems. Typical of many departments are monthly doses of less than 20 mrems. The risk of radiographers in such departments being excessively exposed is obviously extremely small, and the further risk that an excessive foetal dose might occur is remote. *Only if the average monthly surface dose of a pregnant radiographer exceeds* 150 *mrems and she is using X-ray emergies over* 100 *kVp* would the question of assessing the foctal dose arise, and, as the Commission has indicated, there would be no need to assess foetal dose in the case of workers with low-voltage diagnostic equipment provided the monthly surface dose does not exceed 400 mrems.

Experience of personal monitoring also shows that it is unusual for radiographers working with r-ray beam units to receive more radiation than workers with X-ray equipment (*i.e.* 20 mrems per month) and provided that monthly doses no higher than 150 mrems are received, the foetal doses would be well below the recommended limit.

The position may, however, be different in the case of radiographers who work with radium or radioisotopes. Somewhat higher doses are also possibility in the case of radiographers whose duties include the radiography of patients undergoing radium or radioisotope therapy. Depending on the circumstances, radiographers in these groups may receive doses to the surface of the abdomen which exceed 1 rem in nine months. Although the doses will be controlled within the recommended maximum permissible dose to the abdomen of a woman of reproductive capacity, they may be excessive in relation to that recommended for the period subsequent to the confirmation of pregnancy, and therefore a rearrangement of the duties performed by such radiographers may be necessary after they have become pregnant, Such a rearrangement will, of course, take into account the results of previous personal monitoring.




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SERAI ROAD, KARACHI.

# Lederle Pioneers Man's Last Frontier

*By*

CHARLOTTE D. CUFF

THE sea is a rich brew of life and life forms, covering 70.8 per cent of the planet Its depths conceal many mysteries It is man's last frontier

To a world which has watched men walk on the Sea of Tranquility, exploration of the "inner" space of the oceans may, by comparison, seem dull. But to a growing number of people, the fruits of ocean research may make the plunge both exciting and rewarding for mankind



To these pioneers, the oceanologists, oceanographers and marine biologists, the sea holds a potential wealth of food, fuel, drugs, minerals and, perhaps, great underwater cities for a burgeoning population

Man's search for medicines from the sea is both old and new. A thousand years before Christ, the Chinese and Babylonians were using seaweed and its extracts as soothing agents and emollients for ulcers, wounds and other painful skin conditions

Potash obtained from kelp was an important ingredient in skin cleansing agents for thousands of years. The Vikings ate codfish livers claiming it helped their vision for navigating

Until recently, however, marine pharmacognosy, or drugs from the sea, has been restricted by man's limited knowledge of the biology of the oceans and his inability to recognize, collect and process it resources. Being a land-based creature, man has concentrated his search for drugs on the terrestrial sources which surround him, such as soil, plants and animals

But with the advance of science and technology and a new emphasis on oceanography, biologists, chemists and pharmaceutical and medical researchers have taken up the challenge of the sea as the source of new medicines to fight human disease

Cyanamid's Lederle Laboratories, a research leader in natural drug products, such as the soil-derived broad spectrum antibiotics, is actively engaged in a "wet" space program to explore the oceans for potential drugs



To select plant and animal species for study, Lederle's Dr. Paul Burkholder is retracing a

course which has taken him below the ocean from Bermuda to Australia in his 15 years as a marine biologist. He came to Lederle from the Lamont Geological Observatory at Columbia University where he chaired the marine biology program.

Famed for his discovery of chloramphenicol, the most effective drug against typhoid fever, psittacosis and Rocky Mountain spotted fever, Dr. Burkholder has a long and distinguished career as a biologist, botanist and bacteriologist. He has held important positions at Yale, the University of Georgia and the Brooklyn Botanical Garden.

Dr. Burkholder's assignments in the Lederle program include going back to the sites of earlier undersea explorations in the Caribbean and Pacific to collect samples of seaweed, plankton, jellyfish and gorgonias (soft corals) that he suspects hold medicinal promise.

Dr. Burkholder's specimens are preserved in alcohol, dried or frozen and shipped to Lederle's 550-acre research complex in Pearl River, New York.

There a structure and analysis team begins testing extracts of the specimens. Those that show interesting activity are purified until the compound that shows activity can be isolated. Testing continues to determine the active compound's therapeutic activity. The complicated process eventually leads to the identification and synthesis of compounds that show promising medicinal effectiveness.

The laboratory hunt is filled with suspense. Will the Lederle team turn up a new life-saving drug? Perhaps. Other scientists studying ocean life have found potentially useful medicines. For example, extracts from the green sponge have shown antibiotic activity and sea cucumber derivatives have inhibited the growth of malignant tumors in mice. Other scientists have shown that the starfish excretes insulin and clams contain heparin-like antibiotics. In the field of heart and circulatory research, it has been learned that the stonefish secretes a poison which lowers blood pressure in animals and the octopus has a substance in its salivary gland which is more effective in correcting irregular heartbeat than quinidine sulfate.

In addition to the record to date, the Lederle scientists know that only a small fraction of sea life forms have been examined. According to Chmical Week magazine, "... of the many organisms that are known—or thought —to contain biotoxic susbstances, perhaps less than one per cent have been examined for biological activity. Of that one per cent, only a dozen or so have been evaluated for chemical and pharmacological properties."

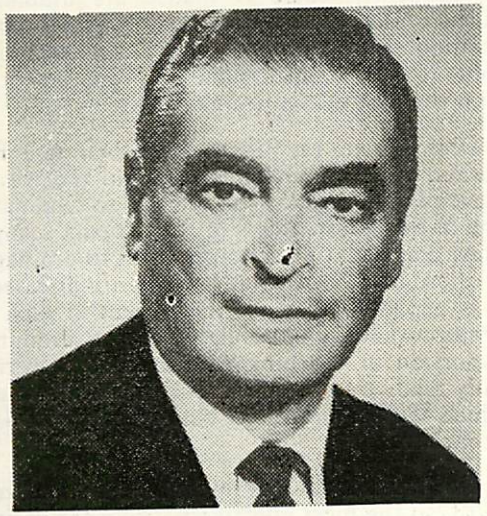
The Lederle scientists also believe that many forms of marine life may turn out to be simpler in structure than their terrestrial counterparts, making easier the task of synthesis. Since a product from a living organism is usually more compatible with another living organism, the Lederle team reasons that side effects might be minimal in drugs from the sea.

Only time and meticulous work in the laboratory will tell. If the researchers' expectation and experience are correct, the 1970's may yield life-saving drugs spawned by strange creatures now living in the sparkling waters of man's last frontier..the sea.

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# Physiotherapy in the Management of Chronic Respiratory Disease



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THE beneficial effects of breathing exercises have now been well established in the management of chronic respiratory diseases which are associated with an obstructive bronchial element: bronchial asthma, chronic bronchitis, pulmonary emphysema, bronchiectasis, and cystic fibrosis. The aim of controlled breathing techniques is to alleviate the effects of physiological changes which have developed as a result of the bronchial obstruction, with a tendency towards the retention of bronchial secretions, increased work of breathing, overdistention of the lungs, and impaired distribution of gas.

The common factor in all these conditions is an increase in the effort required to make an expiration. This may not be a serious matter while the patient is resting, but it becomes so when he must carry out some activity which requires an increase in ventilation. Breathlessness then develops as a result of intensification in both the degree of air trapping and distention of the alveoli.

Furthermore, the breathing pattern in these patients has become abnormal. The overinflated lungs cause a flattening of the diaphragm, with loss of its domed shape and restriction of movement, thus causing it to be a less efficient inspiratory organ. Consequently, these patients expend inspiratory efforts in actively elevating the upper parts of the chest and, at the same time, they tend to rush into the next inspiration before the previous expiration has been completed. This abnormal pattern is further exaggerated by ineffective, paroxysmal coughing which leads to increased air trapping.

In the management of patients suffering from chronic obstructive lung disease, a comprehensive therapeutic program is essential which should vary with each individual depending on the degree of physical disability. The work of breathing must be reduced not only by decreasing airway resistance with bronchodilator therapy, but also by thinning and decreasing bronchial secretions and providing for their effective elimination.

Physiotherapeutic techniques to accomplish these purposes consist of teaching relaxation, re education in breathing control, elimination of retained bronchial secretions, and increased exercise activity. Tension and apprehension are reduced by explaining to the patient in simple terms the physiologic abnormalities which have developed because of his disease, the aims of treatment, and the benefit from exercises. A simple and realistic program is organized which the patient carries out regularly at home; it is reviewed periodically by the physiotherapist and the attending physician.

**Relaxation**

The attainment of both mental and physical relaxation is fundamental. Not only do these patients hold themselves stiffly, but the accompanying anxiety and worry about their disability favors the use of accessory respiratory muscles.

Relaxation of the muscles of the chest wall will conserve energy for the performance of more useful functions by other voluntary muscles of the body. The patient is taught to relax his accessory muscles, drop his shoulders, and eliminate the elevation of the upper part of his chest during quiet respiration. This can be achieved only if the patient is also mentally relaxed.

**Breathing control**

Education in breathing control is directed toward a more efficient breathing pattern, with more time expended in expiration and a reduction of the resistance to airflow by the use of pursed lip breathing.

Premature collapse of the bronchial airways during expiration is the most serious factor in chronic obstructive lung disease. This is due to the pressure differences which exist between the higher pressure in the intrapleural space and lower one in the tracheo bronchial tree. This difference in pressure is largely the result of the diminution in the elasticity of the walls which tends to support these airways. Because of premature collapse of the bronchial airways, air trapping with overdistention of the alveoli takes place.

It is a common clinical observation that many of these patients will spontaneously exhale through pursed lips, especially when they have become unusually short of breath. An obstruction to the outflow of air at the lips produces an increase in the pressure within the mouth which is reflected backward into the bronchial tree, presumably leading to a reduction in the tendency of the airways to collapse. In an attempt to overcome the ill effects of premature collapse of the bronchi during expiration, the patient is taught to reverse his usual pattern of breathing. Expiration is made a more active and prolonged phase of respiration and, at the same time, the patient is encouraged to purse his lips during expiration

To restore the normal efficiency of the diaphragm, the patient is made to assume the head down position at an angle of approximately 20 degrees. In this position, the weight of the abdominal viscera pushes the diaphragm upward. This effect can also be achieved by having the patient tilt his trunk forward at an angle of approximately 20 degrees.

**Postural drainage**

Adequate drainage of the more dependent areas of both lungs is adversely affected by gravity and also by the position of the trachea and the larger bronchi which are tilted toward the posterior aspect of the thoracic cage. Consequently, there is inadequate drainage of the bronchi when the patient is in a supine position. The effect of gravity can be overcome if the patient assumes a prone position with the foot of the bed elevated.

Drainage of the tracheobronchial tree by mechanical means is important in the treatment of bronchiectasis as it helps to eliminate one of the major causes of the patients' symptoms. Particular attention is given to drainage of those lobes of the lung which are diseased. It is necessary to place the patient in such a position that the particular bronchus draining a portion of the lung will be situated vertically relative to the bifurcation of the trachea which should lie directly below this particular bronchus.

The bronchus of the upper lobe runs downward, so the most effective position for drainage is an upright position. The bronchi of the middle lobe of the right lung and the lingular segment of the left upper lobe both run horizontally and forward; effective drainage occurs in the supine position with the body tilted opposite to the side being drained at an angle of 45 degrees. The bronchi to the superior segments of both lower lobes run in a horizontal and backward direction, so the proper position for their drainage is a prone position with the body turned on the side opposite to the lung being drained. For drainage of either lower lobe, the foot of the bed is elevated 12 inches; the patient is in a prone position and tilted so that the lobe being drained is situated above the bifurcation of the trachea. At least ten minutes is required for proper drainage of each segment or lobe; during this time, the patient should cough at regular intervals. Drainage should be carried out each morning on arising and in the evening before going to bed.

To aid in the removal of the thick, viscid bronchial secretions which adhere to the walls of the bronchi, vibration and clapping of the chest wall are performed manually by the physiotherapist. Vibration is accomplished by producing a fine shaky movement of the hands with one hand placed on top of the other on the chest wall overlying the lobe being drained. Clapping is carried out by cupping the hands slightly and allowing them to fall by their own weight on the chest wall. Both these procedures are performed over the particular lobe being drained during the expiratory phase of respiration when the patient is also encouraged to cough.

**Physical activity :**

General physical activity is of great importance in maintaining muscular efficiency, since inactivity leads not only to atrophy of voluntary muscles but also to circulatory insufficiency. A programme of gradually increasing exercise is instituted to improve the patients' general physical fitness. First, the patient is made to walk on the level, assisted by the administration of oxygen if necessary. Activity is then gradually increased to riding a stationary bicycle and, finally, to climbing stairs. The exercises are synchronized with the patient's breathing, so that inspiration occupies one third and expiration two thirds of an exercise unit.

This graded exercise program results in more efficient use of the available oxygen by the exercising muscles and also considerably improves the mental outlook of the patient.

**Results of physiotherapy**

Results are governed largely by the severity of the patient's disease, the degree of his disability, his co-operation, and the time spent by the attending physician and a competent physiotherapist on individual treatment. The treatment cannot be successful unless the patient co-operates. Each patient is an individual problem and should receive individual instruction by a competent physiotherapist until he has mastered these exercises sufficiently to carry them out safely at home.

**Acknowledgement :**

(I wish to thank Miss Ruth Grant, Department of Physiotherapy, Winnipeg General Hospital, for her invaluable assistance in the preparation of this paper.)

# Rehabilitation of the Disabled

## (*Corrective Spinal Braces*)

*By*

JAMES JALAL

*U. S. A.*

THE use of "Corrective spinal braces" (back supports) is limited almost completely to the treatment of scoliosis of the spinal caused by idiopathic and paralytic factors. It is doubtful if so-called active corrective braces do actually exert continuous corrective force upon the deformity, which requirement is an essential feature of any appliance designed to correct a structural deformity of the spine. Many orthopaedic surgeon's experience is that correction of scoliosis can be obtained only by treatment with some form of rigid hinged cast or by means of multiple traction or by combination of both. The Milwaukee Brace, however, provides these traction and corrective forces in an ambulatory (up-walking) appliance.

Maintenance and correction by this retentive apparatus must be continued throughout the period of growth or the involved vertebrae must be surgically fused. Spinal braces also have a place in the retentive treatment of structural or congenital scoliosis to accomplish one of the following purposes:

(1) To prevent a progressive increase in deformity during the period of rapid growth so that there may be hope in the early cases of avoiding surgery or in children too young for surgical fusion.

(2) As a retentive or holding appliance, to prevent recurrence following operative fusion.

(3) To overcome weakness and instability.

(4) To relieve pain.

It is beyond the scope of this text to describe the operative methods and techniques used in the treatment of scoliosis by means of spring corrective supports attached to vertebrae.

The section includes only a description of those metal supports, which are most commonly used in other countries as post-operative treatment of scoliosis. Many of these appliances are of complex design and present difficult problems to the appliance-maker in their construction and fitting so much so that it may well tax the skill and patience of the appliance-maker. Moreover, careful selection of materials and design should be made in the detailed prescription. Constant supervision of fitting and frequent follow-up inspection, both on the part of the physician and the brace-maker, is essential if the appliance is to function comfortably and effectively. A negative and positive cast carefully made of plaster of Paris from the torso is an essential requirement for the construction of most of these corrective brace supports, and meticulous attention in the application of cast and shaping of the form is of utmost importance.

# ENDOTOXIN AND THE LIVER



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THE intimate anatomical and functional relationship of the liver and the gastrointestinal tract in maintaining the metabolic integrity of the human body is well known. In health or in disease, the liver plays a central role in the metabolism of carbohydrates, proteins, and fats before they are dispensed to vital organs of the body. A key problem is whether the intestinal tract by virtue of being a host for gram negative micro organisms influences the "defensive role" of the liver in situations where it becomes pathologically involved. We report some of the studies carried out in our laboratory in investigating the role of the reticuloendothelial system in modifying the extent of hepatic injury in experimental nutritional cirrhosis This investigation we carried out to test our hypothesis that such an altered host and defense relationship is indeed an important contributory mechanism by which the hepatic injury is initiated and developed in "nutritional cirrhosis."

Excerpts from the data and the results derived from our earlier published reports (1,2) are presented in the following paragraphs.

As shown in table (1) when $I^{131}$ labelled microaggregated albumin is injected intravenously into rats on choline deficient and control diets and the half clearance time measured at various dietary periods, it is found that a significant prolongation is evident in treated over control animals at the end of one and two weeks. The prolongation of half clearance time in rats on a choline deficient diet clearly indicates impairment of the reticuloendothelial function in the early phase of the development on the cirrhotic lesion. The significance of this observed phenomenon is yet to be clarified.

In a similar experimental model, we then studied lethality of rats on a cirrhotogenic diet. Table(2) shows the comparison in lethality of endotoxin in treated and control animals. As shown, at an endotoxin dose of 0.5 mg. not a single death was encountered in control animals, whereas all the animals on the choline deficient diet for two week periods died.

Fig. (1) shows the hepatoxic effect of sublethal doses of endotoxin in treated and control animals. It is evident that the serum glutamic oxalic and pyruvic transaminase levels of control animals showed little change from normal at 0.10, 0.05, and 0.01 mg. of endotoxin administration. At the same endotoxin doses, these enzymes in the animals on a choline deficient diet were much above the saline injected controls.

Since the reticuloendothelial system is known to be of importance in the detoxification of endotoxin, it is tempting to speculate that the decreased R.E.S. activity in choline deficient animals accounts for the enhanced susceptibility to the effects of endotoxin. Further studies are in progress to see whether the absorption of endotoxin is greater in nutritionally cirrhotic animals.

TABLE 1.

**Clearance of Microaggregated Albumin [AA] in rats on Choline-Deficient [CD] and Choline-Supplemented [CS] Foods at various time periods**

| Type of diet | No. of paired rats | Period on diet | AA-$I^{131}$ batch | Half-clearance time | | | t |
|---|---|---|---|---|---|---|---|
| | | | | Mean | S.D. | S.E.*a* | |
| | | wk. | | | | | |
| CD .. .. .. | 7 | 1 | A | ; 26.4 | ±8.02 | ±2.97 | ; 3.0 |
| CS .. .. .. | 7 | 1 | A | ; 17.0 | ±4.04 | ±1.49 | |
| CD .. .. .. | 10 | 1 | B | ; 14.2 | ±2.01 | ±0.63 | |
| CS .. .. .. | 10 | 1 | B | ; 11.0 | ±1.56 | ±0.49 | 7.3 |
| CD .. .. | 6 | 2 | A | ; 18.3 | ±2.18 | ±2.53 | |
| CS .. .. .. | 6 | 2 | A | ; 14.7 | ±2.44 | ±0.99 | NS*b* |
| CD .. .. .. | 7 | 2 | B | ; 11.6 | ±1.75 | ±0.66 | NS |
| CS .. .. .. | 7 | 2 | B | ; 11.5 | ±2.32 | ±0.87 | |
| CD .. .. .. | 8 | 4 | A | ; 20.2 | ±4.09 | ±1.44 | NS |
| CS .. .. .. | 8 | 4 | A | ; 19.5 | ±5.02 | ±1.76 | |
| CD .. .. .. | 6 | 4 | B | ; 15.0 | ±1.82 | ±0.74 | NS |
| CS .. .. .. | 6 | 4 | B | ; 13.8 | ±2.66 | ±1.08 | |
| CD .. .. .. | 7 | 8 | A | ; 22.2 | ±3.53 | ±1.30 | NS |
| CS .. .. .. | 7 | 8 | A | ; 23.7 | ±5.04 | ±1.86 | |
| CD .. .. .. | 4 | 8 | B | ; 15.3 | ±1.88 | ±0.94 | NS |
| CS .. .. | 4 | 8 | B | ; 15.2 | ±3.24 | ±1.62 | |
| CD .. .. .. | 7 | 15 | C | ; 26.7 | ±7.72 | ±2.90 | NS |
| CS .. .. .. | 7 | 15 | C | ; 26.4 | ±7.10 | ±2.66 | |

*a*95 per cent confidence level. *b*NS, not significant.

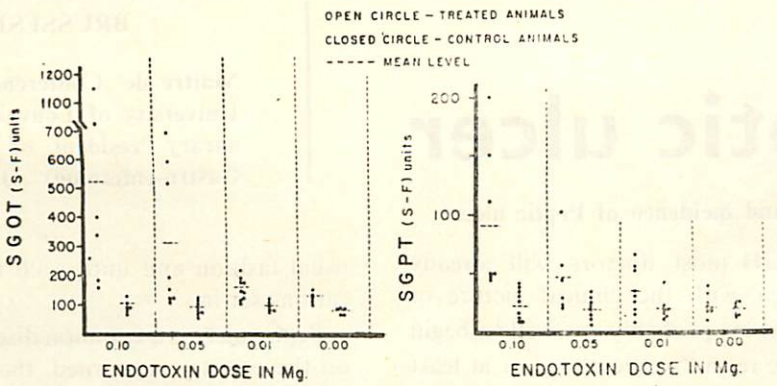



FIG. 1. Comparison of transaminase values 24 hr after endotoxin in animals treated with a choline deficient diet and with a control diet for 21 days.

TABLE 2.

**Comparative Lethality of Endotoxin in Choline Deficient and Control Animals.**

| Group | | Time on diet (weeks) | Endotoxin dose (mg) | No. dead/ total | |
|---|---|---|---|---|---|
| Deficient | Control | 2 | 0.25 | 5/10 | 0/10 |
| -do- | -do- | — | 0.50 | 10/0 | 0/10 |
| -do- | -do- | — | 1.50 | 9/10 | 0/10 |
| -do- | -do- | 4 | 0.50 | 8/10 | 0/10 |
| -do- | -do- | — | 1.50 | 10/10 | 3/10 |
| -do- | -do- | 6 | 0.50 | 4/5 | 0/5 |
| -do- | -do- | — | 1.50 | 5/5 | 2/5 |

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# The Problem of Peptic ulcer

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**Maitre de Conferences at The University of Louvain and Honorary President of the World Gastro-enterology Organisation.**

**Definition and incidence of Peptic ulcer**

ALTHOUGH most doctors will already be familiar with the clinical picture of petic ulcer, it is probably as well to begin by defining the term "peptic ulcer" or at least indicating what it is normally taken to mean.

To quote one definition, a peptic ulcer is "an ulcer of the oesophagus, stomach, or duodenum in the causation of which the gastric secretions are believed to play some part". Since, however, the term is usually applied only to ulceration of the stomach or duodenum, the present monograph will deal solely with the problem of gastric and duodenal ulcers. Although these two types of ulcer each exhibit certain distinctive features that are characteristic of their respective anatomical and clinical pictures, they have a great deal in common. In both instances, the loss of substancer extends deep into the tissue, beginning in the form of circumscribed erosion of the mucous membrane, including the muscularis mucosae, and then eating through the submucosa into the underlying layers of muscle fibres. After a while, the margins of the ulcer generally become sclerosed.

Typical of the clinical course in cases of gastric or duodenal ulcer is its periodicity. Peptic ulcers show a cyclic pattern of development marked by acute exacerbations which may last anything from several days to several months, the average generally being a few weeks; diurng the intervals between these attacks complete remissions occur, at least so long as the ulcer continues to develop in the usual fashion and until such time as complications set in.

Peptic ulcer is a common disease Depending on the country concerned, the morbidity rate may be as high as almost 10% Though occasionally found in children, peptic ulcers do not usually make their appearance until after the age of 20 years From about 60 years of age onwards they become less frequent, although death due to perforation or haemorrhage is by no means a rare occurrence among old people suffering from peptic ulcers.

Men are more often affected than women; it should be added, however, that in women the disease trends to run a milder course and may even escape notice altogether.

In our experience, which agrees with that of LEVRAT, duodenal ulcers are roughly twice as common as gastric ulcers. Multiple ulcers, either of the stomach or of the duodenum, are sometimes encountered; in a case described by SIMON, for instance, as many as seven ulcers were present Nor it is rare to find a duodenal ulcer (or an ulcer of the pyloric canal) in combination with a gastric ulcer—in which case the ulcer in or near the pyloric region will probably have been the first to develop.

As already mentioned, gastric and duodenal ulcers differ in several respects; a duodenal ulcer is associated with increased gastric secretion, for example, whereas in the presence of a stomach ulcer gastric secretion is only slightly above or below the norm. Gastric ulcers show a stronger tendency to bleed, but usually respond to treatment better than duo-

denal ulcers. Both forms of ulcer, however, are morphogically similar, and both are quite often met with in members of one and the same family. Thus, despite the differences between them, the practice of lumping gastric and duodenal ulcers together under the heading "peptic ulcer" is in point of fact justified.

The following review deals firstly with the aetiology, pathogenesis, and location of peptic ulcers, then with their clinical picture and diagnosis, and concludes with a more detailed discussion of their treatment.

**Aetiology :**

As in the case of migraine or asthma, for example, a predisposition towards the disease seems to be the most important factor contributing to the development of a peptic ulcer. Since peptic ulcers tend to run in families, we would agree with LEVRAT that hereditary influences are probably involved, although it is impossible to determine with certainty whether the trait is dominant or recessive.

Apart from the question of specific predisposition, other aetiological factors include those responsible for the onset and intensity of an exacerbation. Foremost among these is undoubtedly psychological stress—at least insofar as it serves to reinforce, as it were, the spontaneous cyclic pattern of the clinical course, to accelerate an acute attack, or to aggravate the symptoms. Moreover , since such aggravation of the symptoms adds to the patient's suffering, particular attention should be paid to this stress factor when deciding upon the treatment to be given.

Besides emotional strain, nutritional factors also exert a certain, albeit less pronounced, influence; this—as the studies in geographical pathology undertaken by PISI and BARBARA would appear to confirm—applies particularly to malnutrition. It should perhaps also be mentioned that the incidence of peptic ulcer is relatively higher in patients suffering from liver cirrhosis or from chronic respiratory failure.

Of major importance in the aetiology of peptic ulcer are the side effects exerted by various drugs. The list of medicinal substances conducive to ulceration is headed by cortisone and its derivatives, closely followed by phenylbutazone; next, to name only the more important drugs, come acetylsalicylic acid and—further down the list, but still definitely incriminated—reserpine. In patients with a history of peptic ulcer, these drugs may cause a recurrence, which generally proves to be of a painful nature; in subjects who have never previously suffered from peptic ulceration, they are also liable to provoke an ulcer, which in such cases is often located in the region of the pyloric antrum or the greater curvature of the stomach.

Since corticosteroids suppress inflammation, ulcers induced by them frequently give rise to no symptoms whatsoever; even perforations may remain largely asymptomatic and lead to the formation of intestinal fistulae which—astonishingly enough—sometimes heal spontaneously after the corticosteroid has been with-drawn.

In cases where phenylbutazone and other antirheumatic drugs, such as indometacin, cause old ulcers to flare up again or possibly even provoke fresh ulcers, they generally do so quite soon after the start of treatment and irrespective of the route by which they are administered. Following a series of phenylbutazone injections, for instance, we have ourselves seen a massive haemorrhage in a woman with a previous history of gastric ulceration.

In view of the huge scale on which acetylsalicylic acid is consumed, we believe, like LEVART, that its use entails relatively little risk of causing ulcers. Nevertheless, it does quite often give rise to bleeding either from a pre-existing ulcer or from the superficial lesions that are characteristic of erosive gastritis.

Ulcers due to treatment with reserpine and its homologues, though even less common, are also a possibility to be borne in mind. We do not propose to discuss here ulcers occurring as a sequel to burns and operations or ulcers developing in the course of diseases affecting the central nervous system; these can probably be classified as stress-induced ulcers (LEVRAT).

## Pathogenesis:

About the pathogenesis of peptic ulcer it is probably true to say that even less is known than about its aetiology, Although hydrochloric acid undoubtedly plays a role in the pathologenesis of post-operative jenunal ulcer (the only from of ulcer to which in French medical parlance the term *ulcere paptique* is assigned), it is less certain whether the same applies to the causation of gastric ulcers. On the contrary, in patients suffering from gastric ulcers, subacidity rather than hyperacidity is the usual finding, i.e. both the production and the concentration of hydrochloric acid tend to be subnormal.

Whether the wall of the stomach and duodenum succeeds in resisting the action of the gastric juices, or whether it fails and sustains damage as a result of autodigestion, is a question depending on factors that are still obscure. Current studies on the pathogenesis of peptic ulcer seem to be concentrating largely upon two lines of research: firstly, pathological changes in the mucus secreted and, secondly, vascular factors in the shape of circumscribed areas of ischaemia.

One of the most mysterious features of the disease is the periodicity characteristic of its clinical course, which it has so far proved impossible to imitate in animal experiments.

To date, research in this connection has thus yielded meagre results. As the eminent American gastro-enterologist BOCKUS remarked a few years ago, in this domain we are simply marking time and repeating ourselves from one congress to the next.

**Clinical aspects :**

Dual periodicity

Regardless of where the petic ulcer is located, a study of the case history almost invariably discloses a dual periodicity—a diurnal and an annual rhythm—which is distinctly pathognomonic. This extremely important fact has been particularly well emphasised by GUTMANN.

There is quite often a recognisable connection between the ingestion of food and the diurnal rhythm of the pain associated with peptic ulcer. In exceptional cases the pain sets in immediately after a meal; as a rule, however, either it is of delayed onset and is not felt until several hours after the ingestion of food or, alternatively, it takes the form of hunger pain occurring on an empty stomach.

The annual rhythm of peptic ulcer is marked by periodic excerbations usually lasting anything from a few days to a few weeks and occasionally perssting for several months. In most cases this periodic pattern of the pain remains typical of peptic ulcer for years, i.e. until such time as complications develop or as the ulcer penetrates in depth.

Though the pain is generally of a spasmodic nature, it may sometimes also assume a different character, such as a feeling of pressure or a burning sensation in the epigastrium. The most distinctive feature of the symptoms is their regular, rhythmic pattern; this in itself is sufficient to arouse suspicion of an ulcer and to justify further investigation of the case, including X-ray examination in particular. Incidentally, the patient often finds that he can obtain relief from the pain by ingesting food, by taking antacids, or by lying on his back. During severe exacerbations, attacks of pain may also occur at night; this, however, is not necessarily, a sign that the ulcer has penetrated in depth.

## Sites of predilection:

An ulcer in the duodenal bulb, i.e. in the first part of the duodenum immediately after the pylorus, is initially almost always confined to

the anterior or posterior wall and thus appears *en face* in the X-ray picture. It is less common to find an ulcer situated beyond the superior duodenal flexure or in the descending portion of the duodenum, roughly down to as far as Vater's ampulla. Ulcers located in this region are often overlooked; consequently, when X-raying a patient with a history of "dual periodicity", one should also search systematically for an ulcer here as well. Another reason why it is very important to pay special attention to this area is because ulcers lying beyond the duodenal bulb prove particularly refractory to treatment and also tend to bleed more readily.

The majority of stomach ulcers are to be found within a zone which has been clearly delimited by MOUTIER This zone has the shape of an inverted isosceles triangle, the tip of which coincides with the angular notch of the stomach—i.e. with the point where the vertical and horizontal portions of the gastric wall meet—and the base of which is situated in the lower part of the fundus; the triangle thus largely occupies the posterior surface of the stomach. Ulcers occurring roughly on a level with the angular notch are usually located in the vicinity of the lesser curvature. If situated further down in the stomach, they tend to be restricted to a strip of the gastric wall formed by the anterior surface of the stomach and gradually widening as it approaches the pylorus.

As regards their sites of predilection, a distinction can therefore be drawn between the following types of gastric ulcer: ulcers near the lower part of the fundus, ulcers of the posterior wall situated above the angular notch, ulcers lying within the angular notch itself, ulcers on the anterior surface of the antrum, juxtapyloric antral ulcers, and ulcers of the pyloric canal. At this point, it should perhaps be noted that "pyloric canal" is a term more appropriate to radiography than to surgery, because when carrying out an operation the surgeon identifies the junction between the stomach and the duodenum by reference to the pre-pyloric vein, which originates from the lesser curvature.

Gastric ulcers may, of course, sometimes also develop at other sites, e.g. in the central portion of the anterior or posterior surface of the stomach or, by way of exception, in the greater curvature; ulcers present in such locations are correspondingly more difficult to discover.

Reference should also be made here to a rare disease known as Zollinger-Ellison syndrome, typical of which is the presence of one or two ulcers located usually in the third or fourth parts of the duodenum (and sometimes in the duodenal blub, but never in the stomach) or at the commencement of the jejunum. These ulcerations arise in patients suffering either from islet-cell tumours of the pancreas, which are often malignant and in which the *B*cells do not participate, or from other types of tumour affecting the endocrine system. The conditions is extremely painful and copious vomiting is a frequent accompaniment. Another characteristic feature is marked gastric hyperacidity which persists day and night and is due to the fact that both the quantity and the concentration of the hydrochloric acid are abnormally high; there may also be an increase in the secretion of pepsin. Diarrhoea is present in approximately 20-50% of cases, and in some patients it may be the only symptom; this diarrhoea appears to be attributable to a substance secreted by the tumour, a substance which is also responsible for provoking the ulcerations.

Cases in which peptic ulcers have continued to recur despite repeated gastric resections may sometimes prove to be due to Zollinger-Ellison syndrome. In such instances, renewed recurrences must be expected until such time as total gastrectomy is performed, accompanied if possible by excision of the tumour, Although the latter is sually located in the pancreas,

multiple tumours involving other sites as well have also been encountered.

Now let us turn to the diagnosis of peptic ulcer, i.e. to the methods available for obtaining objective evidence of the presence of the lesion.

**Diagnosis :**

Confirmation of a diagnosis of peptic ulcer is almost invariably based on the results of X-ray examinations, which if necessary can be supplemented by gastroscopy. Analysis of the gastric juice, though possibly of some interest, merely provides additional clues, and it is thus only in exceptional cases that there is any need to resort to it in practice.

Reference will be made here, not to radiological techniques as such, but to certain of the more typical findings in X-ray pictures of patients suffering from peptic ulcer. Needless to say, a painstaking radiological investigation is indispensable in every case, and it should always be borne in mind that even negative X-ray findings do not mean that the possibility of an ulcer can be excluded with certainty.

**Radiodiagnosis of duodenal ulcer :**

In its early stages, a duodenal ulcer appears as a niche seen *en face*; later, after sclerosis of the lesion has set in, it becomes visible in profile, usually along the edge of the duodenal bulb on the same side as the lesser curvature. Double niches, indicative of "kissing ulcers", are not uncommon; in this form of ulceration, there are two craters located opposite each other in the bulb of the duodenum.

Spasms due to inflammation, coupled with sclerotic processes, subsequently lead to various types of deformation affecting the duodenal blub. These are not always easy to interpret, except in the case of a so-called "clover-leaf bulb", which is virtually unmistakable.

Once treatment for an ulcer of the duodenal bulb has been successfully completed, it is generally unnecessary to carry out another X-ray examination, unless there is reason to suspect a stenosis.

Post-bulbar ulcers—whether located immediately beyond the duodenal bulb or in the upper half of the descending portion of the duodenum—may be difficult to find. If anterior shots taken from the right at an oblique angle, with the patient either lying or standing, fail to yield a clear picture of the post-bulbar duodenum, it may be necessary to resort to an angle of approach that is otherwise seldom employed, i.e. obliquely from the left with the patient lying horizontally. A post-bulbar ulcer will then appear either *en face* or as a niche outlined in profile at the edge of a contracted zone in which the contraction is not necessarily of stenotic but often simply of spasmodic character; this picture is one described by GUTMANN as *perle enfilee*.

**Radiodiagnosis of gastric ulcer :**

Though of varying sizes and shapes, gastric ulcers usually have a niche larger than that of a duodenal ulcer. Owing to the presence of oedema and spasm in the region of the lesion, a gastric ulcer tends to appear bigger and deeper than in fact it is.

Whenever X-ray examination reveals a niche in the wall of the stomach, a careful watch should be kept on it, because carcinoma of the stomach may sometimes resemble a peptic ulcer. There are, moreover, certain radiological signs that are strongly suggestive of malignancy, one example being a so-called "meniscus niche", i.e. a saddle-shaped and often carcinomatous ulceration of the lesser curvature. X-ray pictures showing recessed niches in the gastric wall likewise point to malignancy.

On the other hand, there are also some radiological signs that are indicative of a benign process, e.g. niches in the lesser curvature which clearly protrude beyond the contour of the stomach. Frequently, however, proof that

a lesion is indeed non-malignant can be obtained only if X-ray examinations repeated at short intervals show that not only the niche but also the pathological changes in its vicinity have completely disappeared.

Malignant degeneration of a stomach ulcer—i.e. the development of a neoplasm at the site where an ulcer has either healed or formed a scar—seems on the whole to be a rare occurrence. If and when the X-ray picture does seem to suggest a neoplasm, the chances are that the lesion will prove to be either a benign Cruveilhier ulcer (a chronic ulcer characterised by particularly severe involvement of the muscle layers) or a carcinoma resembling an ulcer in appearance. It should be emphasised that, however large the lesion may be, whatever shape it may assume, and however deeply it may have penetrated (as revealed by X-ray evidence of a prominent Haudek niche), these factors have no bearing on the question of malignancy. Even the craters of callous ulcers can be induced to disappear in response to appropriate medical treatment.

Ulcers in the region of the antrum, and situated either on the anterior or posterior wall or on the lesser curvature, can often only be seen in the X-ray picture in response to compression of the abdomen. Incidentally, it should be borne in mind that, in the process of forming a scar, ulcers of the antrum may give rise to deformities which, when examined by X-ray, are of what GUTMANN describes as "pseudoneoplastic" aspect.

Ulcers located in or near the pyloric canal also appear either *en face* or on one of the curvatures. Frequently an ulcer at this site causes displacement of the pyloric canal as well as deformities at the border of the duodenal bulb on the side of the lesser curvature.

**Gastroscopy :**

Ulcers whose location—e.g. on the posterior wall of the stomach—is such that they might be missed by X-ray can be visualised by gastropscoy. Recourse to gastroscopy is therefore particularly indicated in cases where the clinical picture is suggestive of ulceration, but where X-ray examination has failed to reveal an ulcer either in the stomach or in the duodenum. It should be stressed, however, that on the basis of gastroscopy alone one cannot determine with certainty whether a lesion of the stomach is benign or malignant; gastroscopy usually does no more than convey a rough impression—an impression which has to be supplemented by a biopsy before any final verdict can be reached.

By using a so-called fibroscope, i.e. a flexible gastroscope of the type recently developed in Japan, it is now possible to explore the whole of the stomach and to inspect and photograph even the fundus and the pyloric antrum, which were previously regarded as "blind" zones because they could not be visualised by conventional gastroscopy.

**Examination of gastric juice :**

Although undoubtedly of theoretical interest, analysis of the quantity and concentration of the hydrochloric acid secreted is not essential in practice. Duodenal ulcers, as already mentioned, are generally associated with hypersecretion, with an increase in the acid concentration, and with a correspondingly low PH; in other words, the overall production of gastric acid is appreciably higher than in a normal subject. It must be pointed out, however, that hypersecretion does not always go hand in hand with ulceration; it may, for example, also occur in certain forms of gastritis and it may even be encountered without any accompanying inflammation in young persons whose gastric mucosa features an unusual abundance of border cells.

In the presence of a gastric ulcer—in contrast to a doubdenal ulcer—the output of hydrochloric acid is as a rule subnormal.

Where a Zollinger-Ellison syndrome is suspected, analysis of the gastric juice is mandatory. In this disease, hypersecretion persists day and night, the 12-hour production of gas-

tric juice rising to levels which may be even higher than 2 litres and the acidity attaining values of 100—200 mEq./litre. Healthy subjects, by contrast, respond to the stimulus of a histamine injection by secreting during the following 2 hours approximately 150-250 ml. of gastric juice, the acidity of which is in the region of 15 mEq./litre.

This short account of the diagnosis of peptic ulcer will have sufficed to show that, once the suspicion of a peptic ulcer has been aroused by the patient's case history and symptoms, the final diagnosis will depend first and foremost upon the X-ray findings, supplemented if necessary by gastroscopy.

**Complications :**

The following review of the main complications liable to occur with peptic ulcer—i.e. stenosis, perforation, and haemorrhage—should perhaps be prefaced by a brief reference to the question of penetration.

It is this property of penetration that accounts for the progressive character of certain types of gastric or duodenal ulcer. In cases where the inflammatory reactions accompanying an ulceration have caused adherence of the serosa to the wall of a neighbouring segment of intestine, the ulcer subsequently eats its way through the serosa and penetrates into the adhering portion of gut. This penetration in depth, involving invasion of the fibromuscular tissue, serosa, and adjacent organs, gives rise to the following clinical manifestations: firstly, the individual exacerbations tend to run into one another, with the result, that it becomes largely impossible to distinguish any annual periodicity; secondly, instead of experiencing the diurnal fluctuations in pain that are typical of peptic ulcer, the patient complains of continuous and often violent pain.

**Stenosis :**

The form a stenosis assumes may vary greatly depending on whether it has resulted from a gastric or from a duodenal ulcer (cf. Fig. 2).

Where the cause is a gastric ulcer, the stenosis develops gradually owing to retraction of the lesser curvature; the stomach takes on a more compact appearance, its shape first resembling that of a clog and later—when the pylorus has moved up towards the angular notch—that of a snail. One special type of stenosis resulting from gastric ulceration takes the form of what has been termed "fibromuscular atresia of the antrum," its highly distinctive aspect being reminiscent of a fingerstall. Stenosis affecting the middle portion of the stomach, which occurs more frequently in women but now seems to have become re-relatively uncommon, is caused by an ulcer seated high up in the stomach; typical of this form of stenosis is an identation which runs from the greater towards the lesser curvature and leaves only an eccentric isthmus as a link between the upper and lower parts of the stomach.

Stenosis due to a duodenal ulcer presents quite a different picture. Here, the pylorus remains in position and the stomach steadily increases in volume; the antrum becomes so displaced that it extends further to the right than the pylorus, and is at the same time also depressed downwards. When the condition has reached a very advanced stage, the stomach has the shape of a bowl; but cases of this kind are becoming increasingly rare, thanks to the fact that patients nowadays tend to receive earlier and better treatment.

It is important to realise that, in this form of pyloric stenosis resulting from duodenal ulceration, an inflarmmatory factor which is conducive to spasm of the affected organ plays a role—and often a very important one—in addition to the damage due to scarring as such. This explains why less severe, circumscribed stenoses of the type in question may well regress in response to medical treatment. In contrast to widely held views on this subject, we personally have seldom encountered stenoses due to an ulcer in the pyloric canal.

## Performation:

Statistical evidence indicates that perforation into the peritoneal cavity occurs in 4-5% of cases of peptic ulcer, the site of the perforation being usually located on the anterior wall.

Although there are certain typical signs and symptoms, e.g. shock and board-like rigidity of the ebdominal wall, which point to an acute perforation, the diagnosis has to be confirmed by X-raying the patient in the upright position, without of course employing a contrast medium. Radiographic evidence of pneumoperitoneum due to perforation takes the form of a prescent-shaped pocket of air between the diaphragm and liver, or occasionally in the left subphrenic space, Particular importance attaches to this sign in cases where a cortisone-induced ulcer has perforated, since such ulcers may develop and perforate more or less silently; the same applies to aged patients, in whom a perforated ulcer—like a ruptured appendix —stepetimes give s rise to very few symptoms at all.

Occasionally a a peptic ulcer perforates into an, "encapsulated" space within the peritoneal cavity, in which case the perforation may perhaps heal spontaneously or, alternatively, result in formation of a subphrenic absecess. Another possibility is that closure of the perforation may be effected by adherence of the ulcer to an adjocent organ, i.e. to the liver, the lesser omentum, or the pancreas.

**Haemorrhage :**

Haemorrhage is a common complication of peptic ulcer. Despite this, we agree with LAM LING that, although 15-30% of all peptic ulcers probably bleed at some time during their development, the incidence of massive haemorrhage does not exceed 3—5%. Bleeding often sets in at an early stage in the course of the disease and may indeed sometimes be the very first of the signs and symptoms; it is able to occur not only during an acute exacerbation, but also in a period when the patient is completely free of pain. Particularly dangerous is the occurrence of massive bleeding in elderly patients suffering from peptic ulcers.

Haemorrhage as a complication of peptic ulcer seems to be attributable to either of two causes, between which a clear distinction can be drawn also as regards treatment. On the one hand, the bleeding may be due to vascular arrosion, in which case haemorrhage from a ruptured arteriole or from an crosion will be found if an operation is performed. Alternatively, the bleeding may take the form either of erthrocyte diapedesis from the ulcer margin or of extensive capillary haemorrhage indicactive of concomitant haemorrhagic gastritis.

**TREATMENT FOR UNCOMPLICATED PEPTIC ULCER**

**Acute exacerbations :**

In most cases of peptic ulcer, we treat acute attacks on an ambulant basis. This does not mean that we underrate either the major role played by cerebrocortical and psychic factors in patients suffering from peptic ulcer or the beneficial influence which bed-rest can exert on the bouts of pain. In our experience, however, acute exacerbations can in most cases quickly be curtailed by inducing the patient to adopt a more careful mode of living and, if necessary, to take things easier at work.

As regards the choice of medicinal therapy, we give preference to bismuth preparations and—in patients aged 15 years or older—we recommend to grammes of bismuth subnitrate to be taken twice daily, i.e. after rising in the morning and before retiring to bed a night. This dose in well tolerated and hardly ever causes constipation. In patients whose bowels are functioning normally, good results can also be obtained with bismuth aluminate or bismuth aluminium carbonate, both of which are easy to handle.

We make it a practice to advise the patient to take a few tablets of a silicate or aluminate preparation as soon as he begins to feel delayed pain after a meal; similar drugs in gel form are effective as well. Although calcium carbonate and magnesium oxide often afford better relief, we think they should be prescribed only temporarily, so as not to run the risk of alkalinuria. The use of sodium bicarbonate should at all events be avoided, since it not only has the disadvantage of provoking reactive hypersecretion of hydrochloric acid, but in rare cases may also cause renal damage, e.g. in the form of nephritis accompanied by alkalosis, as en countered in Burnet's syndrome (milk-alkalisyndrome).

Preparations containing, or derived from, liquorice—which enjoy great popularity in the Anglo-Saxon countries—can likewise be relied upon to provide good symptomatic relief. But we continue to view their use with reserve, the reason being that, owing to the glycyrrhizic acid which they contain, they are liable to induce disorders of the water and electrolyte balance when taken in large doses.

Another routine measure which we adopt is to prescribe an anticholinergic agent, i.e. either 0.5 mg. atropine sulphate after the morning and evening meals or a synthetic anticholinergic drug such as Antrenyl* Duplex, which has less marked side effects and a duration of action of up to 12 hours. Though experimental studies appear to show that anticholinergics exert only a short-lasting effect on the muscular tissues of the stomach, clinical observations indicate that in practice their action is more prolonged. Their chief contra-indications are glaucoma and prostatic hypertrophy; in patients in whom anticholinergics are contra-indicated, a tranquilliser may usefully be prescribed instead. It has been our experience that anticholinergics, injected subcutaneously, prove particularly effective in cases where a duodenal ulcer is associated with evidence of stenosis due to inflammatory processes.

In somewhat more severe attacks of peptic ulcer we administer intramuscular injections of casein peptone, which has an anti-inflammatory effect. Alternatively—especially in patients suffering from large gastric ulcers—we resort to Oxyferriscorbone* sodique, which is also said to promote scar formation; be that as it may, it certainly seems to bring about a rapid imProvement in the patient's general condition.

Like GUTMANN, we tend to relax dietary restrictions fairly soon, placing particular emphasis on the importance of a wholesome and varied diet. If possible, the patient should take four or five meals within each 24-hour period; alcohol, cooked fats, and spices should be avoided and, in accordance with theoretical concepts, the salt intake should be reduced in cases of duodenal ulcer. At the beginning, fish and white meat are better tolerated than other types of meat. If necessary, a diet of milk and/or gruel may be imposed, but should not be continued for more than a few days. We have seen cases in which an excess of milk in the diet appears to have actually prolonged acute exacerbations and encouraged gastritis during the intervals between attacks.

Of cardinal importance is a healthy mode of living—a requirement, however, which patients often find most difficult to fulfil. For this reason, if a painful attack does not subside within 3—4 days, we advise the patient to spend a few days either in bed or relaxing at home on a couch, after which he is allowed to resume his normal occupation.

Where an exacerbation proves particularly unresponsive to treatment, we arrange for the patient's admission to hospital. Hospitalisation is often sufficient in itself to elicit a marked clinical improvement within only three days or so. If necessary, as an additional measure we administer 1/2-1 litre of a 1:1,000 procaine solution daily by intravenous infusion. The strict diet initially imposed can soon be relaxed.

**Maintenance therapy :**

Once an acute exacerbation has subsided, is it sufficient—as certain authors claim—to provide the patient with advice on his diet and especially with psychological guidance designed to ensure that he learns in future to avoid situations of stress?

The value of maintenance therapy given between acute attacks is very difficult to assess; this applies particularly to duodenal ulcers, gastric ulcers being somewhat more amendable to such treatment.

A study undertaken by my colleague BARBIER, who analysed 250 cases of peptic ulcer selected at random from amongst the patients treated in my private practice, seems to indicate that maintenance therapy does not help much to prolong the interval between one acute episode and the next, but that it does make life considerably more comfortable for the patient between attacks.

What form does this maintenance treatment take? Having remainded the patient once again how important it is that he should adhere to a well-ordered pattern of life and a sensibes diet, we prescribe daily doses of bismuth subnitrate over a period of two or three years; as a rule a dosage of 10 g., taken once a day upon rising in the morning, is enough. The only parenteral therapy to which we have resorted at all frequently consists of minute histamine doses administered in a series of subcutaneous injections once or twice a year during the intervals between attacks; these injections of histamine—in the form of Theramine*—are given every other day for 40 days. It is my impression that this medication serves to improve the patient's general condition and often makes it easier for him to cope with foodstuffs which he might otherwise have difficulty in tolerating. The injections are tantamount to inflicting on the patient a series of "microshocks", in the therapeutic action of which a diencephalic mechanism is probably involved.

Finally, we think it advisable to instruct our peptic ulcer patients to report for a check-up now and again (every six months, for example), over a period of several years. Many patients prove co-operative in this respect and are quite willing to undergo these periodic examinations. Such surveillance may perhaps help to prevent complications; to prove this, however, would require vast quantities of comparative statistical data, which unfortunately are not available to us.

## Treatment for complications

**Perforation :**

Acute perforation of a peptic ulcer calls for immediate transfer of the patient to hospital. Surgical treatment was at one time invariably resorted to in such cases, i.e. the abdominal cavity was opened, the lesion sutured, and appropriate measures taken to ensure postoperative drainage. Nowadays surgeons are less unanimous in their opinions as to the best procedure, although the average approach can probably be summed up as follows:

If little time has elapsed since the perforation occurred, and if all the requisite equipment is to hand, continuous aspiration of the gastric juice using TAYLOR's method may be practised—unless, of course, the perforation took place shortly after a meal, in which case there would be reason to fear a massive escape of chyme into the abdominal cavity. If continuous aspiration fails to produce the desired response within a few days, it will still be possible to operate.

In all other circumstances, some surgeons make it a rule to carry out gastric resection, some prefer simply to suture the perforation, whereas other resect or suture depending on the nature of the case. Since we have seen quite a number of recurrences of perforation in patients treated by suturing alone, it is our personal opinion that, where the decision has been taken merely to suture the lesion, gastric resection should nevertheless be performed at

a later date without awaiting a renewed perforation. Exceptions to this recommendation can perhaps be made in the case of perforation of an acute ulcer in a young patient, because here there seems to be less danger of a recurrence.

**Haemorrhage :**

The general consensus of opinion as regards the need for surgery in cases of massive haemorrhage appears to be as follows: if, despite adequate transfusions, the bleeding has still not ceased after 24 to 48 hours, an operation should be undertaken without further delay; the risk which such an operation entails is one that simply has to be accepted. In cases of this kind, severe arrosion of an arteriole in the crater of the ulcer is a common finding.

One difficulty met with in this connection is recognising haemorrhage due to ulceration in a patient with no previous history of peptic ulcer. Here, however, a cautiously conducted X-ray examination often enables one to discover the site of the bleeding, e.g an oesophageal varix or an ulcer crater. Some authors resort to gastroscopy. which is carried out preferably under anaesthesia in the operating theatre, so that if necessary it can be followed immediately afterwards by a surgical intervention. In a certain number of cases, gastric haemorrhage is due not to the presence of an ulcer but to erosive gastritis or, occasionally, to a very small haemorrhagic lesion of the mucosa referred to as exulceratio simplex.

Assuming that the bleeding has been successfully arrested by conservative measures, the question then arises as to whether an operation ought still to be performed. If the haemorrhage is the first and only one that the patient has ever had, or if it is obviously due to a drug-induced ulcer, we think it may well be possible to postpone surgery. On the other hand, all cases of peptic ulcer associated with recurrent haemorrhage should in our opinion be dealt with by the surgeon. Surgical treatment is particularly indicated in elderly patients, in whom increased vascular goes hand in hand with impaired blood regeneration.

**Stenosis :**

Stenosis of inflammatory origin due to the presence of a duodenal ulcer often subsides in response to medicinal therapy instituted at the start of an acute episode, provided the treatment—including especially anticholinergic medication—is continued for a sufficiently long time.

Stenosis in the form of an organic obstruction, whether caused by a gastric ulcer or by an ulcer in the duodenal or pyloric region, calls for surgical treatment. Instead of gastro-enterostomy, which at one time was generally carried out in such cases, the usual practice nowadays is to resort to gastric resection; the majority of surgeons, in fact, rightly regard gastric resection as the method of choice.

Where "fibromuscular atresia of the antrum" (i.e. fibrous atresia together with hypertrophy of the muscular elements) has developed as a sequel to gastric ulceration, this special form of stenosis will also require surgery if it is severe enough to interfere seriously with evacuation of the stomach. Surgery is, of co course, likewise indicated whenever a neoplasm in the region of the antrum is suspected.

**Refractory peptic ulcer**

In the case of a gastric ulcer which proves refractory to treatment, even the slightest suspicion of cancer is sufficient to justify gastric resection. One should, indeed, refrain from operating only if medicinal therapy has proved successful and if one is convinced in the light of the X-ray findings that the lesion is non-malignant.

Where the refractory ulcer is located in the duodenum, it is not always easy to decide whether or not an operation is indicated. There is at all events an indication for surgery if the ulcer gives rise to continuous piercing pain, which often radiates dorsally and may also persist at night.

We likewise consider an operation advisable in middle-aged men if failure of the ulcer to re-

spond to treatment, or if the occurrence of acute attacks in rapid succession, proves an occupational handicap. For women we are much more reluctant to countenance surgery, because it has been our experience that the post-operative course is usually fraught with far greater difficulties in women than in men.

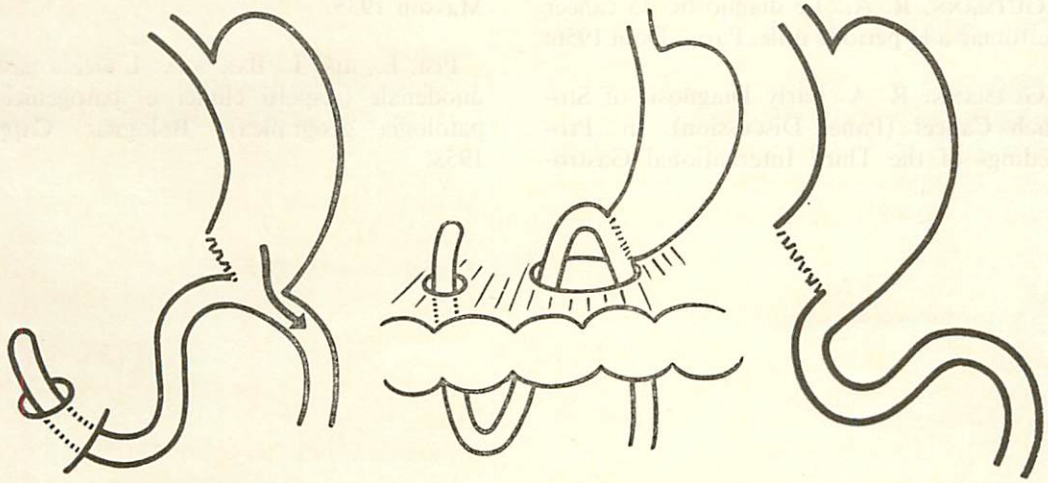
There are also certain circumstances in which, unless grave complications are present, surgery is contra-indicated; among these contra-indications are, for example, severe neuroses and superimposed functional disorders, including in particular allergic migraine and other related allergic manifestations. In such cases we have observed disappointing results not only after gastrectomy but also after vagotomy—which is hardly surprising in view of the evident causal connection with autonomic nervous dysfunction.

Finally, it should be added that—particularly in cases of duodenal ulcer—the need for surgery because conservative treatment has failed does not arise very often. Of the 250 patients covered by the statistical analysis mentioned earlier, only 6 have so far had to undergo an operation for this reason. Though the latter figure will probably increase in the further course of time, we doubt whether it will ever rise as high as those quoted by other authors.

## CHOICE OF SURGICAL METHOD

The decision as to the most suitable surgical procedure is, of course, primarily the surgeon's responsibility. A statistical analysis of the cases selected by us for surgical treatment—in which gastrectomy was performed in accordance with the POLYA method or, in patients with gastric ulcer, occasionally also according to the technique described by PEAN (Fig.3)—shows that satisfactory results were obtained in 80-85% of cases.

As for vagotomy, which is combined sometimes with resection of the antrum and always with either pyloroplasty or gastro-enterostomy, the value of this procedure remains debatable. The technique is question is still in the experimental stage, and we feel that not enough experience has yet been acquired with it to permit of any final judgment.




Gastric resection with gastrojejunostomy (Billroth II):
as modified by Hofmeister-Finsterer (a) and as modified by REICHEL-POLYA (b)
Gastric resection with gastroduodenostomy (Billroth I) : as modified by PEAN (c)

**Conclusion :**

In the treatment of peptic ulcer, a common but curious disease about whose pathogenesis so little is yet known, both the medical and the surgical approaches adopted are still based by and large on purely empirical methods. Although it is to be hoped that further progress will be made in this field thanks to the acquisition of fresh knowledge, the therapeutic possibilities currently open to us already suffice to provide numerous patients with effective relief.

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# The uses of dextran in surgery: A current evaluation

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Dextrans were introduced into clinical medicine about 20 years ago to meet the war demand for a safe and easily procurable plasma substitute. The experience with dextrans during the Korean conflicts established their usefulness for limited emergency blood volume replacement.[3] In recent years, primarily through the basic investigation of Swedish scientists, additional indications for the use of dextran for improvement of circulation have been suggested. Concise and compehensive reviews on these issues have appeared elsewhere.[5, 6, 11, 22] This communication is an attempt to clarify certain concepts about dextrans and relate some of the current thoughts for the indication of dextran in the over-all care of sick patients.

## CHEMISTRY

Dextrans are a mixture of glucose polymers of various sizes and molecular weights. The crude native dextrans are produced by the bacteria *Leuconostoc mesenteroides* and contain a variable number of glucose units and different molecular arrangements. The molecular weight of the polymer mixture may vary from a few thousands to several millions. These differences in the molecular size and structure are responsible for the differences in the properties of dextran, for their ability to diffuse or not diffuse through semipermeable membranes, and for their influence upon the blood particles and blood viscosity.[29]

There are 2 preparations of dextran suitable for clinical use.

1. Dextran 70 (Macrodex), the older preparation, has been commercially available for several years. The average molecular weight of this dextran preparation is 70,000, with 90 percent of the molecules falling between 25,000 and 125,000. This familiar preparation is usually made as a 6 percent solution in normal saline.

2. Dextran 40 (Rheomacrodex), which has been recently introduced for clinical application, has an average molecular weight of 40,000, with 90 percent of the molecules falling between 10,000 and 80,000. The usual preparation is 10 percent either in normal saline or in 5 percent dextrose in water.

It must be apparent that these 2 preparations of dextran 70 and dextran 40 are not distinct. The lower molecular spectrum of one overlaps the upper molecular spectrum of the other. Therefore, distinctly different properties from these 2 preparations are not to be expected. Any differences that may exist will be a matter of degree rather than of exclusive quality.

## PHARMACOLOGIC AND CLINICAL EFFECTS

There are 4 principal qualities of dextrans which form the basis for their clinical application: (1) blood volume expansion, (2) improvement of microcirculation, (3) antithrombogenic effect, and (4) antilipemic effect.

**Blood volume expansion.** Both dextran preparations when infused expand plasma volume. This volume expansion is mainly due to their colloidal (oncotic) osmotic effect. The duration and degree of volume

expansion following infusion of dextrans depend upon the total amount infused, the rate of infusion, the size and weight of the dextran infused, and upon the rate of disappearance of the dextrans from the plasma. The smaller molecules of dextran pass rapidly through the capillary membranes into the extravascular space and are carried back to the bloodstream via the lymphatic vessels. Some are filtered out into the urine and result in mild diuresis. The larger molecules stay as long as 20 hours or more. Thus, with repeated infusion, there is a tendency for accumulation of larger molecules. A minute quantity of the infused dextran is excreted into the gastrointestinal tract.

The very large molecules which cannot be excreted are taken up by the reticuloendothelial system and eventually are metabolized. There is no evidence that any detectable permanent residue is left behind (unlike PVP and gum arabic). It should be obvious that because of slow excretion, dextran 70 achieves a more effective and prolonged volume expansion effect, and hence, it is a preparation of choice for this purpose. On the other hand, dextran 40, with smaller average molecular size and relatively rapid disappearance from the plasma, has only a limited and transient volume expansion effect.

**Improvement of microcirculation.** Ample evidence indicates that impaired microcirculation and tissue perfusion are the basis for all forms of shock and circulatory disorders.[23, 26, 34, 48] In the assessment of effective microcirculation, the well-known hemodynamic and recently recognized hematorheological factors both must be considered.

It is now established that blood behaves as a non-Newtonian fluid. Its viscosity, or resistance to flow, is affected by the velocity gradient measured as the rate of shear in units of inverse seconds.[20, 48] The lower the shear rate, as may be present in sluggish circulation, the greater will be the viscosity. The viscosity of whole blood is the net sum of the intrinsic viscosities of the blood particles and the plasma components and the interaction of the two. While the concentration of the blood particles, principally the erythrocytes, is the major determinant of the blood viscosity, the effects of other factors upon the viscosity are also significant. Some factors which increase blood viscosity are: (1) increased concentration of the blood cells and platelets (hemoconcentration, polycythemia, leukemia, and thrombocytosis); (2) increased aggregation of the blood cells (erythrocytes and platelets); (3) decreased internal fluidity of the R.B.C. (affected by genetic factors, osmotic equilibria, and the nature of the red cell membrane); (4) the presence of macromolecules, increased level of fibrinogen, abnormal proteins, and lipids; (5) small and narrowed vessels; (6) vasoconstriction (autogenous or induced); (7) low shear rate (decreased velocity gradient and slow flow rate); (8) low pressure gradient; (9) axial concentration of the blood cells (plasma skimming effect); (10) decreased elasticity of the vessel wall; (11) rough endothelial surface of the vessels; (12) hypothermia; (13) low oxygen tension (as in sickle cell disease); and (14) acidosis.

The interest in erythrocyte aggregation pointed out earlier by Knisely and associates[31] has been recently rekindled. Substantial data are now at hand showing that aggregation does occur with impaired microcirculation and in certain disease states.[22, 24, 45] It can be readily demonstrated that fibrinogen and other macromolecules, such as very high molecular weight dextran, will increase erythrocyte aggregation and blood viscosity, and these can be reversed with low molecular weight fractions of dextran. It must be pointed out that the erythrocyte aggregation may be present under "normal" conditions and cause no overt clinical manifestation. Nevertheless, it is potentially hazardous, and under deficient hemodynamic states the detrimental effect of erythrocyte aggregation upon microcirculation cannot be ignored.

Presence of erythrocyte aggregation not only depends upon viscosity of plasma and attractive forces between the cells, but also upon the shear rate. Schmid-Schoenbein and

associates[45] have recently demonstrated that aggregated erythrocytes from normal individuals deaggregate (disperse) at much lower shear rate than those of sick patients. This phenomenon bears clinical significance in a variety of circulatory disorders in which the normally low blood velocity gradient, and hence, low shear rate, may be critically diminished in the postcapillary vascular bed. Thus, in a vicious circle, erythrocyte aggregation is readily promoted with further curtailment of blood flow. It has been estimated that increased resistance to flow in the postcapillary vascular bed offered by exaggerated erythrocyte aggregation and increased viscosity may be greater than that offered by the arteriolar vasoconstriction.

The phenomenon of plasma skimming effect has been adequately demonstrated. This leads to differential rise in the hematocrit in the microvessel. As the blood flows in the arterioles, the fast-moving cells assume an axial position, while plasma stays in the periphery and is skimmed off into side branches. The relatively high hematocrit of microvessels thus will result in high blood viscosity and impaired perfusion in these regions.[22]

The ability of the red cells to change form in order to slide by each other and to flow

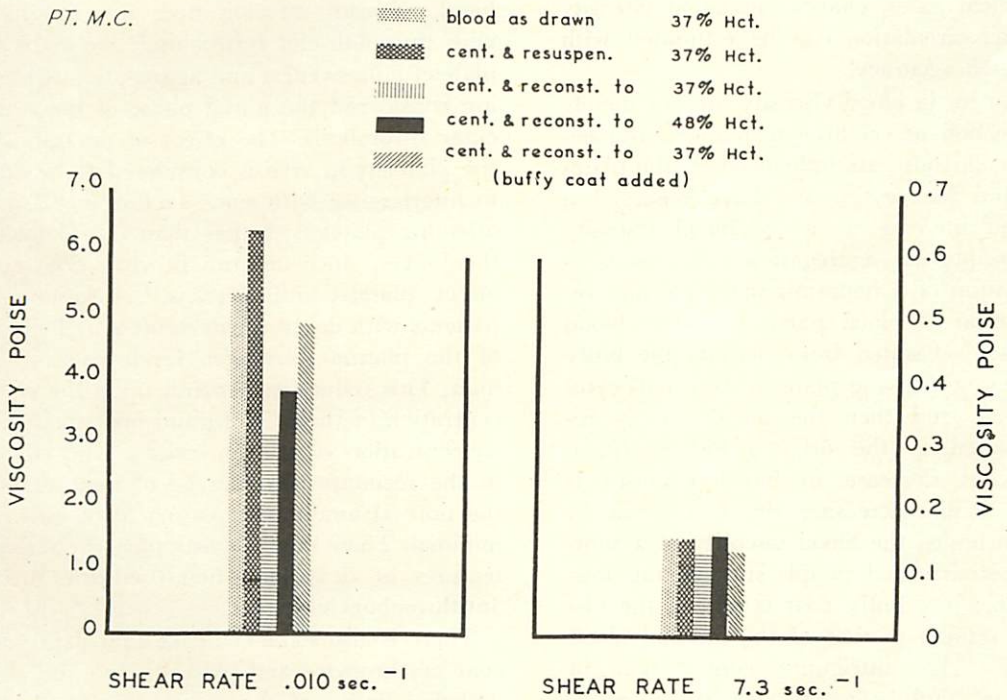



Fig. 1. Effect of platelets upon whole blood viscosity at low shear rate. Note that following centrifugation and resuspension of the cells, the whole blood viscosity is increased (second bar from left) although nothing has been added or subtracted from the original sample. When blood cells and plasma are separated and then remixed to the original hematocrit of 37 percent, but without the buffy coat, the viscosity is lower in the sample (third bar) than in the original sample. Even when the hematocrit is increased to 48 percent in a fourth sample (black bar), the whole blood viscosity remains low. With the addition of the buffy coat containing leukocytes and platelets, the viscosity returns toward that of the original sample. Note that these differences tend to disappear and much lower values are obtained when viscosity is measured at higher shear rate of 7.3 inverse seconds instead of 0.01 inverse seconds (see text).

through narrow capillaries and branching microvessels is important in normal blood flow. This property of the erythrocytes is also shear-dependent. It should be obvious that in the presence of low cardiac output and vasoconstriction flow of the aggregated and crowded rigid blood cells is markedly impeded, resulting in critical microcirculatory insufficiency. These matters are no longer theoretical in nature, but have been demonstrated with high-speed cinemicrophotography in animals and in man.[15]

Blood viscosity measurement in vitro at shear rates far above what is actually present in terminal arterioles, capillaries, and postcapillary venules does not tell the entire story. With improved instrumentation, which allows viscosity measurements at very low shear rates, changes in blood viscosity in microcirculation can be estimated with increased accuracy.

Changes in blood viscosity are not merely a reflection of erythrocyte number and behavior, but also are influenced by the platelets and leukocytes. We have observed a marked increase in whole blood viscosity due to platelet aggregation following centrifugation of a heparinized sample and resuspension of blood particles. When blood cells are separated from plasma, the buffy coat containing the platelets and leukocytes removed, and then the blood sample reconstituted to the original hematocrit, a significant decrease in blood viscosity is noted. With increasing the hematocrit to certain limits, the blood viscosity of a similarly reconstituted sample still remains low, but when the buffy coat is added, the viscosity returns to that of the original blood sample. This intriguing contribution of platelets (and leukocytes) to the viscosity of whole blood becomes apparent only at very low shear rates, such as are operative during impaired circulation. At higher shear rates the viscosity of all samples is found to be markedly decreased (Fig. 1).

Dextran 40 and, to a much lesser extent, dextran 70 lower the viscosity of whole blood (a) by hemodilution, (b) by decreasing aggregation and rigidity of the erythrocytes, and (c) by decreasing platelet adhesiveness and aggregation.[22, 35, 49] Dextran 40 does not improve upon the normal blood, which is a nearly perfect rheologic system, but will improve the flow properties of abnormal blood under unfavorable hemodynamic states.

**Antithrombogenic effect.** Dextrans have been proved to be effective against experimental thrombosis and beneficial in the management of thromboembolic disease. According to Berman,[12] dextran acts differently from classic anticoagulants. Heparin and Coumadin interfere with thrombin clot formation which requires stasis. These agents in clinical dosages apparently have no effect upon platelet adhesiveness and platelet aggregation, which may occur even in the presence of flowing blood. On the other hand, dextran infusion does not interfere with thrombin clot formation,[12] but reduces platelet adhesiveness and aggregation, which are considered the initial phase of intravascular thrombosis. The effect of dextran on the platelets in vivo is considered to be due to interference with some factors in plasma affecting platelets, rather than the platelets themselves, since dextran in vitro does not affect platelet adhesiveness.[16] Infusion of patients with dextran will result in reduction of the plasma fibrinogen level when it is high. This reduction depends upon the concentration of the dextran and also upon the concentration of the fibrinogen. The effect of the recommended dosage of dextran on the normal amount of plasma fibrinogen is minimal. These characteristics are the safety features of dextrans when used for their antithrombogenic effect.

There is also some evidence that dextrans coat erythrocytes and platelets and the endothelial lining of the vessels, giving them similar electric charges and causing them to repel each other.[14]

In addition to these specific effects on platelets and fibrinogen, dextrans inhibit intravascular thrombosis by the dilution of clotting factors and improvement of blood flow in general.

The superiority of the antithrombogenic effect of one dextran preparation over the

other cannot be assessed at the present time. Dextran 70 may have a slightly better antithrombogenic effect, while dextran 40 shows superior flow-improving qualities. In management of thromboembolism both of these qualities are important, since rheological impairment may promote stasis and an increased tendency toward thrombosis.

**Antilipemic effect.** This effect of dextrans has been recognized only recently. In 1963 Flotte and Buxton[21] reported that dextrans reduce the serum cholesterol and lipid content of hypercholesterolemic and hyperlipemic patients. These observations have significant clinical implications. Whether chronic administration of dextran affects atherosclerotic processes needs further investigation.

**Toxicity of dextrans.** There are three untoward effects of dextrans which should be of concern to the clinician: (1) increased bleeding tendency, (2) overloading, and (3) anaphylactoid reaction.

The earlier alarming reports regarding excessive bleeding following administration of dextrans were primarily due to crude preparations, the use of high molecular weight fractions of dextrans, and infusion at a rapid rate and in excessive quantities.[44] With availability of the present preparations, dextran 70 and dextran 40, at the recommended dosage, not exceeding 15 c.c. of dextran per kilogram of body weight in 24 hours, excessive bleeding should be a relatively rare problem. For the reasons given under antithrombogenic effects, administration of dextrans in the presence of pre-existing thrombocytopenia, deficient clotting factors, and consumptive coagulopathy is hazardous. Dextran potentiates the effect of heparin. Quantitative data in this regard are not available. These 2 drugs should be used together infrequently and not for a prolonged period. When the clinical condition demands the effect of both simultaneously, then the dosage of heparin should be reduced empirically to perhaps less than one half of the recommended dosage.

A common fallacy is to give dextran following multiple transfusions and exhaustion of the available blood for a bleeding patient. Under these circumstances, most patients have already depleted clotting factors and platelets, and infusion of dextran at this stage will compound the problem. If one wishes to give dextran for oligemic shock, then it is preferable to start the infusion early, before or along with blood and other necessary fluids. Dextran given in this manner might actually decrease the consumptive coagulopathy and subsequent bleeding tendency which is often seen with shock and multiple transfusions.

The overloading syndrome following administration of dextran is also avoidable. Infusion of dextrans at the recommended dosage of 10 to 15 c.c. per kilogram of weight in 24 hours, given over 1 to 2 hours in the presence of established hypovolemia and over 4 to 8 hours in normovolemic patients, rarely causes any difficulty. Monitoring central venous pressure further guards against this complication.

Minor hypersensitivity reactions, such as rash and urticaria, are of no grave clinical consequence. However, occasional anaphylactoid reactions, manifested in he form of sudden collapse, hypotension, arrhythmia, respiratory difficulty, and choking sensation, are alarming.[41] The frequency of these reactions is related to the higher molecular weight and the degree of branching of the dextran molecules.[25] The nature of the severe anaphylactoid reaction is still unknown. It is questionable whether these represent true antigen-antibody interaction, since the reported cases have not been previously exposed to known dextran administration, and some patients have subsequently received dextran without ill effect. It is possible that some patients may have been sensitized unknowingly by ingestion of dextran with food or through the manufacture of dextrans in the body by the bacteria. Moreover, it has been shown that certain of the pneumococcal polysaccharides may elicit cross-sensitivity with dextran; thus, patients who have had pneumococcal infection may be susceptible to this form of reaction.[8] Another pos-

sible cause of this anaphylactoid reaction may be due to undetected minute quantities of bacterial proteins which have escaped purification and have entered a patient's bloodstream. As far as is known, all of this type of reaction has occurred in patients who have received only a few cubic centimeters of dextran for the first time. Therefore, it is recommended that the dextran infusion be started by a physician and that the first few cubic centimeters of the preparation be given very slowly. The patient should be very carefully observed for ill effects for 10 minutes before the physician leaves his bedside.

Another alleged toxicity which perhaps is unjustifiably attached to dextran is nephrotoxicity. In the past few years, sporadic cases of acute renal failure have been reported in patients who had received dextran.[38] Careful examination of these cases, however, does not exclude the following possibilities: (1) a pre-existing kidney disease or already established renal failure, (2) a clinical setting in which acute renal failure would have developed even without dextran, and (3) the presence of circulatory disorders, renal ischemia, and other nephrotoxin. A diagnosis of acute renal failure merely on the basis of histologic evidence of vacuoles within the renal tubules may be questioned. The vacuoles described are often seen following infusion of sucrose, mannitol, and dextran without any proved clinical ill effect. These substances are diffusible into the renal tubular epithelium and may remain there in the absence of adequate urine output.

The experimental models designed to indicate nephrotoxicity of dextrans are also far from convincing. Oliguria and anuria

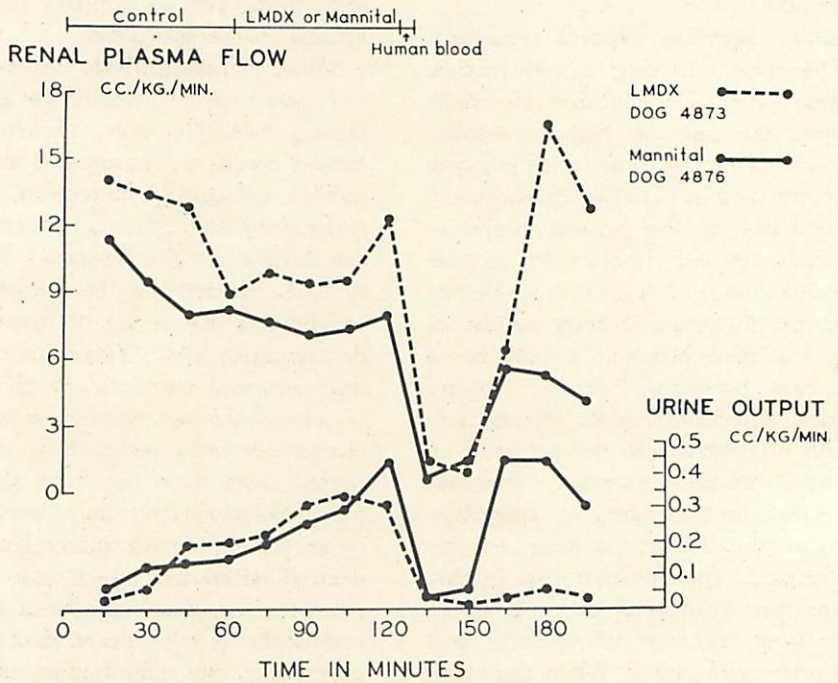



Fig. 2. Renal plasma flow (determined from radioactive iodohippurate clearance) and urine output in dogs subjected to intra-aortic transfusion of incompatible blood and shock. Note that following shock the renal plasma flow in the dog pretreated with dextran 40 *(LMDX)* returns to its control value without diuresis. The renal plasma flow in the dog pretreated with mannitol is less than 50 percent of its control value following shock. The urine volume is copious, but clearance of radioactive iodohippurate, hence, useful function of the kidney due to poor perfusion of tubules, is impaired.

do not necessarily indicate acute renal failure. Failure to produce urine may be on the basis of severe dehydration, interruption of blood supply, and reflex vasospasm. Constriction of renal arteries and even manipulation of the renal vessels often result in prolonged vasoconstriction and anuria. A number of investigators have shown that dextran actually improves perfusion of the kidneys in the face of relative ischemia and helps prevent acute renal failute (Fig. 2).[4, 28, 30] It is perhaps pertinent to note that Bergentz and his associates[10, 11] have reported favorably on treatment with dextran 40 of patients with established acute renal failure. These patients were not dialyzed and apparently had fared better than their counterparts who were dialyzed.[11] We have also treated 4 patients with acute renal failure with small amounts of dextran 40 equal to their daily urinary output during the oliguric phase. Three of these patients recovered without resorting to dialysis. The fourth patient also showed gradual improvement of renal function; however, he died as a consequence of peritonitis and pneumonitis following strangulating intestinal obstruction. Despite these observations, it must be emphasized that administration of dextran in the presence of established renal failure may be hazardous. However, the hazard probably does not stem from any major nephrotoxicity, but rather from overloading and developing pulmonary edema.

One other indirect but potential complication of dextran infusion may be mentioned here, namely, the difficulty in typing and cross-matching the blood. Dextran 70, but not dextran 40, has been known to interfere with this process, according to available information. Therefore, it is recommended that the blood for typing and cross-matching be drawn before dextran is given to the patient. Should the need for transfusion unexpectedly arise after dextran has been given, the blood bank should be informed of it.

## CLINICAL APPLICATIONS

With the basic characteristics of dextrans described earlier, numerous potential applications of dextrans may be envisioned. Space will permit description of only a few established ones and the mention of a few others.

**Shock.** It is generally agreed that in shock, regardless of its etiology, the basic problem is impaired capillary flow and diminished tissue perfusion. This impaired microcirculation may result from inadequate respiration, ineffective cardiac pump, insufficient blood volume, increased vascular resistance due to excessive vasoconstriction, and increased blood viscosity. The rationale for use of dextrans in shock is as follows.

1. Some degree of blood volume deficiency is present in nearly all types of shock. Both dextran 40 and dextran 70 restore blood volume rapidly. However, the entire blood and fluid loss when massive should not be replaced by dextran alone, since excessive bleeding may ensue. Addition of limited quantities of dextran to blood and electrolyte solutions for volume replacement provides better results than either of the latter alone.[11, 37] The maximum dosage of dextran for this purpose should not exceed 15 c.c. per kilogram of body weight over 24 hours. The hemodilution which secondarily occurs following infusion of dextran will also provide for improved blood flow.

2. The presence of excessive red cell aggregation and increased blood viscosity is well documented in patients in shock and in experimental animals. Dextran 40 and, to a lesser extent, dextran 70 prevent and reverse erythrocyte aggregation and reduce abnormally high blood viscosity. This effect has been shown to be superior to that achieved by other means of hemodilution. These qualities of dextran, along with restoration of blood volume, both in amount and in composition, and with measures to improve cardiac and respiratory functions will lead to enhanced microcirculatory flow. The sequestrated and stagnant blood and fluid are brought back into effective circulation. Venous return improves, peripheral resistance is decreased, and cardiac output is further augmented. Better tissue perfusion is maintained, and kidney function is improved even without diuresis.[4, 34, 35, 46]

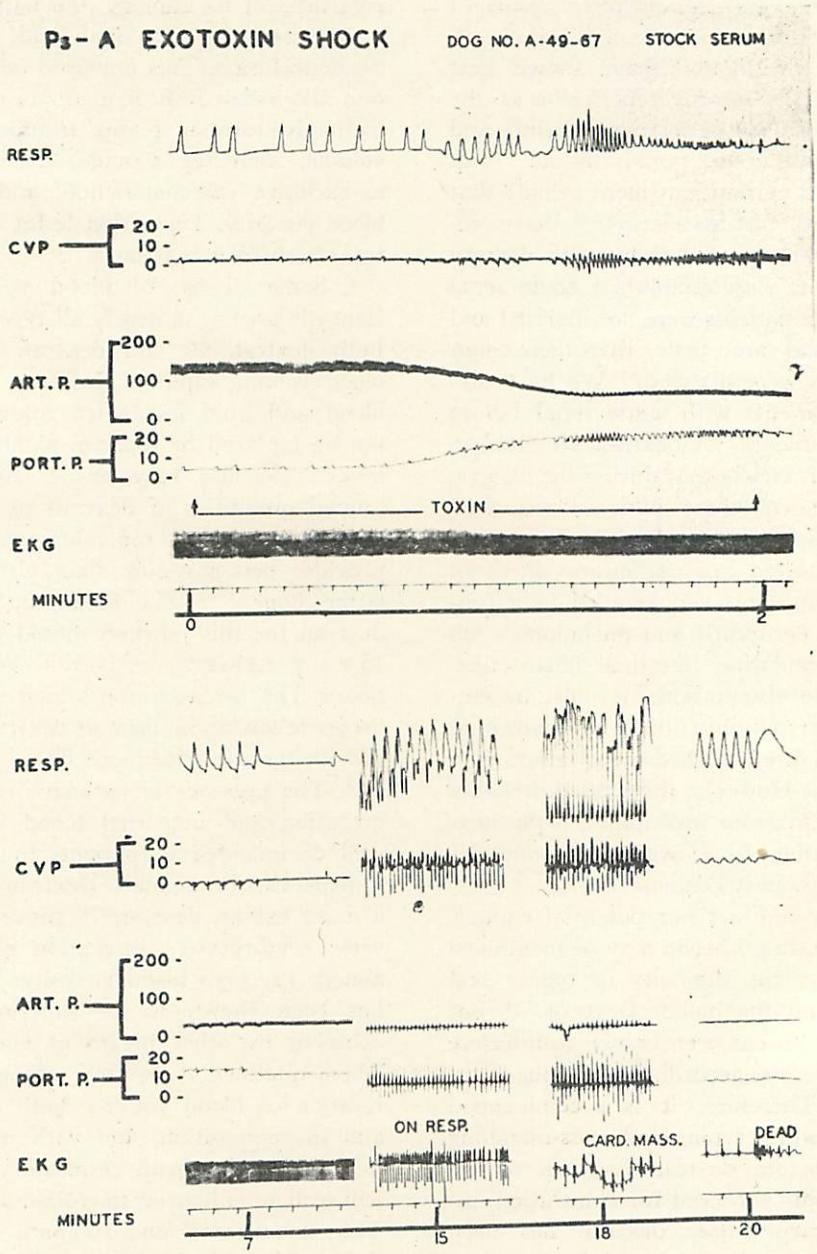



Fig. 3. Tracings of severe anaphylactoid reaction in a dog following injection of *Pseudomonas aeruginosa* exotoxin. Note the rise in portal pressure followed in seconds by profound arterial hypotension and respiratory difficulty. Pretreatment with nonimmune serum offered no protection and the dog died in 20 minutes.[7]

3. By minimizing platelet aggregation and adhesiveness and microcirculatory stasis, dextrans, if given early, will prevent the disseminated intravascular clotting which is a serious complication of shock and which may lead to consumptive coagulopathy.[26]

Gelin and associates,[22, 23] Baker and colleagues,[9] and others have documented the beneficial effects of dextran in hemorrhagic and traumatic shock.[11] Lillehei and associates,[34] Cohn and Luria,[17] and others have reported favorable influences of dextran in the over-all management of cardiogenic and septic shock. Atik[4] has shown the effectiveness of dextran 40 for protection against transfusion reaction and for prevention of acute renal failure following shock. He has emphasized the role of dextran as an adjunct to other standard measures for improvement of circulation. To be effective, shock must be treated vigorously and dextran given early in anticipation of these complications.

Prophylactic use of dextran 40 has also been shown to reduce the anaphylactoid reaction which is seen following intravenous infusion of fat emulsions, bacterial exotoxins, and endotoxins (Figs. 3 and 4).[7] Thus, in shock, as it is known today, multiple derangements may be present. All of these must be treated individually and collectively in order to be successful. Therefore, a salutary effect should not be expected from the use of dextran if: (a) cardiac function is not improved by correction of metabolic acidosis and electrolyte imbalance or by use of digitalis or other inotropic agents, (b) the volume loss is not replaced adequately and rapidly with blood and balanced saline, (c) respiratory acidosis or hypoxia is not corrected, (d) circulation to an organ has been occluded for unduly long periods, (e) the devitalized damaged tissue has not been eliminated when feasible, (f) severe infection is not eradicated, and (g) if damage to the organs has already taken place.

**In conjunction with vascular operation.** Both dextran 40 and dextran 70 have been used with gratifying results in conjunction with reconstructive vascular operations.[5] They are beneficial in maintaining patency of vessels following angioplasty, insertion of vascular prostheses, and anastomoses of smaller vessels. These beneficial results are due principally to the antithrombogenic effects of the dextran and improved microcirculation. Dextran 40 perhaps has an additional advantage of maintaining better perfusion of tissue through collaterals distal to temporarily occluded vessels. Under the author's supervision, over 250 patients operated upon for various major vascular disorders have been given dextran. There have been no incidents of early thrombosis or progression of ischemia, except in 3 cases in which the circulation could not be reestablished at the time of operation. No major complications from the use of dextrans have been observed in these patients.

**In treatment of thrombophlebitis.** The effectiveness of dextrans in treatment of thrombophlebitis has been well established.[5, 11, 18, 42] There is no clinical demonstrable difference between dextran 40 and dextran 70 in this regard. On the author's service in the past 4 years, all patients with thrombophlebitis have been treated with dextran in preference to heparin and other anticoagulants. The patients, with very few exceptions, have responded rapidly to the treatment, with relief of clinical signs and symptoms within 24 to 48 hours. A few patients who have been seen late in the course of disease have been somewhat refractory, with much slower responses. There has been no necessity for thrombectomy, even in patients who have had massive iliofemoral thrombosis, with the exception of 1 patient who failed to improve rapidly even after thrombectomy and heparin therapy. There has been no known incidence of pulmonary embolism in these patients who have been treated with dextran. The use of heparin and other anticoagulants was given up because of relative unreliable and slow results, some difficulty with proper dosage control, and failure to prevent pulmonary embolism.

**In prevention of pulmonary embolism.** Perhaps one of the most rewarding experi-

ences with dextran has been our recent attempt to prevent pulmonary embolism. Pulmonary embolism is one of the most frequent causes of postoperative death and comprises about 10 percent of autopsy cases in most medical centers. The old, obese patients with cardiovascular and central nervous system disease, those with infection, those who have been in shock and have received multiple transfusions, those with serious debilitative disease and blood dyscrasia who undergo major operations, and those who are confined to bed for a prolonged time are considered to be high risk as they are especially susceptible to this complication.

In the last 4 years, in one of the 4 general surgical services of the University of Louisville Hospitals under the supervision of the author, over 600 high-risk patients have been treated prophylactically with dextran for prevention of pulmonary embolism. Dex-

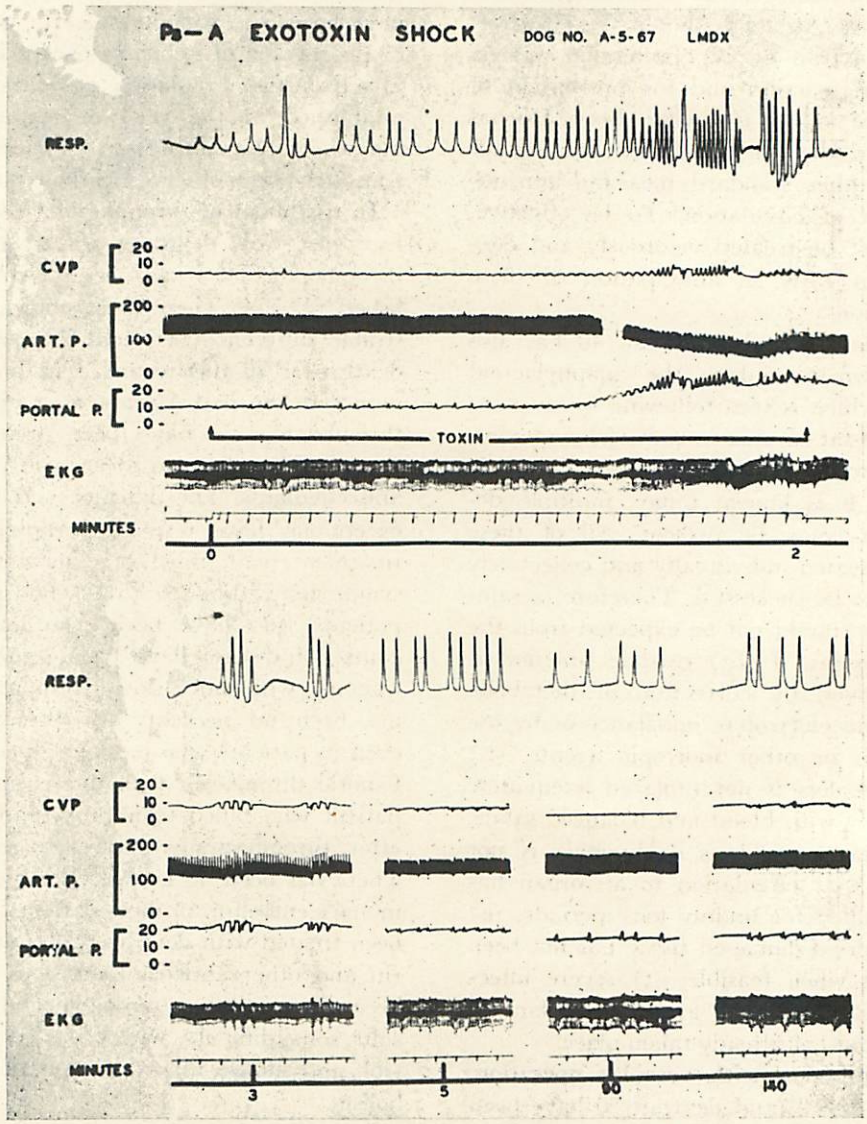



**Fig. 4.** Tracings of a dog pretreated with dextran 40 *(LMDX)* and injected with *Pseudomonas aeruginosa* exotoxin. Note the mild and brief reaction to the exotoxin (compare with Fig. 2).

tran infusion (7 to 10 c.c. per kilogram of body weight over 24 hours) is usually started just before operation or at the time of admission if the patient is considered to be a potential risk for pulmonary embolism. It is continued during the operation and daily for 2 days postoperatively, and then every other day until the threat of pulmonary embolism diminishes. Only 2 patients in this treated group developed pulmonary embolism—one had generalized carcinomatosis with involvement of vena cavae, the other patient had a fractured pelvis, retroperitoneal hematoma, and traumatic thrombosis of the iliac vein. In this second patient, dextran treatment was discontinued prematurely while the patient was still sick and bedridden. In the other 3 general surgical services, with a comparable population of high-risk patients and under the care of the same resident staff, 59 cases of pulmonary embolism proved by autopsy were observed during this 4 year period.

To establish the efficacy of dextran in this respect, a better controlled study has been recently started in cooperation with our orthopedic service. Ninety-five patients with major fractures of the hip and long bones were randomized according to their odd and even hospital numbers. Thirty-eight patients with odd numbers were infused with dextran 70 intravenously, 500 c.c. per day before, during, and after operation. Fifty-seven patients with even numbers served as the control group and were given 500 c.c. per day of saline intravenously before, during, and after operation. There was no evidence of thromboembolism or complications attributed to dextran in the treated group. One treated patient died with pulmonary embolism 7 weeks after discharge from hospital. She was not considered a failure because of the amount of time that had elapsed. There were 7 cases of pulmonary embolism in the control group, 4 proved at autopsy and 3 substantiated by lung scan. Four additional patients developed thrombophlebitis without pulmonary embolism. A study of platelet adhesiveness indicated a progressive rise to 13 percent above the mean control value in the control patients following the operation, but a 30 percent

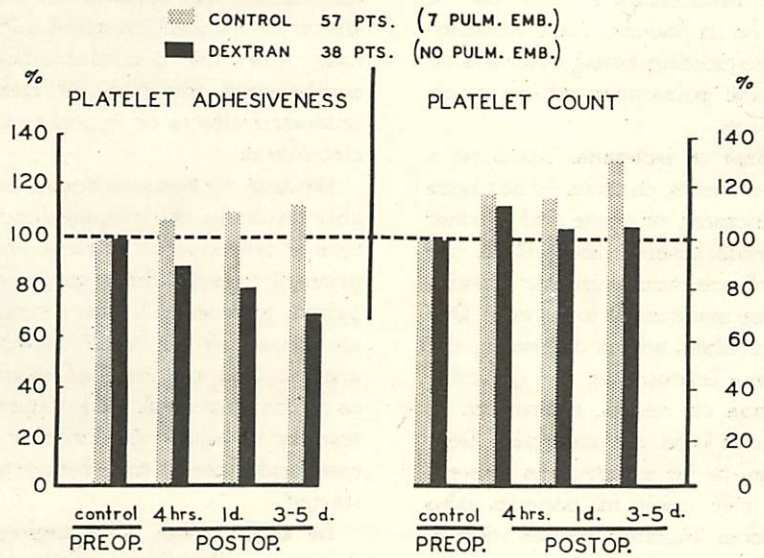



Fig. 5. Platelet counts and percent platelet adhesiveness in 2 groups of patients, one treated with dextran and the other not treated. The control value (100 percent) is represented by the horizontal broken line. Note the rise in platelet adhesiveness postoperatively in the untreated patients, 7 of whom developed pulmonary embolism. Platelet adhesiveness fell in the dextran-treated patients, and none developed embolism.

fall below the mean control value in the patients who were given dextran (Fig. 5). In the control patients who developed thromboembolism, a further increased platelet adhesiveness (over 50 percent) was observed. These differences between the 2 groups are statistically significant, $p < 0.01$. The efficacy of dextran in prevention of thromboembolism has been reported by other investigators, and a similar rise in platelet adhesiveness following major operations has been observed in other laboratories.[16, 19, 32]

While the effectiveness of heparin and Coumadin for this purpose has also been reported, bleeding complications have discouraged the wider use of these anticoagulants in conjunction with major operations. Moreover, a number of high-risk patients in these studies have been excluded because of pre-existing disease or some contraindications to anticoagulation. Unfortunately, these are the very patients who are potentially susceptible to pulmonary embolism, and indeed some of these have developed this dreadful complication. We have not excluded any patient from our study so far. The only contraindications for the use of dextran would be in patients with thrombocytopenia or pre-existing blood dyscrasia or in those in frank pulmonary edema or in acute renal failure.

**In management of ischemia.** Based on a number of experiments, dextran 40 has been used in the treatment of acute and chronic peripheral arterial disease, as well as the management of cerebral vascular insufficiency and acute myocardial infarction. Due to numerous variables which determine the outcome of these lesions and the difficulty in the evaluation of results, assessment of dextran treatment is as yet uncertain. Dextran 40 appears to be effective in prevention of sickle cell crisis in patients who undergo operation. Further investigation is necessary in this area. Its efficacy in the management of fully established sickle cell crisis is debatable.[6]

**In cardiopulmonary bypass procedures.** Several investigators have reported favorably on the use of dextran 40 in the priming fluid for the pump oxygenator. Dextran 40 (1) provides hemodilution, which can also be achieved by glucose and lactated Ringer's solutions; (2) provides better organ perfusion by decreasing blood viscosity and red cell aggregates; (3) reduces the hemolysis, platelet agglutination, and fluid sequestration commonly seen following perfusion with blood alone; (4) improves renal function; and (5) diminishes the severity of post-perfusion pulmonary syndrome. Increased bleeding with employment of dextran in extracorporeal circulation has not been a problem unless unduly large quantities are used. Short-term cardiopulmonary procedures may be performed satisfactorily with hemodilution with crystalloid solutions alone or in combination with blood. For long procedures the addition of dextran to other fluids and blood for priming the pump is favored, according to a number of controlled studies.[27, 36, 39]

**In conjunction with hypothermia.** Hypothermia impairs microcirculation by increasing vasoconstriction and blood viscosity. While it is used to decrease tissue metabolism, hence the demand for oxygen, the ill effects of reduced impaired microcirculation may offset the potential advantage of its employment. Dextran 40 minimizes these untoward effects of hypothermia on microcirculation.

Dextran 40 has also been used with favorable results in the management and prevention of cold injury.[6, 43] Here again the lesion primarily results from vasoconstriction, impaired microcirculation ultimately leading to thrombosis of small vessels and tissue anoxia. The outcome of dextran therapy, as to be expected, will depend upon the severity of injury, pre-existing vascular disease, and lapse of time before treatment has started.

**In conjunction with angiography.** That dextrans add safety to utilization of radiopaque material for angiography is supported by a number of reports from several centers and by our own experience.[13, 47]

**In organ preservation and transplanta-**

**tion.** Manax and associates[40] have been able to preserve organs in a viable state for hours with perfusion with dextran 40 under hypothermic conditions and in a hyperbaric oxygen environment. Gelin and his associates[23] have achieved similarly effective prolonged kidney preservation with dextran perfusion and hypothermia, but without hyperbaric oxygen. Dextran can also be used to achieve better perfusion of the transplanted organ and help maintain patency of the anastomosed vessels.

**Miscellaneous applications.** Dextrans have been tried for a variety of purposes, such as, prevention of postoperative intra-abdominal adhesions, cancer dissemination, organ perfusion with cancer chemotherapy, treatment of burns, and fat embolism. At present, sufficient clinical data are not available to appraise the role of dextran for these purposes.[1, 2, 10]

## SUMMARY

Dextrans are primarily used for their volume-expanding effects and for their improved blood flow and antithrombogenic qualities. Two dextran preparations are suitable for clinical use: dextran 40, with an average molecular weight of 40,000 and dextran 70, with an average molecular weight of 70,000. Dextran 70 is preferred for volume expansion and dextran 40 for flow-improving effects. No superiority of one preparation over the other has been established regarding their antithrombogenic effect.

Dextrans are to be employed as adjuncts to, and not as substitutes for, blood, plasma, or other fluid replacement. The maximum recommended dosage of dextran solutions over 24 hours is 15 c.c. per kilogram of body weight. This daily dosage is to be reduced or the interval increased if repeated infusions are contemplated.

With the available experimental data and clinical experience, a definite place for dextrans has been established (a) in the management of all forms of shock and low perfusion states, (b) in conjunction with cardiovascular operations, and (c) in the treatment and prevention of thromboembolism. Other indications for the use of dextrans need further investigation before their general acceptance.

Dextrans are suited best for prevention of certain complications and secondary circulatory derangements which often follow a variety of disease and injury, including operations. They must not be considered as therapeutic, since they exert little influence upon the primary disease. The primary disease or injury must be treated by appropriate means. If dextran is to be used at all, it must be used early in the course of the disease or injury before secondary pathologic changes are fully established.

The complications of currently available dextrans are few and mostly avoidable except for occasional hypersensitivity and anaphylactoid reaction. These complications are less frequent with dextran 40.

Dextrans may not have brought revolutionary improvement in the treatment of the sick, but they have brought several scientific disciplines together for the study of rheology and microcirculation, which undoubtedly provides better understanding of a variety of diseases.

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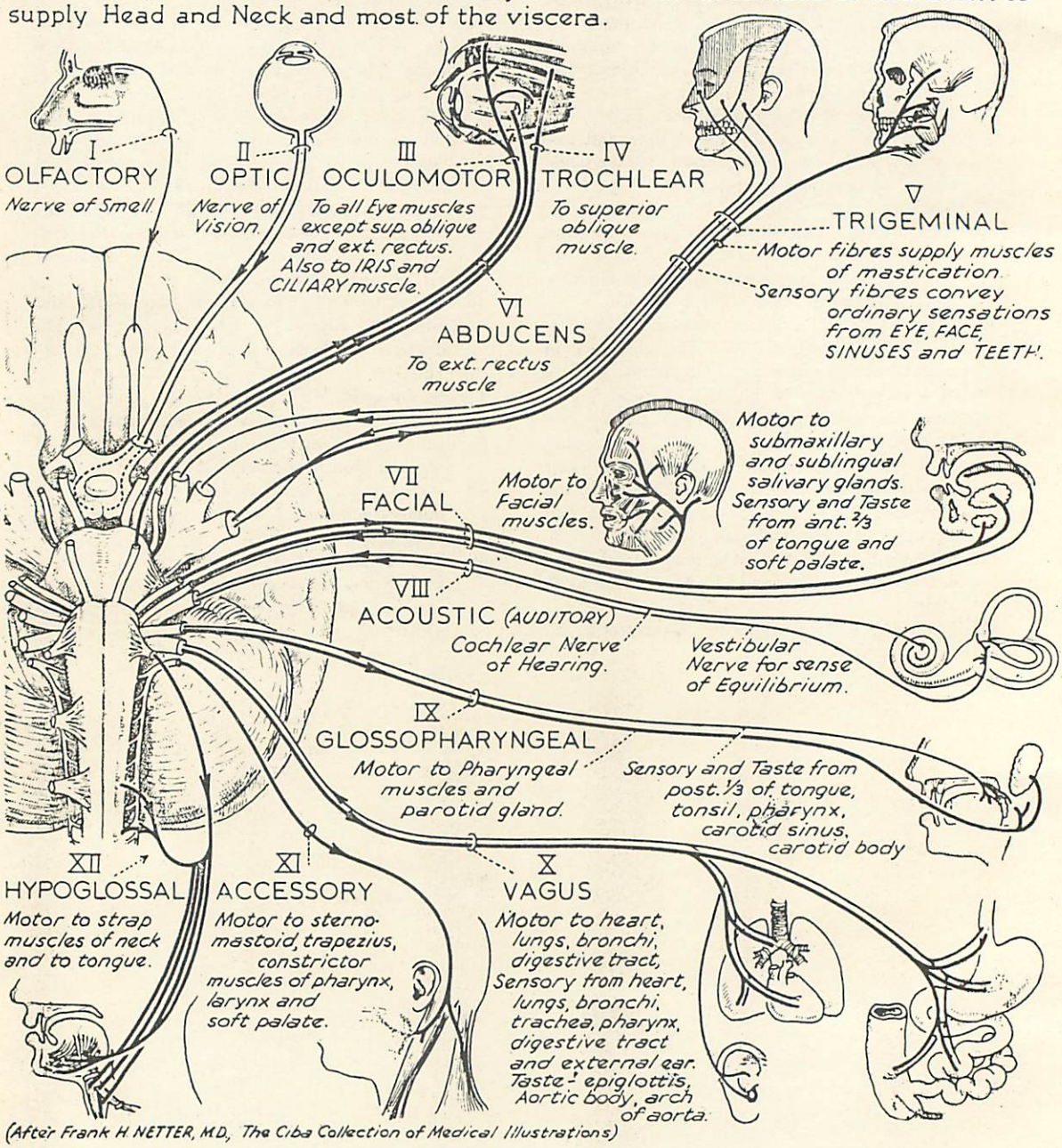
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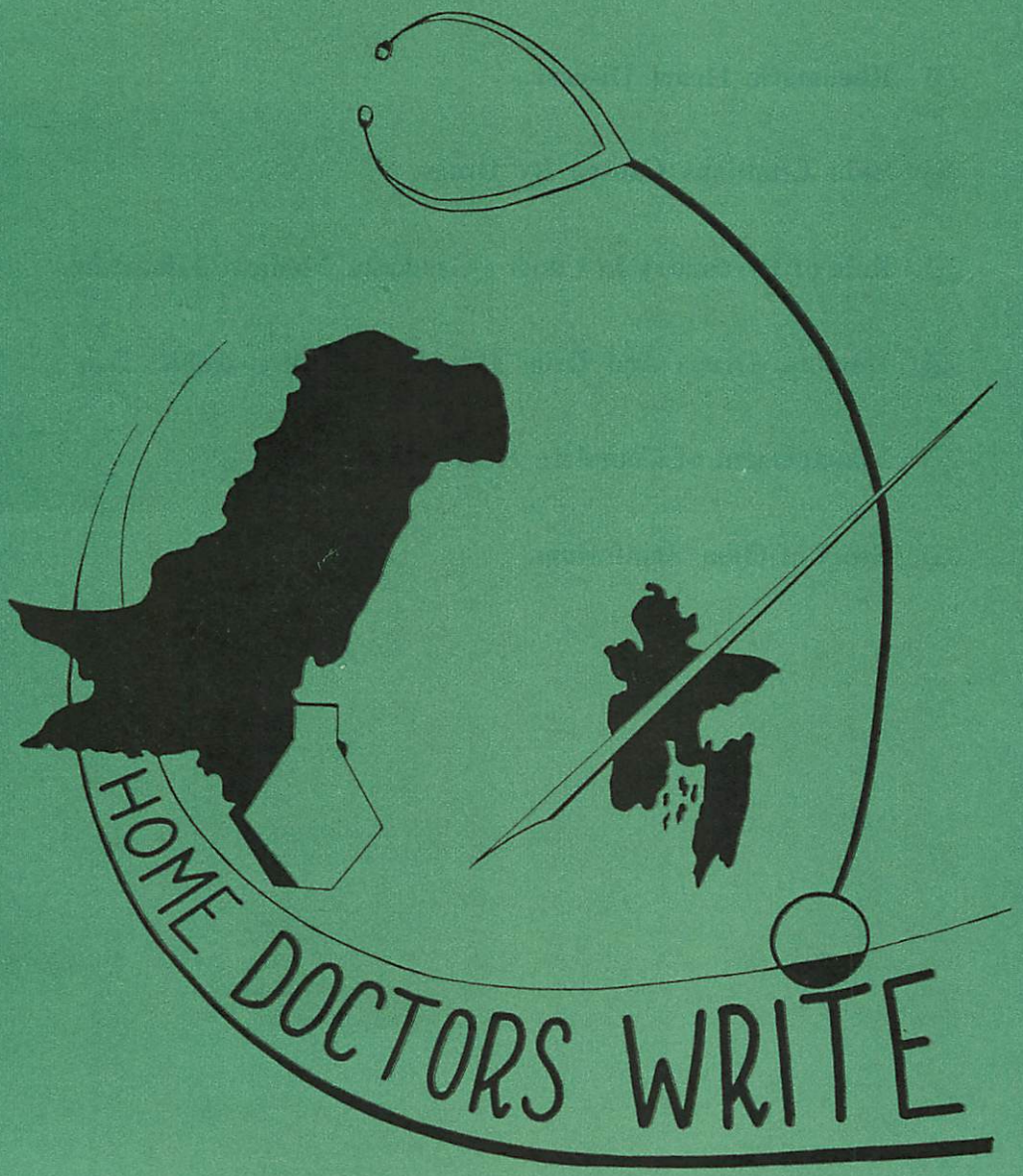
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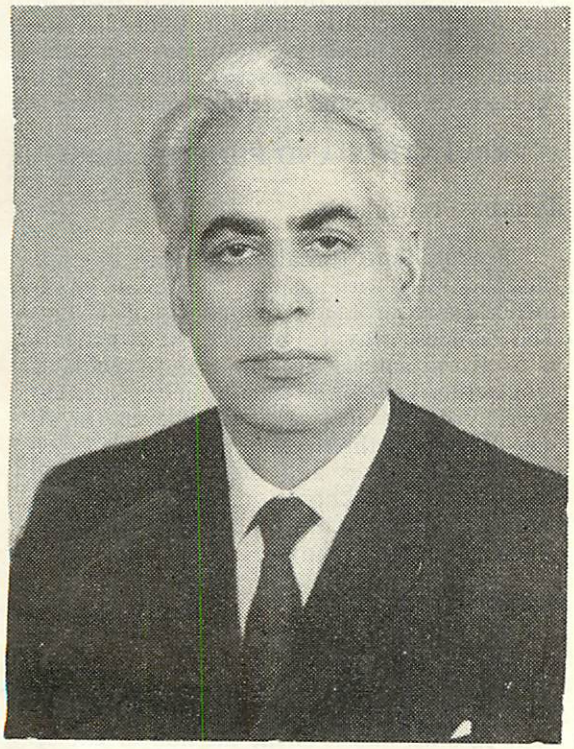
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# RHEUMATIC HEART DISEASE



S. A. SYED, SK., TI., F.R.C.P.E., F.A.C.C.

*Principal Investigator Cardiovascular Research Project, and Head of the Department of Cardiology, Jinnah Postgraduate Medical Centre, Karachi.*

IN many parts of the western world, there has been a steady decline in the incidence and severity of rheumatic fever and its accompanying carditis. In Pakistan, however, the rheumatic fever is still highly prevalent which carries the risk of severe carditis and a high mortality.

This review article is intended to present briefly an outline of etiology, diagnosis, treatment and prophylaxis of rheumatic heart disease.

**Etiology :**

The association between streptococcal infection and rheumatic fever is now firmly established. Streptococci themselves are not however been found within the lesions of rheumatic fever, at the same time none of the known products of these organisms has the ability to induce these lesions by direct action. The present view is that some immunological response, primarily directed against the streptococci in some way or other involves the host's own tissue.

**Diagnosis of Rheumatic Fever :**

Fever, rash, arthralgia, tachycardia and heart murmur have been associated with rheumatic fever. American Heart Association have suggested the revised Jones criteria for considering the diagnosis of rheumatic fever (Table—I).

**Table—I.**

The Revised Jones Criteria for the Diagnosis of Rheumatic Fever (American Heart Association, 1965).

| Major | Minor |
|---|---|
| Carditis | Clinical |
| Polyarthritis | Previous history of rheumatic fever |
| Chorea | |
| Erythema Marginatum | Laboratory |
| Subcutaneous nodules. | Acute phase reaction ; (E.S.R., W.B.C. count, C-Reaction Protein) |
| | Prolonged PR interval |
| Supporting evidence of preceding streptococcal infection O G. raised A.S O. titre. | |

The major criteria of which the carditis is the most important, include polyarthritis, chorea, eythema marginatum and subcutaneous nodules. The minor manifestations consists of previous episode of rheumatic fever or rheumatic heart disease, arthralgia, fever and laboratory evidence of acute infection and prolonged P-R interval.

At least two major and one minor or one major and two minor criteria must be presented to consider the diagnosis of rheumatic fever. It should be remembered that none of the criteria is sufficient for the diagnosis, unless there is supporting evidence of preceding streptococcal infection.

## TREATMENT

**General Management :**

Bed rest is an important part of therapeutic regimen for patients with carditis, however, prolonged and severe restriction of activity is unnecessary. Except in cases of acute carditis with failure, children may be allowed to be up and about if they have no symptoms.

The patients treated with steroid therapy, may develop a false sense of well-being and here they have to be restrained.

**Penicillin :**

Penicillin, preferably intramuscularly, should be administered for at least 10 days. If oral therapy is prescribed, the initial treatment should be started with intramuscular penicillin followed by oral penicillin for the prescribed period. If the patient is sensitive to penicillin, it should be replaced by a combination of one of the tetracycline and eythromycin. It is advisable not to use tetracycline alone as resistance is readily acquired.

Sulphonamides have no place in the acute phase of the disease.

**Salicylates :**

Salicylates provide symptomatic relief in acute rheumatic fever. Buffered and soluble aspirins are preferred, particularly if used for prolonged periods.

It is not established whether salicylates have any significant effect on carditis.

Salicylates are by no means harmless and one should be aware of their toxic effects.

**Steroids :**

Steroids have been shown to improve the patient's well-being, provide relief from pain, facilitate the joint movements and reduce the temperature. Recovery is more rapid and ambulation can be started at an earlier stage when steroids are given.

The usual duration of rheumatic activity during which therapy for carditis is advised, ranges from 3—5 months.

Extensive studies carried out have, however, shown that the use of steroids does not greatly influence the ultimate incidence of permanent carditis. In view of the toxicity of the steroids, their use should be under laboratory control. The use of steroids, when combined with salicylates, carries increased risk of gastric erosion and possible haemorrhage.

## PREVENTION AND PROPHYLAXIS:

**Primary Prevention :**

All acute sore throats in general practice must be taken with suspicion for acute streptococcal sore throat and treated with penicillin. The simplest way to protect these patients is to give a single injection of 2 to 5 ml. of long-acting penicillin (Benzathine penicillin) which provides adequate blood levels for 10 days. Ideally, a throat culture should be taken in suspected cases and therapy be reserved until the result is known or started and modified (if started at the time of throat swab) when the result is known.

**Secondary Prevention :**

A monthly injection of long-acting penicillin (Benzathine Penicillin) 1.2 to 1.5 mega units will help to prevent the development of significant carditis, and it is the method of choice. For oral prophylaxis, methoxymethyl penicillin, 125 mg. twice a day can be given.

It is advisable to continue the prophylaxis during childhood and adolescent years when contact with large community groups is likely and during which period rheumatic fever is most common.

In cases who develop first attack of rheumatic fever in adult life, prophylaxis should be continued for at least five years after the attack.

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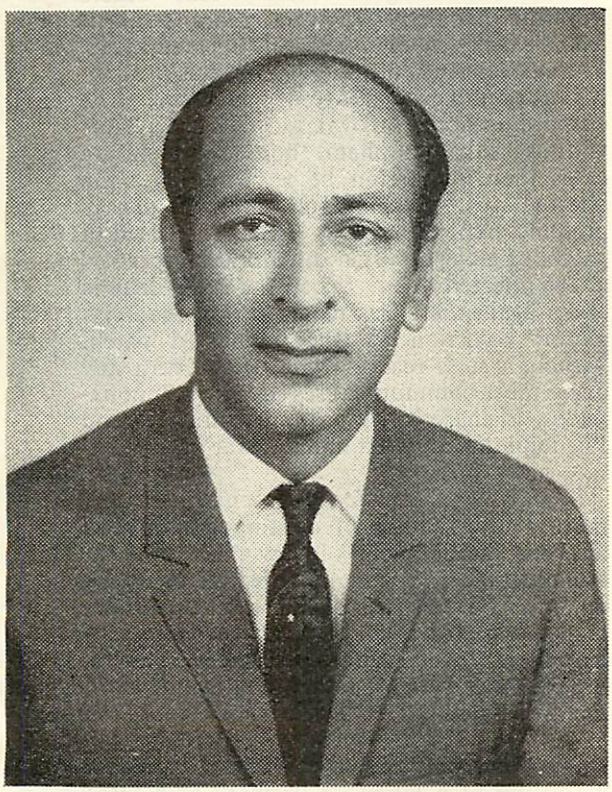
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# Skins Eruptions Caused By Drugs



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DRUG eruption can be defined as a cutaneous or mucosal reaction which occurs in a susceptible person after a drug is taken in therapeutic doses by any of standard routes of administration.

Although drug eruptions are not uncommon, their incidence is very low if one considers the enormous quantities of the drugs that are being consumed every day.

While these reactions may involve almost any organ of the body, the skin appears to be the most frequent target. The drug reaches the skin in such cases through the blood stream, therefore allergic contact dermatitis is not included in this category.

The same drug can give rise to a different clinical picture in different persons, or even in the same individual at different times. Therefore from the appearance of the rush alone it may not be possible to determine as to which of the several drugs the patient may be taking at the time, is responsible for the reaction. However some drugs are known to produce typical types of skin lesions.

**Pathogenesis of Drugs Eruptions :**

(a) Cumulative effect: — In this a continuous prolonged use of the drug is required. These reactions are particularly likely to appear on excessive dosage or on body's failure to metabolise or excrete these drugs properly.

Quinacrine produces a yellowish discoloration of the skin if taken continuously for many months. This drug and other antimalarial also produce bluish pigmentation in the pretibial, palatal, facial and sublingual areas. The mechanism of these colour changes is not known Mercurial pigmentation of the nails is also a well recognised condition.

Cation toxicity may occur with renal disease or uraemia when penicillin is given in large doses over a short period. 15 million units of potassium penicillin G gives 25 m Eq. of potassium.

(*b*) *Pharmacological effect:*—Skin changes produced by triparanal are probably produced through their pharmacologic effect. This drug primarily used to reduce serum cholesterol, produces generalised Ichthyosis like skin changes, Blepharitis, alopecia and depigmentation of the hair. This reaction has been

explained as a "Normal pharmacologic effect" of this drug at a site where it is not intended to act, and is produced probably by prevention of epidermal synthesis of cholesterol and other sterols.

(*c*) *Over dosage effect:*—The occurance of these effects are the result of the presence of excessive amount of the drug in the body, and the first evidence of this overdosage may appear in the skin, as is sometimes seen in anti coagulant therapy where bleeding in the skin appears as minute petechiae.

(*d*) *Allergic Reactions:*—For a simple chemical drug to be able to produce an allergic reaction it is necessary that it should first combine with tissue protein to form a complete antigen. The main characteristics of the allergic reactions are:—

(i) Drugs which may have been taken for a long time without any harmful effect, suddenly cause severe eruptions even though taken in very small doses. This reaction will always recur whenever that drug is taken.

(ii) The cutaneous changes are different from the known pharmacologic action of the drug.

(iii) Drug with completely different pharmacological actions can cause similar allergic reactions. Similarly drugs with identical pharmacological properties can cause different allergic reactions.

(iv) The dose of the drug required to produce an allergic reaction is much smaller than that required to produce its pharmacologic effect. The allergic reactions to drugs may manifest as different clinical patterns in different persons. These include Anaphylactic reactions, urticaria, Serum Sickness, Morbilliform and Scarlatimiform skin eruptions.

(*e*) *Photosensitivity Reactions:*—These are usually of two different types.

(*i*) *Phtotoxic:*—In this damage to tissues is produced as a result of chemical changes occurring due to light absorption by the drug which may lead to oxidative reaction and tissue damage.

(*ii*) *Photoallergic:*—In this the radiant energy absorbed by the drug probably causes its conjugation with tissue proteins and results in the formation of a complete antigen. Subsequently the individuals immune responce results in the causation of the reaction.

Onycholysis in patients taking demethylchlortetracycline is an example of phototoxic type of reaction. Chlorothiazide type of diuretics cause photoallergy but not phototoxicity.

(*iii*) *Fixed Drug Eruption:*—This differs from the other types of drug rashes in that it recurs exactly in the previously effected areas. The mechanism is not known, but it is probably an example of delayed sensitivity. The eruption is round or oval, purplish red plaque with a sharp peripheral border. In severe cases there may even be a blister over the affected area. Itching and burning is always present. After the drug in discontinued a patch of greyish black discoloration persists at the affected area. When the same drug is taken again there is a recurrence of the inflamatory reaction at the pigmented patch. Although such reaction can occur with any drug, most common causes are the sulphonamides, Phenacetin, Aspirin, Barbiturates and Phenolphthalein containing laxatives.

(*f*) *Jarisch Herxheimer Reaction:*—In this there is exacerbation of existing lesions, and also the development of new ones after the administration of a highly effective drugs for an infectious disease. It represents a tissue response to toxic or allergenic substances released by the drug susceptible micro-organisms. This is commonly seen in treatment of Syphilis with Penicillin.

(*g*) *Biotropic Effects :*—This represents activation of a latent or dermant skin infection by a drug. An example of this is the flare up of Herpes Simplex by Bariturates.

(*h*) *Ecologic Imbalance:*—This type of reaction is based on disturbance in the normally prevailing balance between different species of micro-organisms. An example is ever growth of candida in the mouth and anogenital region after prolonged use of broad Spectrum Antibiotics

**Diagonsis of Drug Eruptions :**

A diagnosis of drug eruption is obvious if the rash has appeared suddenly after taking a

drug. If the skin lesions fade when the drug is stopped then the diagnosis is almost certain. With most drugs there will be recurrence if the drug is taken again.

Skin tests are not of much value in diagnosis and may even produce a severe reaction in an already hypersensitive patient. A blood count may be of some assistance in certain cases. An Eosinophilia is often associated with serum sickness, and skin eruptions due to Barbiturates, sulphonamides, and Neoarsphenamine.

**Skins Eruptions Associated with some of the Common Drugs**

1. *Sera:*—Anti tetanus serum is in common use and given rise to serum sickness and urticaria in a large number of cases. Anaphylaxis is a serious condition that may also develop after injection of Sera especially in the atopic subject.

**2. Antibacterial Agents :**

(a) *Sulphonamides:*—A variety of cutaneous reactions can occur with sulpha drugs. Pruritus, Urticaria, and morbilliform eruptions are however more common. Purpura and allergic Angitis may also be caused by sulpha drugs.

(*b*) *Para Amine Salicylic Acid* (*P.A.S.*):—Cutaneous reactions include generalised pruritus, erythema, maculo-papular eruptiens and urticaria.

(*c*) *Isonicotinic Acid Hydrazide* (I.N.M.) Skin reactions consist of pruritus, strise, Urticaria, generalised erythema and maculo-papular eruptions.

**3. Antibiotics :**

(*a*) *Penicillin:*—amongst the antibiotics this is reported to be responsible for most of the cutaneous reaction. Many deaths due to Anaphylactic Shock due to Penicillin injections have been reported from various parts of the world.

Skin reactions to Pencillin G include urticaria, generalised erythema and allergic angiitis.

Semisynthetic penicillins also produce similar reactions.

(*b*) *Tetracyclines:*—The reported cutaneous reactions include urticaria, pruritus ani and photosensitivity. The last symptom is especially associated with Demethyl-colortetracyline which may also cause finger nail changes.

(*c*) *Erythromycine:*—Cutaneous reactions include urticaria, Pruritus and generalised maculopapular eruptions.

(*d*) *Griseofulvin:*—may cause generalised pruritus, maculepapular eruption and urticaria. Photosensitivity—has also been reported due to this drug.

**4. Central Nervous System Depressants :—**

(a) *Barbiturates:*—Cutaneous reactions consist of urticaria, maculo-papular eruptions, Erythema multiforme, and fixed drug eruptions.

(*b*) *Tranquilizers:*—The phenothiazine derivatives can produce urticaria, maculopapular eruptions, Purpura, Pigmentation and Photosensitivity.

**5. Analgesics :—**

(*a*) *Acetyl Salicylic Acid:*—has been reported to cause pruritus, urticaria, fixed eruption, Purpura, and generalized erythematous or popular eruptions.

(*b*) *Phenazone:*—Cutaneous effects include erythema, Urticaria and fixed drug eruptions

(*c*) *Aminopyrine:*—can cause urticaia, maculopapular eruption and Purpura.

(*d*) *Phenacetin:*—can cause Urticaria, fixed drug eruption and erythema multiforme.

**6. Vitamins :**

(*a*) *Vitamin A:*—Possible cutaneous manifestations are somewhat similar to these seen in Vit. A deficiency states. These are roughness and dryness of the skin. Fissures of the angles of the mouth, and hair loss.

(*b*) *Thiamine:*—given by parenteral route can cause pruritus and angioneurotic oedema.

(*c*) *Nicotinic Acid:*—produces dryness of the skin and flushing.

(*d*) *Vit. K.:*—cause petechiae in the skin.

**7. Metals :**

(*a*) *Arsenic:*—This may result in a brownish grey pigmentation of the skin, Hyperhidrosis of the palms and soles, and cutaneous malignancies.

(*b*) *Gold:*—can cause erythema, Lichenied and urticarial eruptions, Exfoliative Deramatitis and Purpura. Gray brown pigmentation on the exposed parts of body can also occur after gold therapy.

(*c*) *Iron:*—has been reported to cause urticaria after parenteral therapy.

**8. Antimalarials :**

(a) *Quinine*—causes Scarlatiniform erythema and urticaria Vesicular, Bullous, and purpuric eruptions also occur.

(*b*) *Quinacrine hydrochloride:*—when taken for a period of time often result in yellowish discoloration of the skin especially on the arms, hands and feet. Scleral spigmentations has also been reported.

A lichenoid dermatitis similar to lichen planus also occurs at time with quinacrine.

(*c*) *Chloroquin:*—frequently produces urticaria. Optic atrophy may also occur with chloroquin.

**9. Hormones :**

(*a*) *A.C.T.H. and other Steroids :* The cutaneous reactions include moon facies, straie, bruising, hirsutism and Ache. These are likely to develop after prolonged administration of these drugs.

(*b*) *Hormonal contraceptives:* are reported to have caused chlosama like pigmentation of the face and neck, Acne, urticaria and hair loss.

**10. Other Miscellaneous drugs:**

(*a*) *Dilantin:*—Gingival Hypertrophy, gingivitis, and exfoliative dermatitis have been reported.

(*b*) *Piperazine:*—Cancause Purpura, Bleeding gums and urticaria.

(*c*) *Phenolphthalein:* Fixed drug eruption, Bullous dermatitis and stomatis can occur after its use as a laxative.

(*d*) *Ephedrine:*—cutaneous reactions include urticaria, purpura and erythema.

**Treatment of Drug Eruptions :**

Most reactions to drugs are mild, and all that is required is that the offending drug should be withdrawn. If there is anaphylactic reaction, this should be treated on the following lines depending on the severity of the reaction.

(a) Inj. of adrenaline 0.5 to 1.0 ml of 1 in 1000 injected subcutaneously and repeated in5-10 minutes if necessary.

(b) Intramuscular or intravenous anti histamine injection.

(c) Soluble corticosteroids given intravenously if the situation warrants.

(d) Intravenous drip with Noradrenaline to be given in case of circulatory collapse.

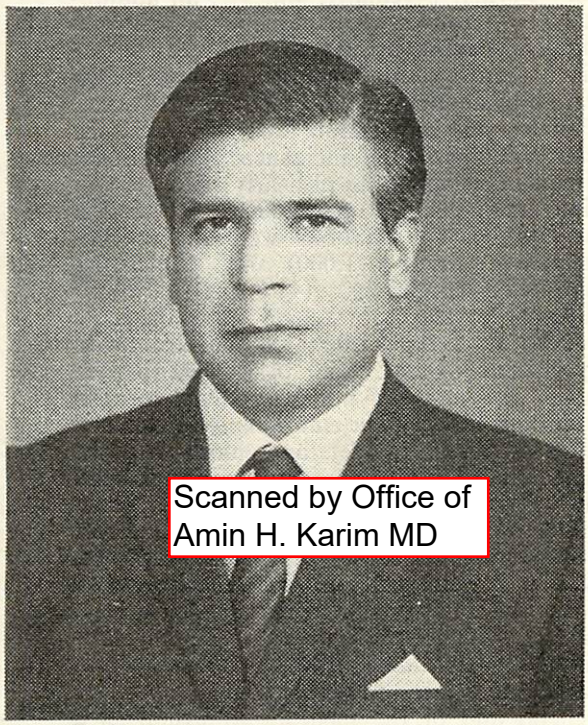
In the management of conditions like exfoliative Dermatitis, steroids should be given in sufficient doses so as to suppress the eruption completely and then the dose should be gradually reduced untill the rash has entirely faded. When the eruption is due to heavy metal like arsenic a full course of Dimercapril (BAL) should be given.

Antihistamines help in the control of itching associated with drug eruptions. These are however much more effective in the management of urticarial drug eruptions.

**Conclusion :**

Drug eruptions are not uncommon, and most reactions are mild. Urticaria and the Exanthematous type of skin lesions are more common and are easier to manage. But reactions like extensive Purpuras, Exfoliative dermatitis and anaphylactic shock require much more energetic treatment.

# Role of Psychiatry In Under-Graduate Medical Education


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ONE of the most succinct descriptions of the historical development of psychiatry has been provided in the World Health Organisation Expert Committee on Undergraduates teaching of psychiatry and mental health promotion (1961):

"There were psychiatrists of course, even before psychiatry was recognized as a branch of medicine worthy of being taught in Medical schools. These early psychiatrists were mostly general clinicians who took a special interest in the diseases of the mind and most of them worked in asylums for the insane, apart from the rest of their medical colleagues. It was only round the middle of the last century that medical schools began to accept psychiatry as a subject to be taught in the curriculum, although only as an appendix to general clinical medicine and usually with a certain neurological emphasis.

"Later, psychiatry began to develop into a medical speciality. This was due to a general solidification of its scientific basis, to a great wealth of clinical experience, and finally to considerable improvement in its possibilities for therapeutic and preventative action.

"Advances in the understanding of the function of the central nervous system, derived from the work of Neuro-anatomists, Neurophysiologists and Neuropathologists, all played their part in consolidating the scientific basis of psychiatry. In this connection, special importance has to be attributed to the development of cortical syndromes such as the aphasias, apraxias and agnosias, and later on to the investigation of extra-pyramidial functions and of the finer anatomy and physiology of the vegetative system, particularly at the cerebral level. It is hardly necessary to point out that the Neurophysiological approach is still adopted in modern research, for instance, in the field of epilepsy, cybernetics and brain chemistry."

The aspects of clinical psychiatry which merit discussion are many and varied. For pragmatic reasons it is necessary to confine discussion to a few of the many aspects. These include the role of psychiatry in clinical medicine, its value in the education of medical students and its value in the promotion of mental health in the community. From a review of these the concept of the actual content of instruction will emerge as a logical sequence.

**Role or Psychiatry in Clinical Medicine :**

The first point to be considered is the increased demand for psychiatric care in the

present day world. The most important reason for this, is of course, the fact that the population of the world has increased tremendously. There are more people living today that have ever been born. This alone would indicate the tremendous need for the treatment of any disease condition which may afflict human beings. The next important reason is that although in many less developed countries there are urgent problems which face physical and preventative medicine in the fields of nutrition, maternal and child health and the prevention of infectious diseases. In all of these fields the actual toll of life has been and remains considerable it is only very recently that consideration has been given to effects of psychiatric ill health on the community's well being and on its economic efficiency. In the more advanced countries this question can be viewed in a very different light where most of the problems mentioned above have either been overcome or reduced at least to a considerable extent so that psychiatric illness along with degenerative dissorders has assumed the pre-eminent position. It is said that approximately 10% of a population in any one year are likely to be handicapped by sort of psychiatric symptoms either mild or severe. Next comes the vexed question of the alleged increase in the incidence mental disorder, and its supposed connection with the artificial life of civilized society.

In the early days, the bulk of information about psychiatric disease was collected from the data relating to the inmates of the asylums for the insane. The development of psychiatry as a medical speciality in the 19th century was also related to the building of these institutions which performed a custodial function for t he more severely disturbed members of the community. The figures were kept mostly for administrative purposes. The investigators who dealt with them were the Medical Officers making use of the records of their own institutions. In England, the Registrar General' Office had a Public Health Officer, William Farr, who published a pamphlet on the statistics of English Lunatic Asylums as early as 1838 (i). Prichard (2) in 1835 also emphasized the different admission rates from urban and agricultural areas and Stark (3) in the 1850's, showed that the insane were drawn more often from the lower than from the middle and upper classes. Workers in the United States claimed a higher incidence of mental illness in the old settled areas than in the new pioneer states (4) other workers compared the figures in different years wondering whether there was an increase in the incidence of mental illness. Maudsley (5) studied the apparent increase in England between 1840 and 1870 concluding that it did not correspond to any real trend.

Even to the present day the controversy has not been unequivocally decided. Most studies that have been done recently are based on General Practices and they point to a high incidence of emotionally determined illness in the population although figures vary considerably. But Hopkins(6) gives 11.1% for "Formal Psychiatric Illness", an additional 31.7% for less clearly definable stress disorders, making a total of 42.8% of all patients seen by him. Shepherd (7) in a recent carefully conducted study based on several Practices in the London area arrived at the conclusion that the incidence of emotional illness in a population of nearly 15,000 at this time amounts to 140 per 1,000 or 14%. The majority of consultations were for Psychoneuroses (88.5 per 1,000) and "Psychiatric associated conditions" (48.6 per 1,000), a category used to include psychosomatic conditions (29.9 per 1,000), organic illness with spychiatric overlay (15.0 per 1,000), psycho social problems (7.5 per 1,000) Shepherd also point out that patient emotionally determined illnesses make greater and more frequent demands on their General Practitioners than the rest of their practice population. About adult in 7 consulted his or her doctor at least once during the survey year with symptoms, wholly or in part of emotional origin. American findings give higher figures of 20% (8) there can therefore be no doubt that emotionally determined illnesses of all kinds constitute a large proportion of the work of general and of the medical profession as a whole.

Inspite of the undoubted importance of emptionally determined illness in all branches of medicine the training of doctors in the psycho-social aspects of medicineis gravely neglected. Both the British College of General Practitioners and the report of the Royal Commission on Medical Education have focused attention on the need to prepare doctors for the large amount of emotional illness they have to deal with. This training is, of course, specially important for the General Practioners who are the first to come into contact with patients needing help with emotional problems. But hospital specialists are equally

involved, although some of them may be less aware of the fact than others that those sent them for specialist opinion may have symptoms which require psychological understanding as well as physical investigations.

If we turn new to the actual content of teaching and its relationship to mental health and its promotion we find we must admit that the purpose of a medical school is to train doctors who have a broad perspective of the whole field of medicine and to allow those who have a special interest and the talent to go into a specialist field. It is essential therefore, that psychiatry which is of such profound importance both to the general practioner and of course, to the specialist himself should be presented by stimulating teachers who have the status and the prestige which equals that of their colleagues who are teaching other physical diseases.

It cannot be denied that the two basic disciplines from which one can enter Psychiatry are Neurology and the Behavioral Sciences. This should be taught in a dynamic rather than in a static fashion with a routine description of their stark and uninteresting anatomical structures and their fibre connections.

The importance of teaching Behavioral Sciences cannot be minimised because not only are they important to the lea rning of psychiatry but they are also essential to enable general practitioners from dealing with a number of their patients whose difficulties are psychological or social and even many specialists who fail to regard the patient as a person rather than the carrier of a certain disease. The Behavioral Sciences include Psychology, Sociology, Social Administration and Ecology.

The importance of Neurology to the study of Psychiatry cannot be over emphasized. It is a trusim to say that psychiatric illnesses have their seat in the brain and therefore it becomes inevitable that there should be many conditions which form the borderland between neurology and psychiatry. It is essential to know both and to be familiar with each. The present day miracle of psychopharmacology is really rooted in neurochemistry and neuropharmacology.

**Diagnostic Categories :**

Medical Students should see as many and varied examples of every diagnostic category which include major psychoses, mental retardation psychoneuroses, adult and child behaviour problems and addictions. It is essential that the undergraduate should be able to see the cases over an extended period of time, if necessary spread across intervals and also must be able to participate in the treatment of minor psychiatric disorders through the simple but very rewarding process of simple goal directed psychotherapy under supervision. This apart from being the best way of teaching dynamics gives the medical student a sense of participation in a way which he cannot get anywhere else.

Anxiety states which constitute a large proportion of the problems which the medical student will have to face when he goes into practice are very good examples to which he can be exposed under supervision physical conditions associated with anxieties like tension headaches, eneuresis and sexual maladjustments.

Exposure to the work of the almoner or the Psychiatric Social Worker is also likely to be of profound interest and great benefit to the medical student.

**The Dynamic Approach :**

The young medical student should know that mental disorders are the result of many forces from within the patient as well as his environment; the importance of genetics must be emphasized to him as well as the constitutional factors which are of profound importance. These dynamic interplay of factors provides the basis of the Psychodynamic approach. The fundamental contribution of this approach has been to draw attention to the psychological forces for the understanding of normal and abnormal, human behaviour and all psychiatric illnesses. This has been of great importance in view of the tendency to over emphasize the purely biological and environmental aspects of mental illness the word 'dynamic psychiatry' implies the continuous interaction of psychological and physical phenomena, and the influence of personality development in childhood as well as of social relationships on present day patterns of living and reacting. In the latter case, this concerns itself with the study of intrapsychic phenomenon including conscious and unconscious mental processes along with the interpersonal phenomena specially the doctor-patient relationship.

**Interviewing :**

The classic method of taking a medical history is from patients who suffer from a well-defined physical illness. Here he can be asked direct questions for which the patient is expected to give direct answers; the purpose being to get a clear description of physical symptoms to decide whether or not it fits into the picture of an organic illness. If the doctors' attention is oriented towards diagnosing physical disease, he is likely to ignore any statement made by the patient which leads him away from this purpose; consequently, the patient is discouraged from talking about certain topics even though they may be of importance to him. In this process a large and important area of the patients' illness and their personal reaction to it is likely to be ignored. The social history has also to be similarly limited to a few questions concerned with housing, finance, work, marital status and number of children.

The correct teachnique should be to teach medical students the very simple, yet, skilful art of Interviewing; the essentials of which are:—

(1) To learn to listen rather than to ask questions.

(2) To follow up the leads that the patients offer.

(3) To open up areas of enquiry the patient does not mention on his own accord.

(4) To use one's own emotional reaction to the patient's suffering and carefully controlled empathy to discover what sort of person he is, what he feels, and what he is going to do to others including his doctor.

(5) Of special importance is a need to find out in detail what was happening to the patient at the time his symptoms commenced, how he reacted to his life circumstances at that time and what they meant to him.

Such methods are, of course, used by many doctors with a natural gift; in fact professional interviewers can give very good examples of highly skilled interviews.

**Methods of Investigation :**

The most important investigation is a carefully obtained history but the medical student must also be exposed to a few of the investigations which are carried out as a routine in the better institutions. These include the physical tests like the Electro-Encephalogram, a good formal neurological examination, the simpler psychological tests like Raven's matrices and T.A.T.

It is also essential to teach the medical students the awareness of danger signals which include severe Depression and consequent risk of sucide.

**Classifications :**

It is essential that the medical student who is trained to think in terms of disease entities as separate water tight compartments because of his training and experience in other branches of medicine should be given a simple, under standable and logical method of classification of psychiatric illnesses. Against the background of the basic information that psychiattric conditions are usually not as water tight as those in other specialities from each other, the classification offered to him should be simple enough for him to assimilate.

**A consideration of Treatment :**

The aspect which is of greatest importance to patients and to practising doctors is the question of treatment. The method of treatment which is most closely associated with psychiatry, and the method in which the psychiatry presents the most original record and the most important contribution is that psychotherapy. The second mainstay of treatment, and this really represents some of the greatest advances of chemistry and pharmacology is the treatment with drugs and other forms of physical therapy. The third important method which is utilised in psychiatric treatment, although not as tangible and perhaps not as well understood is the environmental manipulation that is often required after the drug and physical treatment, and the establishment of a psychotherapeutic relationship, a degree of confidence and stability has been infused in the patient. It is in this area that the psychiatric social worker renders invaluable help.

The general aim of psychotherapy is to improve the patients capacity to deal with his own problems, to adjust himself to the conditions of his life and to make the best possible

use of his own emotional and intellectual resources. Psychotherapy essentially is a form treatment by communication which covers all forms of exchange of ideas, of discussion, of reasoning, of the effort to reach out into the the mind and world of sick person and by comprehending it to make it comprehensible to him, even enabling him to proceed in a different way and to modify his behaviour, along the lines governed by this new and wider understanding and by an increased confidence. This therefore, requires the confidence of the patient in the doctor and skilled understanding by the doctor of the patient's predicament. There are two broad categories into which psychotherapy can be divided. The first is the supportive kind and the second may be called the interpretive kind; it is the area of interpretive psychotherapy which is comprised of the various analytical approaches and within the analytical approaches many schools that have emerged out of the original contribution by Freud.

The supportive psychotherapy is usually simple, less ambitious in aim and easiest in execution, and therefore, more suitable for demonstration and practice to the medical student. It may include all the techniques of counselling direct, sensible and sympathetic advice, and other reassurance and encouragement. The supportive psychotherapy can play a great part in the out patient management of patients who might otherwise receive no help whatever from their doctors.

Interpretive psychotherapy is based upon the number of principles which were established largely by the early study of the Freudian School of psycho-analysis into the elements of human emotional development and the unconscious mental life. The first of these is that behaviour is prompted chiefly by emotional consideration, but understanding is necessary to modify and control such behaviour. The second is that a very significant proportion of human emotions, together with the action to which it leads is not accessible to personal introspection, since it is rooted in the areas of the mind which are below the surface of consciousness. The third principle which is derived from the first two is that any process which makes available to individual consciousness the true significance of these emotional conflicts and attentions which have been repressed will produce a heightened awareness and with it increased stability and emotional control. This in turn will lead not only to improved health but also to a more mature and developed personality.

The essential in the psychotherapeutic interview is an ample time for the patient to describe his difficulty without interruption from the doctor, and the doctor must be disposed to listen to them with unwavering patience and attention. This is a skill which is more easily acquired by example than by precept.

Also included in this group of psychotherapeutic techniques and employed as auxiliary method in any form of therapy are those methods which are designed to provide occupation to the patient in hospital or at home who are unable to carry on the normal work of their daily life. This type of activity is old occupational therapy and the secret lies in arousing the patient's interest and improving his morale by leading him to discover that there are useful things which is still done satisfactorily. It also provides contact and interest which although allied to the general purpose and direction of the medical treatment are separated from immediate supervision and administration of doctors and nurses, it is not simply a means of passing time but an active method of treatment with a profound psychological justification.

The use of drugs in the treatment of psychiatric disorders is too well-known to justify repitition here. Very briefly the two main groups of drugs which are used are tranquillizers and anti-depressants. There is a myriad variety of each of these, and new ones are being added every day with greater claims to afficacy and safety. What is essential for medical students to learn is the correct use of one or two of these drugs which he can master. It is imperative that he should be able to give the right dose for the right period of time before, abandoning the drug or his diagnosis or both.

Electro-Convulsive Therapy despite its alarming name, is one of the safest procedure is psychiatry, and indeed is the most effective form of treatment in depression. In its modified form the patient, who is on an empty stomach is given an intravenous injection of a short acting barbiturate and a short acting muscle relaxant which will paralyse the muscles for two to three minutes. As soon as a patient is asleep and relaxed which takes less than half a minute, a 90 volts current is

passed through electrodes placed on the temples. If it succeedes in firing a fit which will show slight twitching in the hands, feet, and in the face. In the case of a failure a further shock of slightly longer duration is given. After the fit the patient is given oxygen until he starts breathing normally. The whole process takes about 10 minutes and the patient has no recollection of the shock or the fit. Medical student can see this treatment being given and also observe the dramatic results which follow four or six treatment in somebody who is completely and utterly depressed.

After the successful use of drugs physical method of treatment and psychotherapy comes that turn of social measure which seek to alter the patients' environment. These include recommendation about condition about condition of work, provision of alternative employment, or housing, general advice to employers or the members of the family: all aimed at eliminating some of the social difficulties with which the patient has found himself unable to contend. These are the province of the trained psychiatric social worker acting under the general supervision of the doctor.

A medical students should see the various forms of treatment that have been described, and perhaps participate in some of them, and witness the team work which is necessary to achieve improvement in the patient, it emphasises to him the importance of the various emotional social and environmental factors in the development of psychiatric illness. It also emphasises to him the need to seek and enlist the co-operation of a number of agencies that are arranged in support of the patient. that have been described, and perhaps participate in some of them and witness the team work which is necessary to achieve improvement in the patient, it emphasises to him the importance of the various emotional social and environmental factors in the development of psychiatric illness. It also emphasises to him the need to seek and enlist the co-operation of a number of agencies that are arranged in support of the patient.

In conclusion, it may be said that: "The contribution of psychiatry to a fuller understanding of the principles and the practices of medicine was to underline a single fundamental truth: the ultimate wholeness and essential dignity of man. (10)"

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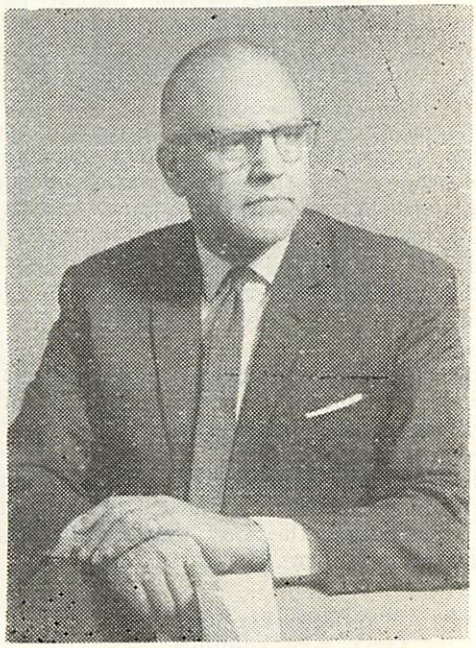
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# DOCTORS, DRUGS AND DRUG HOUSES-AN INSEPARABLE TRIO*



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TOOTHACHE or tummyache is as distressful in a dweller of caves as in a resident of modern palatial bungalows. The immediate reaction of the unhappy sufferer is to find a wiser man than himself to drive the ache away. Thus has come down through the ages the "Medicine Man" in the robes of a doctor.

Ever since the dawn of history, doctors have been the true and trusted friends of the suffering. They have not only relieved the load of human sorrow but have also dispelled the gloom of the sick chamber. They have even shared the pangs and sufferings of the sick so as to give solace and peace to them and those around. No wonder then that medicine has been the noblest among the worlds trades or professions.

A doctor, because of his ability to relieve human misery, has been looked upon as next to God. He has always held a privileged place in the society. He ushers man into the world at the time of his birth and he is there giving succor and comfort at the time of his death. In the emergencies and exigencies of life it is the doctor who is called on for help and advice. Humility, humaneness, service and sacrifice are the essential characteristics of his profession.What he knows of the most delicate, confidential, personal and family affairs of his patients is seldom known to anyone else in other professions. His responsibilities are enormous also. He has to act not only as the custodian of health but also as a valued friend working for the well-being of the people so as to help and guide them towards healthier and happier existence. He has to be well versed and uptodate with the art and science of medicine both in theory and practice. For him medicine is a constant study to the extent of specialization in different fields of medicine, surgery, pharmacology, pathology, etc.

It has not to be forgotten, however, that the doctor is a human being also. He has his basic needs, urges and short-comings common to all mankind. He has also the desire to live and see his progeny survive and flourish. The society owes him something in return for the good he renders; something which would help him survive and lead an honourable existence. His well-being in fact would be the well-being of the people or the community he serves. In the absence of proper appreci-

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ation of his services his frustration and dismay are understandable. My pointed reference is to the present day struggle of the young doctor in the country, for the acceptance of his demands which I am convinced are quite reasonable. One may disagree with their approach of the problem but not with the genuineness of their cause.

Man's survival on this planet has depended largely on fighting disease with drugs. It has been said of drugs that they sometimes cure, they often relieve and they always console. Sir William Osler declared that one of the striking differences between man and other primates was the fact that man enjoyed taking drugs. Talking of doctors without refering to drugs would, therefore, be meaningless. Drugs are the tools with which the doctor exploits his knowledge to allay tummyaches and toothaches and thus relieve human suffering. What are drugs? Drugs are chemical agents, other than food, which affect the functions of living protoplasm. The scope of this definition may be elaborated by calling them as any substance or mixture of substances used in the treatment, mitigation, prevention or diagnosis of disease or the restoration, correction or modification of organic functions. A more lively and spirited definition of drug, however, is an agent that may add years to the life of the patient but more so add life to his years.

The science of drugs is known as Pharmacology and it deals with any and every type of knowledge about drugs, their source, physico-chemical properties, actions, doses, dosage forms and their preparation, uses and toxic effects, in health and disease, in humans, animals and plants. No other branch of medicine has progressed and advanced so much during the last 1,000 years as Pharmacology alone during the last three decades. About 80% of the drugs available in the armamentarium of the doctor today were unknown and not available to him in the early forties. The discovery of new drugs during recent years has thus been so out-standing a contribution to the well-being of mankind, that they are today being held responsible for causing "Population Explosion". This impetus to Pharmacology was given to a large extent by the last world war which led not only to the discovery of new weapons for the destruction of mankind but in its wake evolved newer and better means of its preservation also.

Drugs may be obtained from natural or artificial sources. Natural sources are the vegetable, animal and mineral kingdoms and artificial source is the organic chemists' laboratory where he synthesizes from basic chemicals new compounds after more than one complicated chemical reactions. Crude drugs (vegetable or animal) owe their specific actions to their containing certain potent chemicals in them called their active principles. The common example is of morphine in the latex opium, caffeine in tea leaves, nicotine in tobacco leaf, quinine in coinchona bark, thyroxine in thyroid gland, etc. The quantity of active principle varies from part to part, time to time and source to source of the crude drugs and hence the importance of their proper collection and storage. These active principles have been extensively studied chemically and pharmacologically and the doctors now prefer to use them instead of crude drugs for prompt and sure action. Most of these active principles are today being manufactured synthetically thus making obsolete their natural sources. The synthetic product is almost as good as the natural, chemically and pharmacologically.

Drugs act by coming in contact with living cells directly or indirectly but the exact manner how they produce their effects in the body is not properly understood. Often they show a selective action by acting on one type of cells in preference to others. Drugs do not create new functions in the body; they merely modify those already there. Drugs can act:

(1) as substitutes for something deficient in the body, e.g., vitamins,

(2) as anti-infectives to kill or curb infection with foreign invaders, e.g., penicillin,

(3) as depressants, e.g., alcohol, and

(4) as stimulants, e.g., caffeine.

Every new drug has to undergo extensive critical investigations by groups of experts specializing in different medical and allied sciences before being declared fit for use by the doctor. A general plan of investigation is drawn up and the study is carried out first in the laboratory on different species of animals like frogs, mice, rats, guinae pigs, rabbits, cats, dogs, etc., and then if indicated, in clinics on humans under controlled conditions, depending upon the nature of the

ingredients and intended uses. Curiously human response to drugs more closely resembles that seen in the dog rather than the monkey. The main purpose of such a study is a thorough understanding of the usefulness and toxic properties of the drug. The new remedy, to be acceptable, must show its superiority over the remedy already available in being more effective, less toxic, more economic/, more pleasant in administration, etc. The true efficacy of the new remedy vis-a-vis its toxicity, however, is revealed only after it has been put to use and has withstood the test of time.

Most drugs alleviate symptoms, a few cure, but all effective drugs can be harmful. Even water, sugar and common salt may be harmful. A drug claimed to be harmless is likely to be ineffective also. As such drugs should be used under medical advice only. Even then they are known to produce Iatrogenic Disease that is disease induced by the doctor. Being a harmful item there should be proper restrictions and control at Government level on the manufacture, advertisement, sale to public of drugs of any and every kind. Unfortunately such a control in actual practice is far from effective in our country. As a result almost any and every type of drug can be had by the consumer without the doctors' prescription. Such a practice is highly dangerous because of its tendency to promote mis-use of drugs by way of self-medication leading to drug habituation/addiction, drug resistance/poisoning. etc. The remedy lies in more strict Governmental control in practice so that no drug except household remedies can be had from the drug stores without the doctors' prescription.

As has already been stated drugs are scientific tools in the hands of the doctor. They are not the panacea that the advertisements, particularly in the lay press, too often claim. For their successful use they must be genuine and not spurious, potent and not inert, effective and not substandard. In other words they must come up to certain specifications of quality and quantity as described by the manufacturer on their lables. The doctor prescribes a drug with full confidence that it would work and produce the desired results. When the drug fails the doctors' embarrassment and danger to patient's health are understandable. There have been instances of vials of life-saving drugs containing nothing but common salt or material sub-standard in quality and quantity. The doctors' dilemma and patient's fate in such cases is obvious.

That brings us to the importance of drug houses whose responsibility it is to provide, genuine drugs of standard quality. This was also substantiated by pharmaceutical experts during the deliberations of the recently held W.H.O. seminar on the "Quality control of drugs" at Islamabad. The drug houses must ensure that each batch of pharmaceuticals manufactured by them is properly tested before being put on the market. Rather than have make-shift arrangements for drug testing, they should have the services of qualified pharmacists and facilities of well equipped quality control laboratories to handle this problem.

It has to be stressed with all the emphasis that persons engaged in the manufacture and sale of spurious and sub-standard drugs are criminals of a high order. In fact they are killers and deserve punishment accordingly. Unfortunately, as at present, punishment deterrent enough is not awarded to them under the law with the result that the menace continues uncurbed. For the complete eradication of this heinous crime the punishment has to be nothing short of examplary.

As at present drug houses in the country are mostly engaged in packaging imported raw material into different dosage forms which practice is not in the ultimate good or interest of the country. In view of the disturbed international situation and our uncertain relations with some of the neighbouring countries such a state of affairs should not be allowed to perpetuate for long. It is time that our drug houses realised the gravity of the situation and aimed at:

(1) making Pakistan self-sufficient and supporting for drugs of any and every description,

(2) bringing down the cost of drugs within the economic means of the masses.

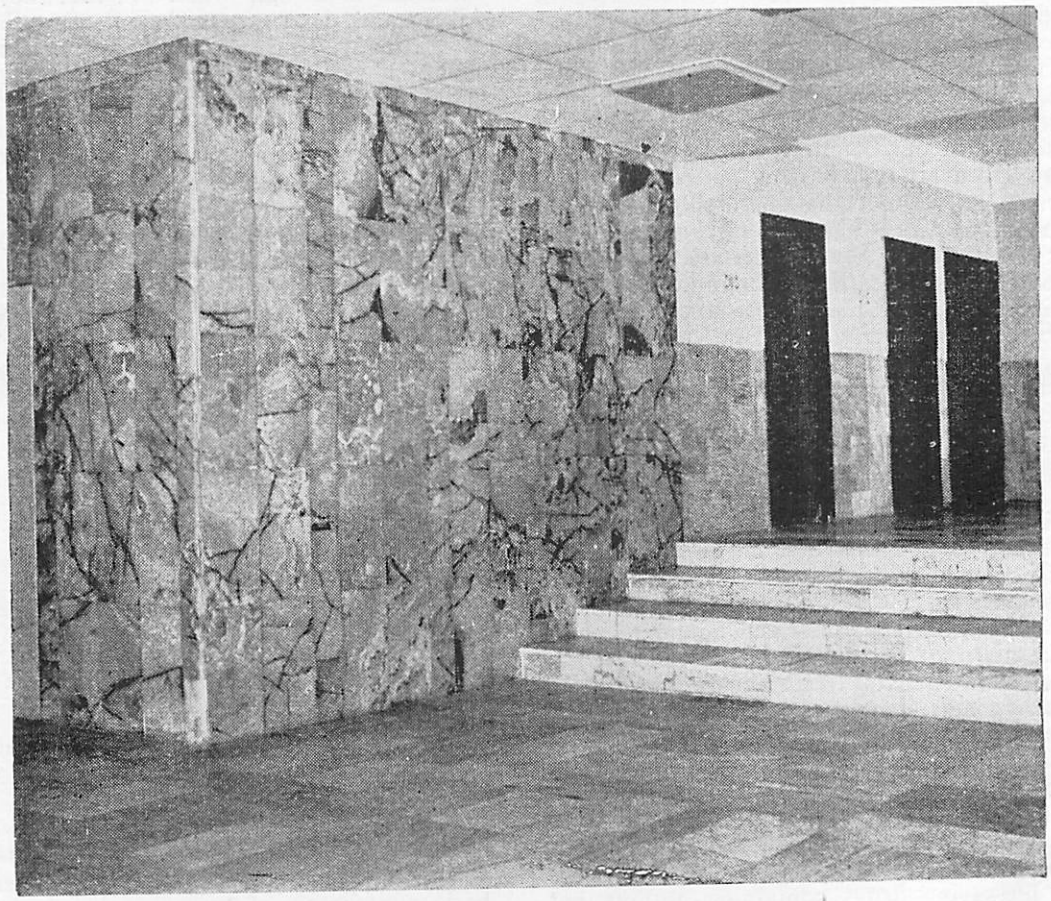
The achievement of this goal is not difficult provided there is national spirit and will to do so. For this purpose the drug houses will have to exploit the local reasources of drug material and scientific talent of which there is no dearth in the country. The matter of basic manufacture of drugs and their raw material should receive top-priority. Every drug

house should organize a drug research and development unit to find ways and means of developing new processes to improve production and dosage forms suited to our needs and within our economic means thus finding cheap indigenous substitutes for costly imported material. Third would obviously ensuret he availability of quality drugs at reasonable cost to the masses. The drug houses, though fully conscious of their responsibilities, have their own problems also. They want Government's protection of the drug industry, which unlike the chemical industry, is so far not forthcoming.

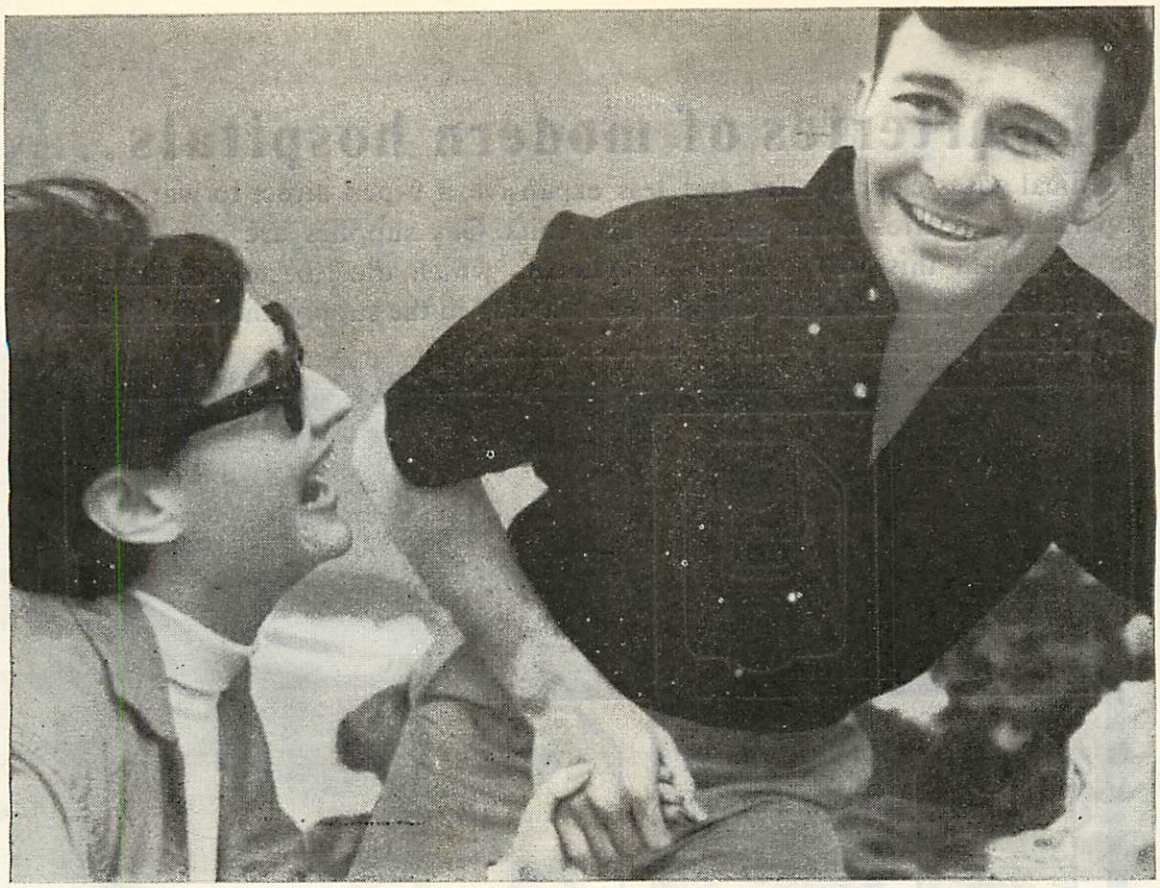
A word about the profession of pharmacy in the country on which depends the quality of drugs manufactured by our drug houses. The crying need of the hour is availability of adequate facilities for the proper education and training of pharmacists to man the pharmaceutical trade and industry. What a pity that the institutions imparting education in pharmacy in the country, as at present, are not only poorly staffed and equipped but also headed by those who do not possess even basic academic qualifications in pharmacy.

My friends, I have tried briefly to deal with the subject matter of 'Doctors, Drugs and Drug Houses.' Each one of these items has its own significance and importance though intimately linked with the other. Indeed they form an inseparable trio in safe guarding and promoting the day to day health of the nation.

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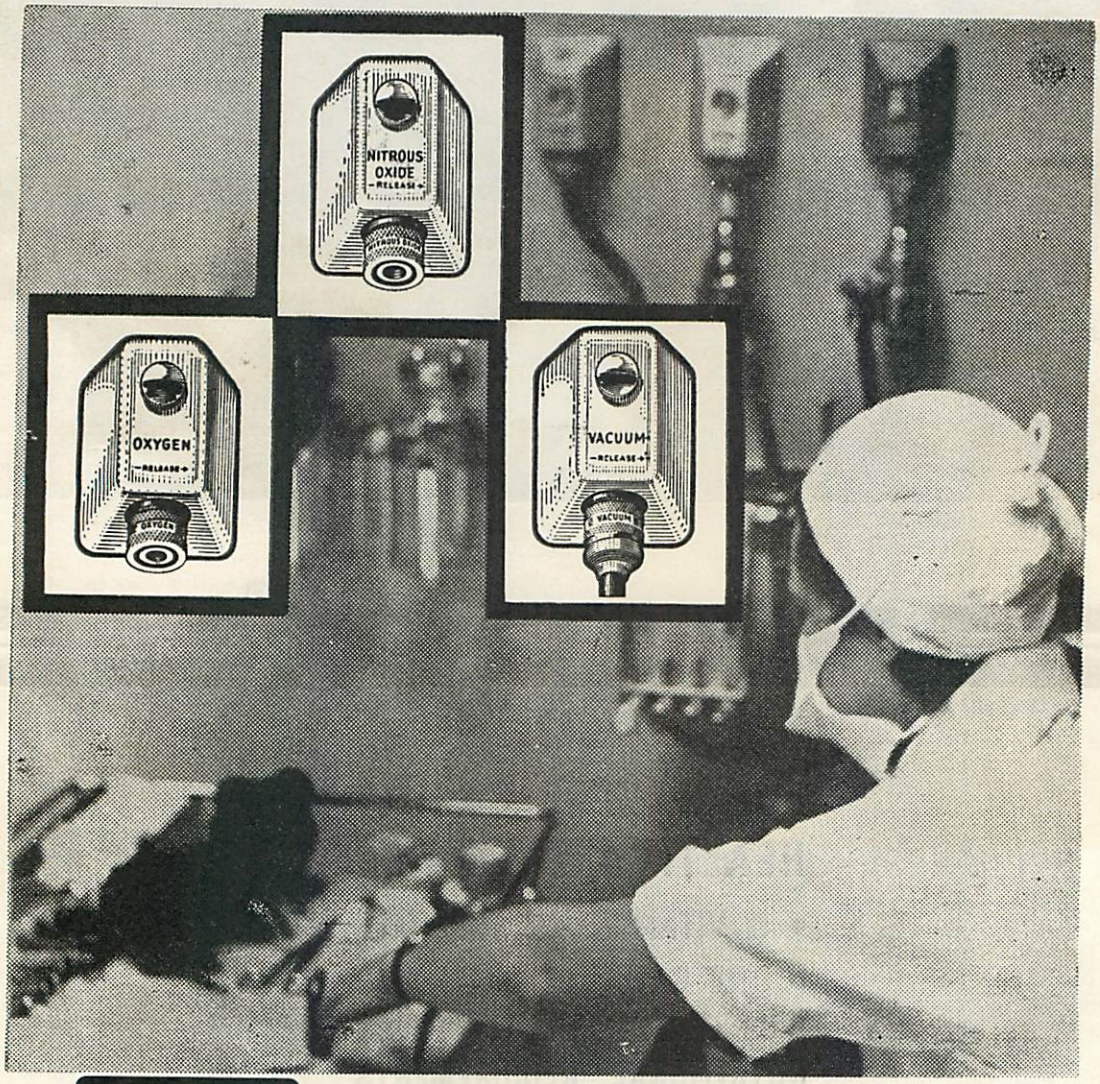
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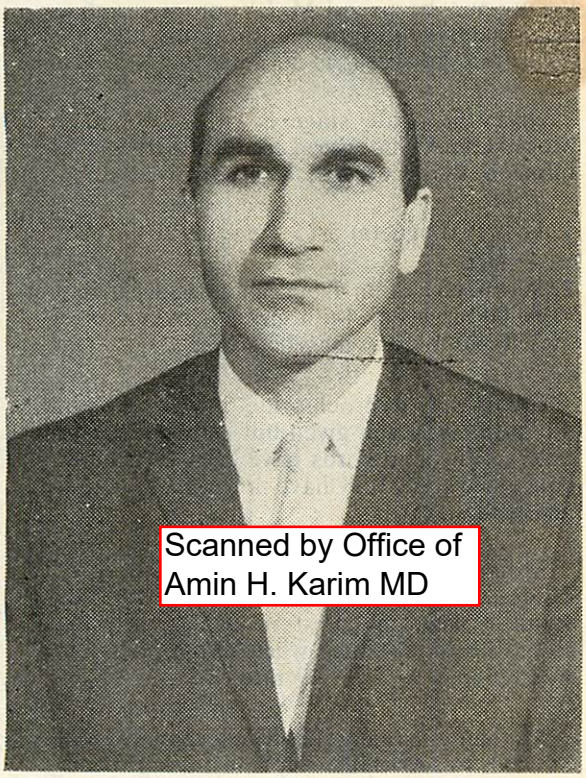
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# MANAGEMENT OF COMPLETE HEART BLOCK


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DR. M. RAZA-M.B.B.S., M.R.C.P., M.R.C.P.E., M.R.C.P.G, D.T.M. AND H.
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*Cardiovascular Research Unit Department of Cardiology Jinnah Postgraduate Medical Centre, Karachi-35.*

COMPLETE heart block is characterized by the interruption in the conducting pathway between the atria and ventricles. The commonest sites of lesion are both the bundle branches, the bundle of His, and the A.V. node, in that order. Consequent to complete heart block the atria and ventricles beat independently. The ventricular rate being 30-40/min and atrial 70-80/min.

**Aetiology :**

Common causes of complete heart block are :

1. Coronary Artery Disease—7% patient with myocardial infarction develop complete heart block. The heart block associated with inferior myocardial infarction is often transient where as that associated with anteroseptal myocardial infarction is permanent.

2. Hypertensive heart disease.

3. Rheumatic Heart Disease specially calcific aortic stenosis.

4. Syphilitic Heart Disease.

5. Congenital, in association with ventricular septal defect, Fallots tetralogy, common A.V. Canal and corrected transposition.

6. Acute infections like Rheumatic Fever, Diphtheria.

7. Post operative following repairs of V.S.D. A.V. Canal etc.

8. Drugs like digitalis, quinidine.

**Clinical Features :**

1. Incidence: The incidence of complete heart block is 50/million of population. In Pakistan for population of 120 million there are at least 6,000 cases of complete heart block each year.

2. Age: The patients are between 50—70 years.

3. Sex: It is more common in males than female.

The heart block may be asymptomatic,

this is specially true about the congenital variety where the heart rate is comparatively faster, or it may manifest as:

1. Adams stokes attack which occur in 55—70% cases of complete heart block. This is is characterized by attacks of syncope with or without convulsion with a slow pulse of less than 20/min. or cardiac arrest.

2. Congestive Cardiac Failure.

3. Poor cerebral perfusion with mental impairment. and confusion.

4. Poor systemic perfusion with symptoms of fatigue etc.

The average duration of life of patients with complete heart block is 2-3 years, it is greater in the rheumatic variety being 7 years. Untreated post operative complete heart block is a serious complication and carries 75% mortality.

**Diagnoses :**

The diagnosis can be made by history of syncopal attacks, clinical examination, which reveals a slow pulse; cannon waves in the neck and varying intensity of the first heart sound. It can be confirmed by electrocardiogram.

**Treatment :**

Until lately the drug treatment has been the sheet anchor of the therapy of complete heart block. With the advent of pacemakers, the management of complete heart block has been revolutionized.

**Drug Therapy :**

The following are the drugs which have been used most:

1. Ephedrine.
2. Adrenaline.
3. Isoprenaline.
4. Steroids.
5. Atropine.
6. Sodium Lactate.
7. Methamphetamine.
8. Diuretics.

**Adams Stocks Attacks :**

If the patient is seen during the attack, there is no pulse or B.P. External cardiac massage and mouth to mouth breathing is instituted immediately; E.C.G. strip is taken to determine whether the patient has ventricular fibrillation or cardiac asystole. In case of ventricular fibrillation heart is defibrillated by D.C. shock. In case of standstill, external cardiac massage should be continued and cardiac pacing should be done using an external pacemaker. If it is not available an infusion of isuprel 1 mg in 200 ml 5% dextrose is given a rate of 15—20 drops per minute (5-10 microgram/min). In emergency 0.1 mg isuprel may be given I.M. I.V. or adrenaline 0.5 mg may be given I.M. I.V. or intracardiac. With Isuprel infusion the aim is to keep the heart rate between 40-50/min.

Once the acute stage is over and Adam Stocks attacks have been controlled by Isuprel infusion, the recurrences can be prevented by:

1. Isuprel (linguets) 5-15 mg every 1-6 hours.

2. Sustained action Isoprenaline (Saventrine), 30-60 mg every 4-6 hours. A maximum of 250-340 mg/day may be given.

Ephedrine Hydrochioride gr.1/2, 1 every 4-6 hours has been given but isuprel is preferable. Glucocorticords have been used but in controlled trials they have not proved to be of any value.

Molar lactate has also fallen in disrepute. Diuretics are presumed to act by reducing serum potassium. Best results are reported to have been obtained when serum potassium was reduced to 3.5—3.9 meq/litre.

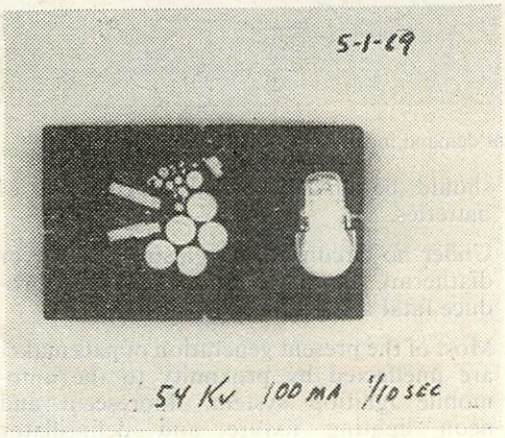
Methamphetamine 20-40 mg may be given SC, IM, IV. Atropine sulphate 1-2 mg IV may abolish heart block if it is due to vegal influences.

Heart failure associated with complete heart block is treated by with holding digitalis, administration of diuretics and by cardiac pacing.

The inefficacy of drug treatment is apparent from the fact that it carries 50% mortality in the first year. Whenever facilities are available for the implantation of pacemaker this is the treatment of choice for symptomatic complete heart block.

**Cardiac Pacemaker :**

Although Hyman in 1932 reported on the experimental use of artificial pacemaker it was in 1952 that Zoll successfully resuscitated 2 patients by the use of external pacemaker. With the development of open heart surgery post operative complete heart block became a dreaded complication. To tackle this, Weirich in 1957 reported on the use of myocardial electrode and external pacemaker. Lillehei in 1960 adopted the use of transvenous electrode and pacemaker. Since both with the myocardial and transvenous electrode, the pacemaker was placed externally sepsis along the track of the catheter was common. Chardack over came this problem by adopting the use of a totally implanted pacemaker. Since then a number of pacemakers have been available both of the fixed and demand type. The fixed rate pacemakerscarry the hazard of fatal arrhythmia. As a result, now demand pacemakers are recommended. Several makes are available from U.S.A. Europe and Japan. Although the life of battery is claimed to be 3 years, in practice, this has been found to be on average 21 months and many cardiologists replace a pacemaker every 2 years. The necessity of changing pacemaker unit every two years has resulted in the development in two directions. Nuclear powered pacemakers have been used experimentally in France and England. The use of Nickel Cadmium cells engergised by solar energy in the appollo space vehicle has provided another break through in the field of pacemaker. At the John Hopkin Hospital externally rechargeable pacemaker powered by Nickel Cadmium cells has been devised. From the initial trials of this pacemaker with which one the authors (M.R.) was associated it seems to hold promise.




Medtronic pacemaker (pt) externally rechargeable pacemaker (Johns Hospital) (rt.)

**Indications for temporary pacing:**

1. Complete heart block in patients with acute myocardial infarction carries 80% mortality. The prognosis is greatly improved by pacing which is achieved by inserting a transvenous endocardiac electrode catheter and connecting it to an external pacemaker.

2. Drug induced complete heart block is usually reversible. With holding the drug is usually sufficient but some authorities advise that a temporary pacing should be used in the management of iatroginic complete heart block.

3. In the management of certain arrhythmias.

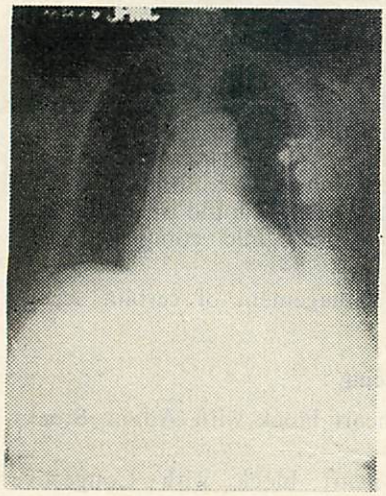
**Permanent Pacing :**

1. Complete heart block with Adam Stocks attack.
2. Complete heart block with Congestive Heart Failure.
3. Complete Heart Block with impaired cerebral perfusion and mental confusion.
4. For certain arrhythmais.

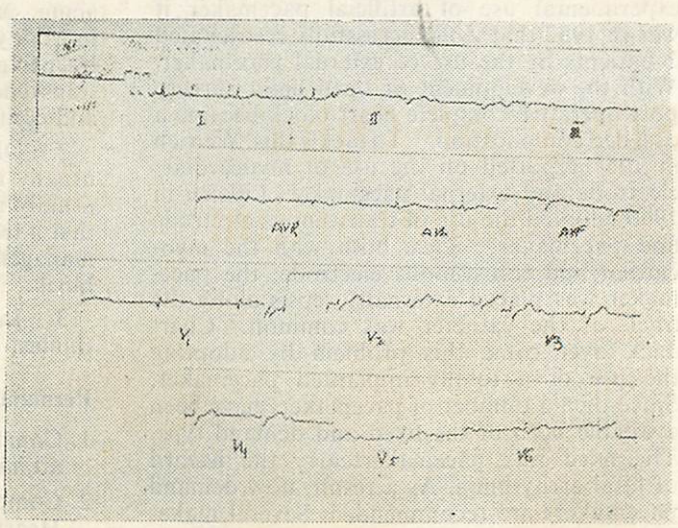
**Implantation of Internal Pacemaker :**

Of the several Pacemakers available the one made by Medtronic is being widely used. The demand type pulse generator is now considered to be a standard equipment. The implantation is relatively simple procedure but certain precautions are essential. A defibrillator should be available before starting the procedure. A 5% dextrose drip should be running. Drugs i.e. Isuprel, Xylocaine, Atropine should be available. Under local anaesthesia, cut down is done on the left cephilic vein and the catheter is introduced through it into the right atrium and across the tricuspid valve in the right ventricle. The electrode catheter is connected to an external pacemaker. The ideal position for the impaction of tip is determined by finding the threshold of pacing. This should be less than 1.5 ma. Having impacted the catheter tip, the terminals of the electrode catheter are secured to the pacemaker. The rate is usually set at 70/min. A subcutaneous pocket is made in which the pacemaker is implanted. After the procedure has been completed, P.A. & Lateral Radiographs are taken to make sure the catheter tip is in the right ventricle and not in the Coronary Sinus. Facilities have now been developed at the Department of Cardiology, Jinnah Postgraduate Medical Centre for the implantation of

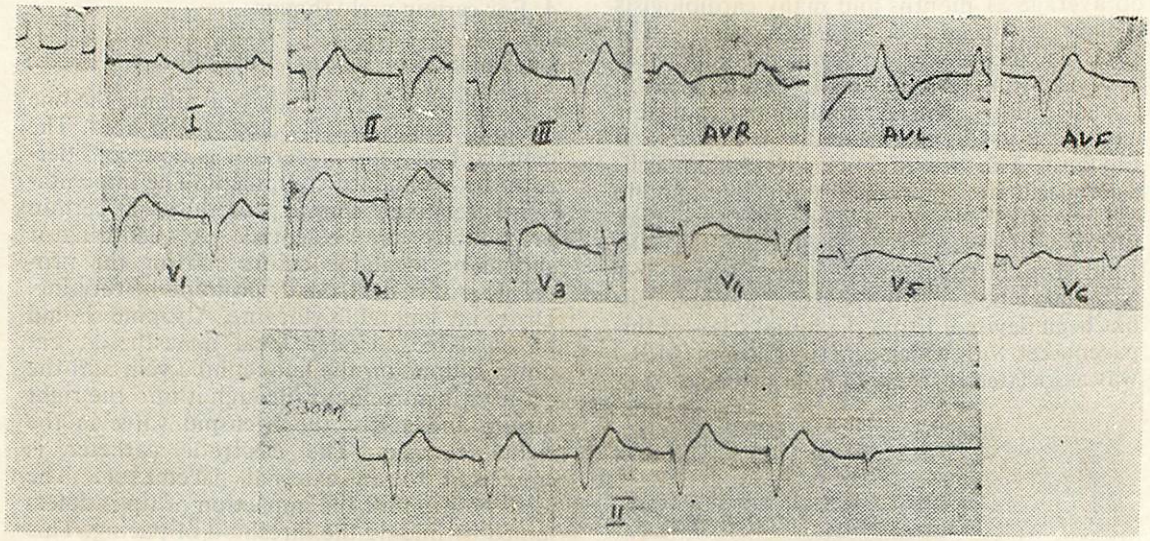
Pacemaker. The photograph shows the first pacemaker which was implanted at this Centre. The patient had complete heart block with Congestive Heart Failure. Adam Stockes attacks. The chest film and E.C.G. before and after pacing are also shown.



Pace maker & the endocardiac electrode catheter



E.C.G. showing 2 : 1 block (before implantation of pace maker)




E.C.G following implantation of permanent demand medtronic pace maker.

**After care of patient with pacemaker :**

The after care ismost important. A patient with internal implanted pacemaker should be instructed to count pulse daily or whenever the patient notices any irregularity. If the pulse rate varies more than 2 beat/minutes the patient should attend the pacemaker clinic.

1. Every patient with Pacemaker should be examined once a month and E.C.G. taken.
2. Every six month an X-ray of Pacemaker should be taken to evaluate the life of batteries.
3. Under no circumstances electric cautery or diathermy should be used as this may produce fatal arrhythmia.
4. Most of the present generation of pacemaker are uneffected by proximity to the automobile ignition system, fluorescent and neon lighting fixture and defibrillator shocks.

# Story of Ojha Sanatorium



MOHAMMAD IQBAL YAD

*M. B., B. S., (Pb), T. D. D.; (Wales), F. C. C. P.*

*Director, Ojha Sanatorium, Karachi*

OJHA Sanatorium was constructed by a charitable organisation before the Second World War. It was placed at the disposal of the Central Government (Karachi Administration) in 1949 and transferred to the control of the West Pakistan Government on 5th March, 1962, on the merger of Karachi institutions under the provisions of the Constitution of 1962.

Mr. Deepchand Tejhandas Ojha was a well-known philanthropist of Karachi. He belonged to the renowned family of Ojhas who were vaids by profession. Mr. Deepchand Ojha was also a political figure and a city father.

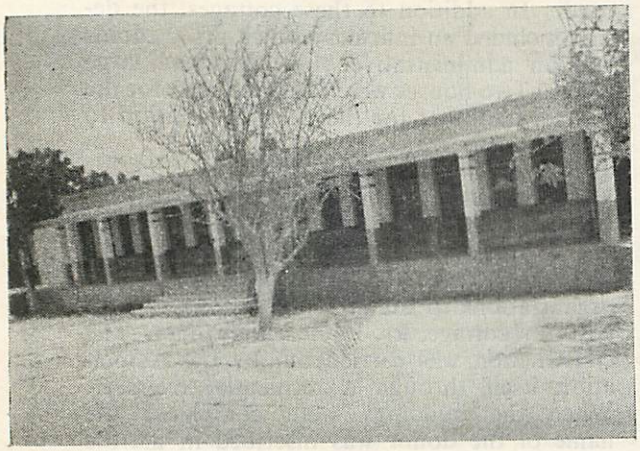
He died in 1928 probably of TB and left a bungalow, worth fifty thousand rupees at that time, in trust with his brother Mr. Sukhramdas Ojha, to be sold and the amount realised to be utilized for the relief of TB patients. With this initial donation, a voluntary organization by the name of Ayurvedic Tuberculosis Relief Association was founded with Mr. Jamshed Nusserwanji Mehta, the grand old man of Karachi as its first and the last President. This Association applied to the Government for donation of a plot of land for the construction of a Sanatorium for TB patients. After a good deal of survey the present site was selected and Government granted a piece of land measuring 127 acres in Deh Dozan and Safooran situated on the 12th mile of Sehwan Road. The site consists of irregular coral rocks indicating that at some time in the distant past it formed a sea-bed. This is also proved by the numerous small sea-shells found in the bajri on the surface and in the deep strata. It is now 144 feet above sea level.

Dr. Frimodt Moller, one of the pioneers of Tuberculosis work in India and the head of the well-known Mednapalli Sanatorium in Madras was invited to design the Sanatorium. According to the concepts of the time, this Sanatorium was designed in the form of isolated cottages placed 80 feet apart in symmetrical fashion on the two sides of a central road. In addition to these cottages, the design included an infirmary block of 20 rooms and an administrative block of three large rooms. Two houses were also built, one for the doctor, the other for the vaid, in addition to four two-room quarters and 30 single room quarter-block for the servants. A musafir-Khana consisting of five single room quarters was also proposed to be built but only two of the rooms were completed. The modus operandi was to approach individuals/ organizations to donate singly or jointly the cost of a cottage, Rs. 1,400 at that time. The construction was carried out by the Association itself through a residential overseer. When the buildings were completed the name of the donor was inscribed in marble

plaque and fixed prominently in the varanda of the cottage. In addition to these buildings



a recreation hall was donated and built by Mr. Doongersee Joshi, the Secretary of the Association, in memory of his wife, Poori-Bai. The block of four quarters was donated in memory of Dr. Kaikhushro Spencer a Parsi business man. The Association from its own funds constructed only the Administrative block, an infirmary block of 20 rooms and a set of 30 single room staff quarters. Sir



David Sassoon the business magnate of Poona not only donated one 110 volt D.C. Electric Generator but also constructed a power house for it and bore the cost of electric installation. The construction work was started in 1937 and completed in 1939. Provision was kept for 72 cottages, of which only 64 were constructed, eight of them double-roomed.



In 1932, the Association invited applications for the post of Medical Superintendent. Dr. A. K. Shariff, a young doctor of Bangalore applied for this post, but the appointment was then deferred. It is a coincidence that on migration to Pakistan Dr. A. K. Shariff was

the first Resident Physician appointed to this Sanatorium in 1951.



Before the Sanatorium could be constructed, the Second World War was declared. Malir Cantt: which was small military station nearby, rapidly expanded into a large army base. As Ojha Sanatorium was situated at a short distance of Malir Cantt; the army requisitioned the Sanatorium in 1939 and used the premises variously, as Prisoners of War Camp, Polish Refugee Camp, War Children Refugee Camp and American Army Station. The American Army constructed a large Army Mess (now lying un-serviceable) and a few pit latrines. When the Second World War was over in 1945, the Association applied for the de-requisitioning of the buildings, This request was granted, the buildings were handed back to the Ayuvedic Tuberculosis Relief Association, early in 1946 and the Sanatorium was opened to TB patients in October, 1946. The arrangement was that TB patients desirous of admission had to make request to the Manager. They were divided in two classes, the ordinary general ward patients who paid Rs. 30/- per month and the poor patients who paid Rs. 5/- p.m. At the time of admission every patient could choose treatment either by a doctor or by an Ayurved. Later, change from one system to the other was not allowed except by the permission of the Manager. Mr. Sukhramdas Ojha donated his services as an Honorary Manager and constructed a bungalow for himself at his own expenses for his periodic stay in the Sanatorium. The staff consisted of one Doctor, one Ayurved, two compounders (one for each system), one untrained Nurse, Sweepers, Chowkidars and Pump Driver. In the system then in force, a cottage was allotted to a patient who moved in along with his family or attendant. The cottages were used not only as hospital beds but also as housing accommodation where the patient's families also stayed, did their own cooking and used their own bed linen. Local catering contractors (one for Hindus and the other for Muslims) supplied meals at the patient's cost to those who did not want to do their own cooking. The over all supervising authority was the Ayurvedic Tuberculosis Relief Association with a Board of Trustees. Mr. Jamsheed Nussarwanji Mehta was its President, Mr. Doungersee Joshi, the Secretary.



This life of the hospital as a Sanatorium did not last more than 5 months. By March 1947, most of the staff being Hindus migrated to India. The Sanatorium was finally closed down in April, 1947 and remained so, till December, 1949. Ih 1947, most of the trustees and members of the Ayurvedic

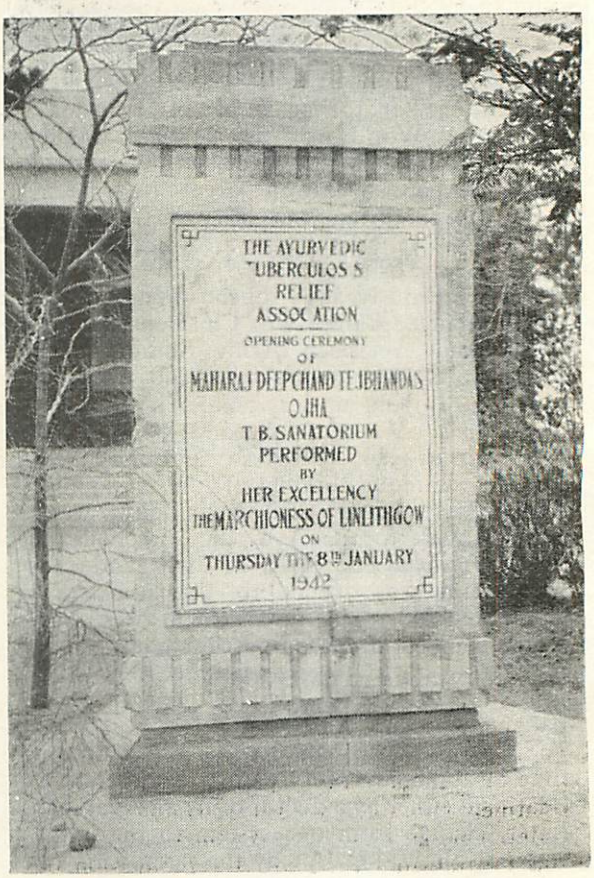
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Tuberculosis Relief Association a[illegible] to India and the Association became defunct Only three trustees remained in Pakistan namely Mr. Jamsheed Nussarwanji Mehta. Sardar A. K. Gabol and Mrs. Keval Ram D. S. Shahani- Only two of them are alive; Mr. Mehta died in the 1950's.

In 1949 Mr. Jamsheed Mehta approached Col. M. H. Shah, then Chief Medical Officer of Karachi, with a request to take over the *Sanatorium* on behalf of the Central Government Mr. Mehta informed Col. Shah that if the Health Ministry did not take over the Sanatorium, the buildings would be acquired by the Refugees and Rehabilitation Department for settlement purposes.

Mr. Mehta placed the Sanatorium at the disposal of the Chief Medical Officer, Karachi with only one condition that the premises would be used for the T.B. patients. Col. Shah found it difficult to take over the buildings because there was no budget provision and no doctor available for running The Sanatorlon. The present Director who was then the Medical Officer Incharge of T. B. Section of Jinnah Central Hospital. Karachi came to see the premises. He felt it a pity to allow the premises to be utilized for anything other than a T.B . Hospital when there was such a dearth of T. B. Hospital beds in the country. It was perhaps a case of love at first sight. He offered his services for appointment as the first Medical Officer Incharge of Ojha Sanatorium. He was entrusted with the responsibility of organising the institution afresh. Since then he has devoted his life time to the development of this institution. On 15th Dec. 1949, he moved into the Sanatorium alongwith a small contingent of staff consisting of a cook, a bearer, a driver and two nursing orderlies. And old Army truck was placed at his disposal. The conditions that he found at that time were most appalling. The whole place was shut up, dusty and desolate. The staff that was transferred by Mr. Mehta consisted only of four Chowkidars and a Pump Driver. On the first night when the quarters were opened for occupation, all of them were found infested with shakes, the staff kep t on killing snakes everynight through out that year and also during the following two summers. Over a hundred of the snakes killed were preserved and presented to the collection of late Dr. Fazal-e-Karim who was [illegible]ority on snakes and a Research Scholar. About half of the collection consisted of the poisonous varieties; of these, Cobras, Kraits and Vipers were indentified. Luckily no case of snake-bite occurred.

There was no equipment worth the name. The staff residental accommodation was not a fraction of the requirement. There was no kitchen, no cooking untencils, no bed limen, no ward furniture, no X-Ray Plant and no instruments. The whole area was devoid of any trees, plants or grassy plots except for two small patches of lawns, one in front of the administration block and the other in front of the recreation hall. There was a tablet on a pillar showing that this Sanatorium had been formally declared open by the Viceroy and Governor-General of India, Lord (and Lady) Linlithgow in 1942, but obviously this was a mere ceremony. Dr. Jamshed H. Wania, an Eye Specialist of Karachi who was then a boy of 11 or 12 presented a bouquet to Lady Linlithgow on that occasion.



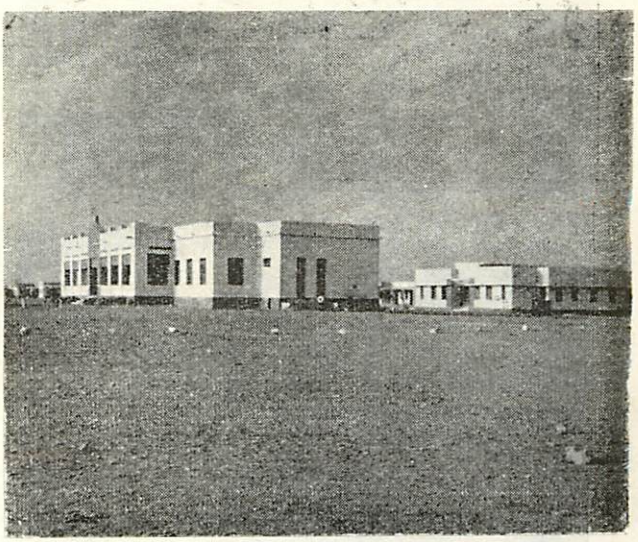
From this point onward begins the story of the development of Ojha Sanatorium into a first class hospital in the span of about 17 years. When the Chief Medical Officer, Karachi took over this institution, budget provision for the staff or the recurring expenditure did not exist. It was decided, therefore, to run this institution as T.B. Annexe of Jinnah Central Hospital administered by the Superintendent of that hospital. This Sanatorium functioned as an annexe till December, 1957 when it became an independent hospital.

The first batch of 20 male patients was transferred from Jinnah Central Hospital on 14th Feb. 1950, the second batch of 20 female patients on the 21st March.

Begum Liaquat Ali Khan visited this Sanatorium in 1950 and donated a radio set and books for the patients.

In 1951 Dr. A. K. Shariff was appointed as Resident Physician T. B. Section, Jinnah Central Hospital and as such Technical Officer Incharge of Ojha Sanatorium. He continued in this capacity till February, 1960 except for a brief spell during 1954-55 when Professor M. A. H.Siddiqui worked as Officer Incharge of this Sanatorium. Apart from the present Director who acted as Medical Officer Incharge of the Sanatorium from 1949 to 1952 and again from 1954 to 1955, Dr. S.A. Hussain who is now Officer Incharge of T.B. Centre in Rawalpindi also had a long spell as Medical Officer from 1952 to 1954 and from 1955 to 1957.

In the first two years, the bed capacity was slowly increased to about 100 beds. The first development activity took place during 1954-55. Under the dynamic leadership of Professor M. A. H. Siddiqui, some major deficiencies were made-up under the Social Uplift Scheme. Some 80 staff quarters, a Radiology and Theatre Block, Stores and Garages were constructed at a cost of Rs. 11 lakhs. Also



some surgical equipment was added. The electrical generator in the Sanatorium which provided 110 volts D.C. was replaced by two 220 A.C. volts Generators of 50 and 25 KW capacity. An X-Ray Plant donated



by UNICEF was installed. Major thoracic surgery was started by Prof. Siddiqui who performed about 35 thoracoplasty operations in this short period. The dry conservancy system was replaced by waterborne system so necessary for a T.B. hospital which deals with infectious material.

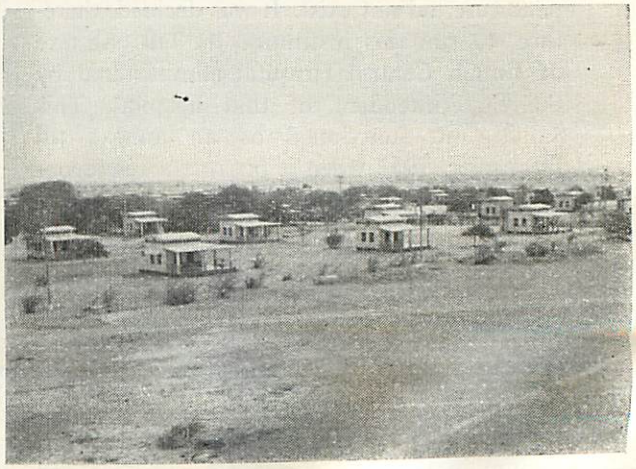


This Sanatorium expanded to its maximum capacity of 182 beds in December, 1957 (official bed strength: 200).

In 1957, this Sanatorium ceased to be a part of Jinnah Central Hospital and was made an independent hospital. Dr. A. K. Shariff, Director, T. B. Control and Training Centre. Karachi was also appointed the administrative head of this Sanatorium. This arrangement of one doctor being the head of an indoor T.B. Hospital (Ojha Sanatorium) and outdoor T.B. Clinic (T. B. Control and Training Centre) worked very well as it ensured continuity of supervision of the patients from outdoor to indoor and again from indoor to outdoor. Tuberculosis is a disease needing prolonged treatment, often over 2 years; hospital treatment is only one phase of the treatment.

Even in 1958, the conditions were far from satisfactory. The place was still without trees and plants and necessary greenery with the result that the patients and the staff were exposed to dust. Most of the roads were *kutcha*, essential equipment was lacking, staff inadequate, kitchen non-existent. One of the patient's cottage was converted into kitchen which was dirty, smokey and ill-lit. The patients were over crowded; although official bed strength was 200 beds, even with maximum over-crowding the number could never be increased beyond 190.

The patients were housed in cottages 80 feet apart, two patients in each cottage. This spread-out arrangement looks very pretty of first sight, giving an impression of spaciousness. But it is hard both on the patients and the Nursing Staff. Patients cannot be



nursed properly and the nurses tire out quickly moving from cottage to cottage. It also wastes their time. The design of the Sanatorium may have suited to the condition of the time when it was constructed and to the then prevailing system of turning the cottages into patients homes. But it defeats the very purpose of segregation and modern treatment. The Sanatorium also lacked all amenities of a modern hospital. It also lacked in housing accommodation, roads and paths and did not have essential accommodation for facilities like X-Ray Department, Operation Theatre, Recovery Rooms, Laboratory, Kitchen and Laundry. Government of Pakistan sanctioned a scheme in the Second Five Year Plan for the expansion and modernisation of the Sanatorium at a total cost of 47 lakh. The present Director was appointed as head of this institution on 31-8-1961, when a year had already passed since the start of the Second Five Year Plan period. He was charged with the responsibility of expenditious implementation of the scheme. Working at top speed, designs for the new integrated hospital block were prepared within one month during September 1961, tenders called in October 1961, work awarded in December 1961 and actual construction work started in April, 1962. The corner stone of the hospital block was laid by Mr. Abdul Kadir Sanjrani on

2-11-1962. The whole construction programme was completed in 1967 two years behind schedule. The building was formally declared open by the former Minister of Health, Bengum Zahida Khaliq-uz-Zzaman on 2nd September, 1967 and is in commission since then. The work initially started by the





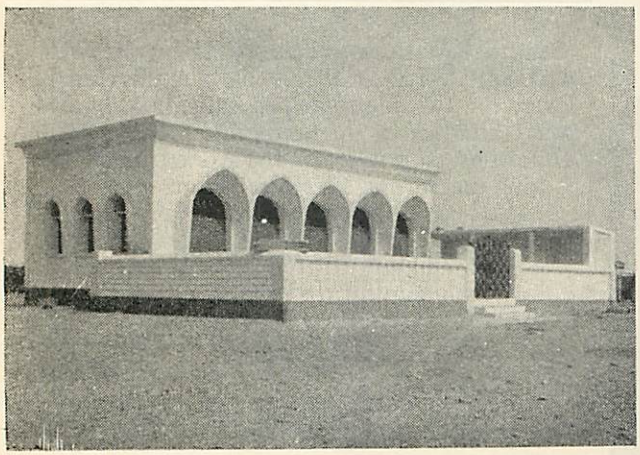



Central P.W.D., was taken over by the West Pakistan P.W.D. in 1963. Despite this change over, the twork progressed satisfactorily and was completed in minimum time. The following list will show the work carried out during the Second Five Year Plan.

| | | |
|---|---|---|
| 1. | Hospital Block for 150 bes with other requirements etc. .... .. | Rs. 20,55,000 |
| 2. | Kitchen for 360 beds | 1,14,630 |
| 3. | Incinerator .. | 3,250 |
| 4. | Electric sub-Station | 12,400 |
| 5. | Electric Lines from K.E.S.C. | 11,2,400 |
| 6. | Air-conditioning and Bed Lift | 1,40,000 |
| 7. | Water Supply and Sewage Scheme. .. | 4,50,000 |
| 8. | Sui Gas Installation | 50,000 |
| 9. | Roads and paths .. | 78,000 |
| 10. | Horticulture .. | 10,000 |
| 11. | Laundry Building and Central Sterilization .. | 95,000 |

| | | |
|---|---|---|
| 12. | Nurses, Hostel .. | 3,61,400 |
| 13. | Staff Quarters .. | 2,09,000 |
| 14. | Equipment .. (including Rs. 5,00,000 in Foreign Exchange) | 10,00,000 |

In addition to the construction of these buildings modern equipment has been procured at a total cost of Rs. 10 lakhs including 5 lakh in foreign exchange. One completion of this project in 1967, the number of beds in this Sanatorium increased to 350. The construction is designed to fulfil all needs of T.B. patients. This design is most modern and unique, a new venture in the field of hospital architecture. The new hospital also provides a set of most modern operation theatres, intensive post operative care department, well equipped Laboratory, X-Ray, Department, Steam Laundry and Central Sterilization Department, an automatic sputum destruction station and a spacious kitchen. In addition to the accommodation and other facilities for the hospital patients, a mosque has been



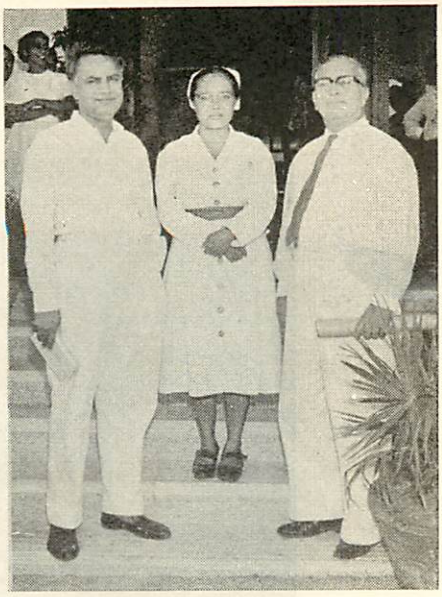
constructed by public donations at a cost of Rs. 26,000 A new nurses hostel, perhaps the best, the construction of new staff quarters housing facilities have improved, though the full requirements of housing and roads have yet to be met. In addition to the construction and equipment, the Government also sanctioned additional technical staff for proper utilization of the facilities now provided.

The following work included in the original schemes had to be dropped for want of funds:-

| | | Rs. |
|---|---|---|
| 1. | Shop No. 3 .. | 9,300 |
| 2. | Small Club and Tennis Court | 28,600 |
| 3. | Class Room .. | 15,066 |
| 4. | Site Office & Store for P.W.D. | 14,880 |
| 5. | Medical Stores .. | 96,140 |
| 6. | Under Ground Reservoir | 1,00,000 |
| 7. | Foot Paths and Roads | 18,500 |

Bed strength of the hospital has been raised by 150 beds. Most of the short-comings of the original Sanatorium have also been rectified. On the first sight it would appear that an expenditure of Rs. 47,00,000 for addition of 150 beds is on the high side. But it is not so. In fact, new accommodation for two hundred beds has been constructed and 38 bed, in the old hospital have been adjusted to over-come over-crowding. Moreover new construction also includes the share of facilities of old hospital beds which did not exist before, as for example, Kitchen, Laboratory Laundry, Nurses Mess, Dispensary, X-Ray Department and Medical Library, Committee Room, Physiotherapy Department, Sputum Sterilization etc.

Ojha Sanatorium is one of the largest tuberculosis hospitals in the country. It is also the best equipped one containing all the facilities for diagnosis and treatment of the chest diseases. It has on its staff qualified chest physicians, pathologist and anaesthetist, experienced nursing supervisor and a visiting chest surgeon. In addition to providing the diagnostic and treatment facilities it is well equipped for undertaking research. The diagnostic department consists of the most modern X-Ray equipment found anywhere in the country. There are facilities for tomography (multi cassette laminograhy) etc. The laboratory is equipped with respiratory physiological equipment for spiromentry and blood gas examination. Pathological laboratory has sections for microbiological, clinical pathology, biochemistry and histopathology. On the treatment side a well quipped chest

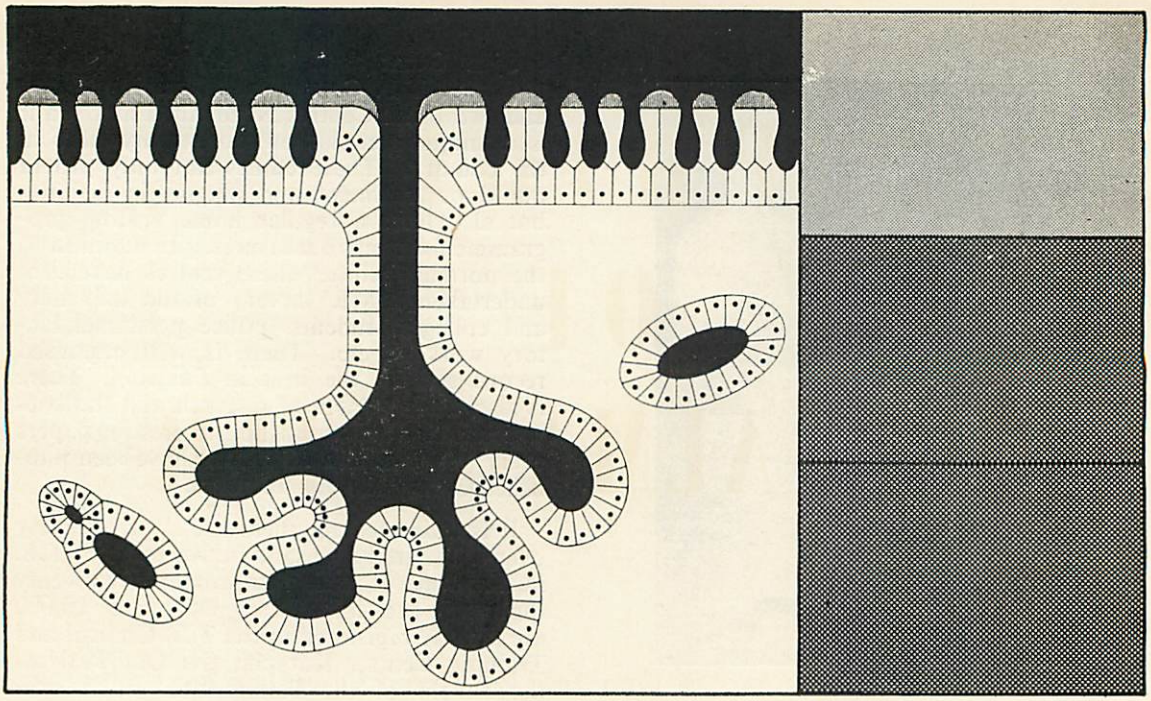


surgery unit has been provided with most modern equipment for anaesthesia; and intensive therapy unit facilities for continous monitoring of blood pressure, respiration, cardiac rate, electrocardiography, etc. is being added. There is a medical social work unit with arrangements for counselling, economic assistance,vecational training, diversinial therapy etc. etc. In addition to pulmonary tuberculosis, concomitant disease and complications are also treated. An automatic steam laundry and special kitchen have also been provided. There is an excellent nurses hostel the best in the country and a very good house surgeon hostel where separate bed rooms and attached bath are available.

Accommodation for doctors and nurses is more than adequate. There is a regular bus service from the town; hospital has also transportation of its own. This sanatorium therefore, is a place where patients can be diagnosed well and treated in most congenial atmosphere and where doctors and nurses can receive training in tuberculosis and chest diseases. This sanatorium is recognised for doctors who intend to take up training in tuberculosis and chest abroad.

Ojha Sanatorium together with its out patients. T.B. Control and Training Centre and two other Centres Nazimabad and Malir is a unique complex not found anywhere in the country. These clinics not only provid out door treatment and diagnostic facilities but also have a regular home visiting programme for control measures. In addition to the normal facilities these centres have also undertaken MMR survery of the university and colleges students, police personnel, factory workers, etc. There is well organised record system, the best in Pakistan. There is also a department of research and statistics which is regularly publishing interesting papers every year; nearly 30 papers have been published during the last 10 years.

It is estimated that there are approximately over a hundred thousand active cases of T.B. in Karachi, of which approximately twenty thousand are infectious. Of these 10,000 are already registered in the T.B. Control and Training Centre, Karachi, the Out Patients department of the Sanatorium. It is estimated that the minimum number of hospital beds for T.B. in Karachi should be apprexi-mately two thousand, that is, one per ten infectious cases. It is also estimated that approximately eight thousand patients die of T.B. every year in Karachi. At a very conservative estimated, one bed for 4 death, international standard 1 bed per death) the minimum requirements again works out to two thousand beds. If to this are added the requirements of beds for chest diseases other than tuberculosis, Karachi should have a minimum of 2,500 beds. At present the total number of beds available at Ojha Sanatorium and other hospitals in the city is approximately 500. There is, therefore, need for increasing the bed strength for T.B. and chest disease fine folds. The first phase of expansion of Ojha Sanatorium has been recently completed It is proposed to raised the bed strength to 500.. It has also been proposed to construct a 200 bedded chest hospital for factory workers. It is hoped that other hospitals will provide T.B. beds thus increasing T.B. beds by another 100 beds raising the bed strength earmarked for T.B. to one thousand. There is further scope for constructing additional hospitals for T.B. and chest diseases or vastly expanding the present ones.



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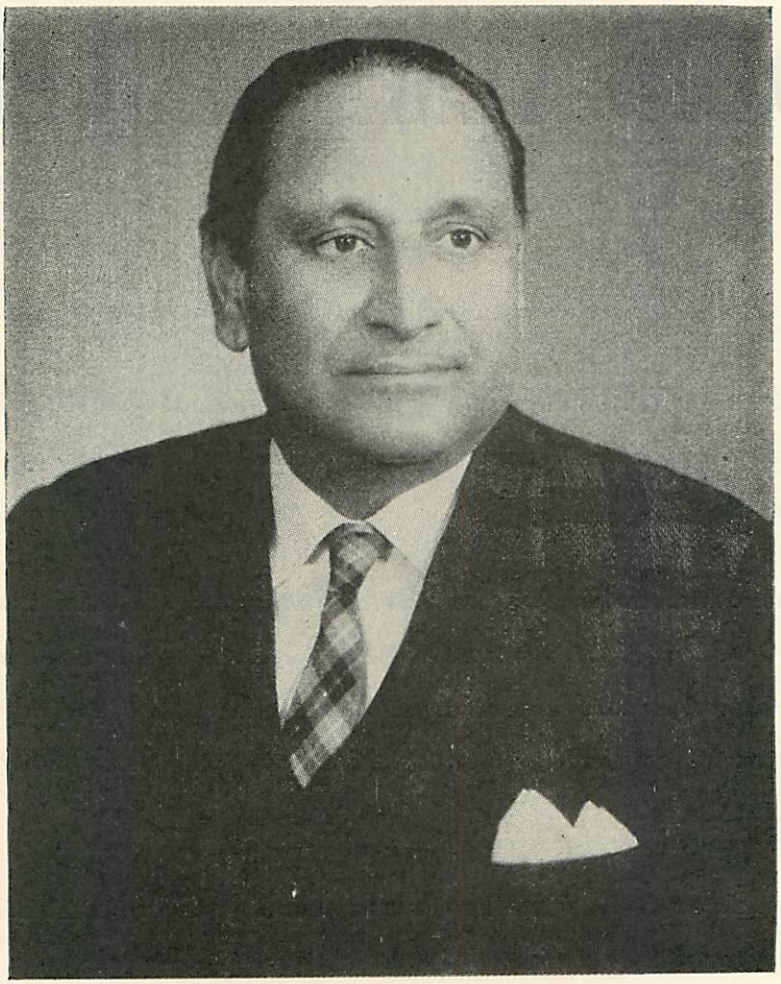
*"Doctor is a man of Science and Grace", and Dow Medical College is its site.*

*An institution is known by quality of scholars it produces. It is here where students get admitted, learn the art of this noble Profession, and hold the torch of knowledge and lit the whole world.*

*On the occassion of the Silver Jubilee Year, with great pride and pleasure I take this opportunity on behalf of the Chairman, the Magazine Committee, the Editorial Board and myself to welcome and introduce our new Honourable and respected Professors and Assistant Professors, most of them who were once the students of this mother institution, to our College and students.*

*I hope the biographical sketches of our respected staff will inspire the budding doctors to strive for greater achievements.*

# OUR NEW
# ADMINISTRATOR & PATRON



**Professor Abdul Wahid**

MS. (Anat), MS (Surg.); F.I.C.S.
Patron, Students' Union & Administrator,
Dow Medical College, Karachi.

# Welcome

TO welcome Professor Abdul Wahid amongst us as an Administrator of this College and consequently as patron of the Dow Medical College Students' Union, is a privilage and honour that knows no bond.

It is indeed our good fortune that we have in him a very able and efficient administrator who is well versed with the problems and difficulties of the students, and who always goes all out in trying to solve his students' interest.

His fartherly advise and amiable nature has won him love and respect from all corners of students committee.

We hope he shall continue to guide us in the years to come for, the efforts of which we extend to him our best wishes and sincere and humble co-operation.

This year we are extreemly fortunate to be the batch of the Silver Jubilee Year and above all to have Professor A. Wahid as our new Administrator of the College and subsequently patron of the Union.

# Professor Abdul Wahid

*M. S. (Surg.,) M. S. (Anat). F.I.C.S.*

*Chairman College Academic Council; Administrator, Dow Medical College, Patron, Dow Medical College Students' Union.*

PROFESSOR A. Wahid born in August 1921 in a village Sabrahad in the distric of Jaunpur, U.P. India. His early education was in a *Maktab* at home. Primary education from Centennil School Lucknow-Missionary School—High school and Intermediate from Lucknow Christian College in 1935.

During College life took part almost in all compulsory games. Represented the College "A" team in Basket Ball, Secured 1st Class Certificate in Physical Fitness i.e., 100 meters in 12 sec., High jump 4′x2″, Pull ups 13 and had 90% attendence in games. Was a debater and secured 1st position in Inter class debates. Appeared for Pre-Medical Examination in King George's Medical College Lucknow and was admitted in 1937 with 2 Muslims and 45 Hindus. Did his M.B.B.S. graduation in 1942, M.S. (Surgery) 1945; M.S. (Anatomy) 1946; F.I.C.S. 1952 and Training Certificate in Gross Anatomy U.S.A. 1958.

**Special Remarks:** Awarded Dr. Sahabzada Saiduzzafar Khan Anatomy Dissection Prize in 1938. Awarded Physiological Society Prize for Best Article read in 1938. Passed with Honour and obtained distinction in Anatomy & Physiology in April, 1939 Examination.

Awarded University Scholarship of Rs. 16/- p.m. for 1938-39.

Awarded Medal and certificate of Honour in Anatomy in 1939.

Awarded Medal and certificate of Honour in Physiology in 1939.

Awarded Dr. Sahabzada Saiduzzafar Khan Gold Medal in Anatomy in 1939.

Awarded First Prize of Books for 1st M.B.,B.S. in 1939.

Awarded University Scholarship of Rs. 20/- p.m. for 1939-40 and 1940-41.

Obtained Distinction in Pathology in—April, 1941.

Awarded Certificate of Honour in Pathology and Silver Medal in 1941.

Awarded 2nd Book Prize of Final M.B.B.S. Pt. I, Group B, in 1941.

**Subsequent Addition:** Awarded Pandit Suraj Narain Bahadur Gold Medal for obtaining highest aggregate marks in Physiology, Pathology and Medicine of the Professional Examinations, for the degree of M.B.,B.S.,for the year 1942. Awarded Hamid Gold Medal for obtaining highest total marks in Anatomy, Pathology and Surgery in the respective professional examinations for the Degree of M.B.,B.S., for 1942.

Awarded Cash Prize of Rs. 50/- instituted by Nasrullah Khan for the best Mussalman student in Clinical and Practical Medicine. Awarded Bronze Medal and Certificate in Ophthalmalogy in 1942. Awarded a Certificate of Honour in Obst, and Gynaecology in 1942. Passed M.S. Examination in Surgery in 1945. Passed M.S. Examination in Anatomy in 1946.

**Post-Graduate Work and Researches:** Thesis for M.S. Surgery on 'Urinary Calculi' in 1945. Abstracts published in Indian Journal of Surgery in September, 1947. Lucknow University.

Thesis for M.S. Anatomy on 'Comparative Morphology of Lumbo-Sacral Plexis' 1946, Lucknow University.

Urinary calculi-A, Experimental study-Indian Journal of Surgery in 1946 Lucknow University.

'Double Headed Sartorius' Medicus November, 1950. Dow Medical College, Karachi.

'A Case of Double Ulnar Artery - Pakistan Medical Journal, July, 1951.

'Variation of Coraco-Brachialis Muscle as observed in the Dow Medical College, Karachi. (Dissection Hall).

'Anomalies of Extensor Indicis Muscle' Pakistan Medical Journal September, 1951, Dow Medical College, Karachi.

'Anatomy for Medical Students-Dowlite-1958-59, Dow Medical College, Karachi.

Teaching of Anatomy in U.S.A. Dowlite, 1958-59.

'Applied Anatomy of the Lung' Paper read before the 5th Annual Conference of the Pakistan Tuberculosis Association Medicus-December, 1960. Teaching of Gross Anatomy-Paper published in the Dowlite in 1960.

Teaching of Anatomy under the new scheme, The one year's course' Dowlite 1964, Dow Medical College, Karachi.

Importance of Genetics in Medicine - Presidential address in Urdu at the 6th Annual Conference of the Scientific Society of Pakistan-December, 1964.

Anatomical Aspects of Glaucoma, paper read before the Ophthalmalogy Society of Pakistan in 1968 and published in their Annual Report.

**University Status:** Member of the Faculty of Medicine Lucknow University-1946-48. Member of the Academic Council Lucknow University 1946-48. Member of the Court Lucknow University, 1946-48. Member of the Academic Council Karachi University-1952 to upto-date. Member of the Faculty of Medicine Karachi University-1952 to upto-date. Member of the Senate Karachi University-1952 to upto the end. Member of Committee of Courses for M.B.,B.S. Karachi University-1952 to upto-date.

Member of the Committee of Courses for M.Sc., Basic Medical Sciences, Karachi University 1960 to upto-date.

Member of the Examination Committee-1960 to upto-date, Karachi University. Dean Faculty of Medicine since 1st October, 1969 University of Karachi.

**Appointments Held:** Junior and Senior House Surgeons to the K.G. Hospital, Lucknow University from 1st July, 1942 to 30th June, 1943.

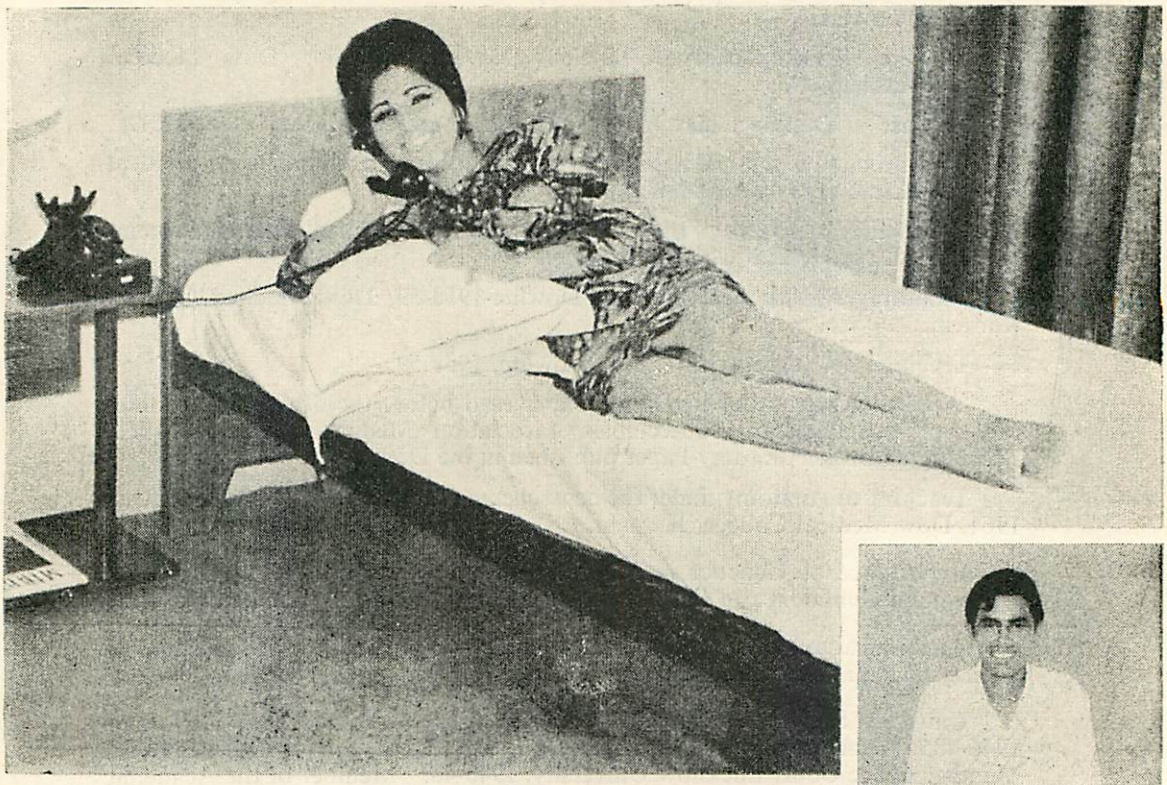
Lecturer (Grade A) in Anatomy since October, 1945 K.G. Medical College,

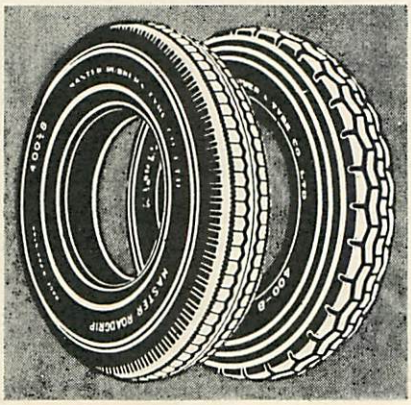
Officiating Reader in Anatomy since October, 1945 to December, 1948, K.G. Medical College, Lucknow.

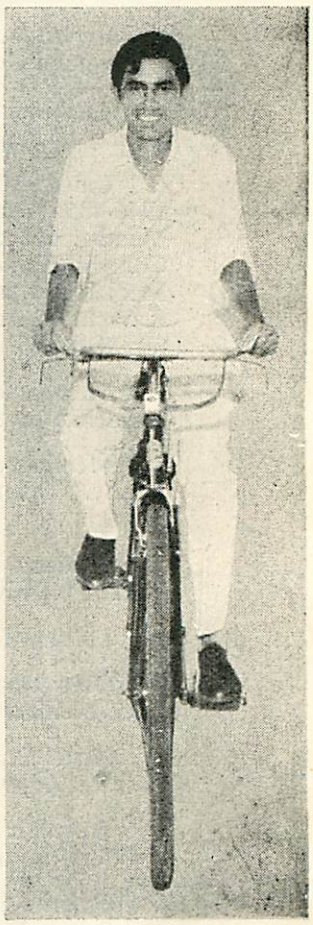
Asstt: Professor of Anatomy, Dow Medical College, Karachi, from 3rd January, 1949 to 26th January, 1949.

Professor of Anatomy, Dow Medical College, Karachi from 26th January, 1949 to upto-date.

Chairman, College Academic Council, Administrator Dow Medical College and Patron Dow Medical College Students' Union from 30th September 1969 to date.







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# Professor
# Dr. M. A. Qayyum

FRCS, DLO., DO., (*Eng.*)
FACS., FICS,

*Professor of Ear, Nose and Throat*
*Dow Medical College*
*and*
*Civil Hospital Karachi.*



Born at Jullunder (India) on 25th March 1926.

An alumnus of King Edward Medical College, Lahore, which he joined in 1943 & fromwhere, he graduated in June 1948,

He had a bright academic career and has been a keen Tennis player, was a member of K.E. Medical College Tennis team for 5 years and its captain in his final year. His interest in Photography has been sustained eversince and is still persued with considerable seriousness.

After graduation in 1948, worked for 2 Years as a House Surgeon in the departments of Eye & E.N.T. and Surgery, of Mayo Hospital, Lahore.

Proceeded to U.K. in 1950, where he worked at the Royal Moorfield Hospital and Royal National Ear, Nose and Throat Hospital, London and passed D.O. and D.L.O. Examinations in 1952 and 1954, from Royal College of Surgeons, England.

Subsequently worked for a year as a Registrar with the distinguished Ear, Nose & Throat Consultant Surgeon, Dr. I. Simson Hall, Passed his F.R.C.S. in 1956.

On his return to Pakistan in 1956, Dr. M.A. Qayyum was appointed as ASSOCIATE SURGEON (E.N.T.) & ASSOCIATE PROFESSOR OF SURGERY (E.N.T.). at the Civil Hospital & Dow Medical College, Karachi from 28th August 1956, with the Late Professor Shafiuddin Khan. This assignment lasted 13 Years.

In November 1969, on the demise of Prof. Safiuddin Khan, Dr. M. A. Qayyum was appointed to the post, and honoured with PROFESSORSHIP.

He was Elected F.I.C.S. in 1963 and honoured with F.A.C.S. in 1964.


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# Professor,

# M. M. Hasan

*M.B.,B.S.; D.M.O.S. (Lond.); F.R.C.S. (Lon.); F.C.P.S.*

*Professor of Opthalmology*

*Dow Medical College,*
*Civil Hospital Karachi.*

*Professor M.M. Hasan born in India in* 1924. *Having passed his B.Sc. in* 1940. *from Muslim University, Aligarh, did his graduation of M.B.,B.S., in* 1945. *with honours and securing first position in the University.*

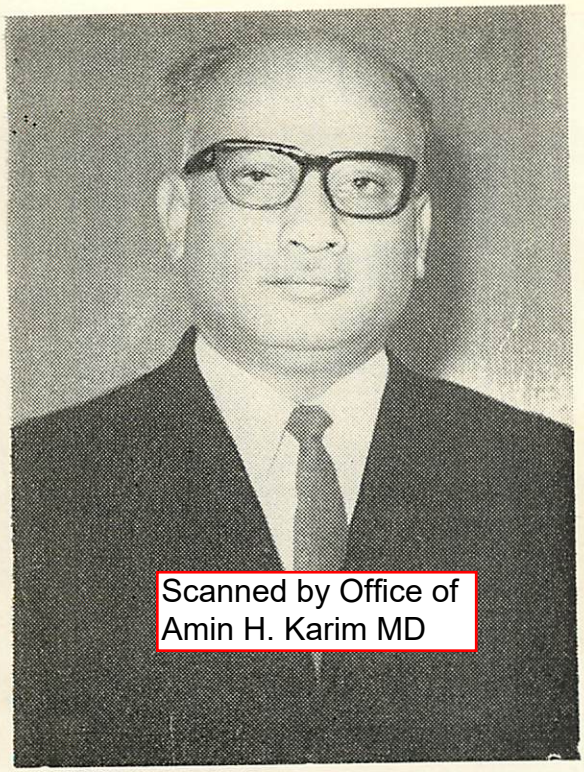
*In late* 1945 *Proceeded to England for his Postgraduation , from where he obtained his D.O.M.S. in* 1949 *from London, and later in* 1951 *his fellowhip, F.R.C.S. from Royal College of Surgeon London. While in England Prof. Hasan served as senior Clinical assistant in Moorfield Eye Hospital and subsequently was a consultant to Fulham Hospital, Battsoa Hospital and St. Audrew's Hospital.*

*Prof. Hasan takes the credit of being the first to obtain F.R.C.S. in opthalmology in Indo-Pakkistan sub-continent.*

*On return to Pakistan he was appointed in Jan.* 1954 *as Professor of optalmology in Liaquat Medical College, and subsequently being the chairman Academic Council and Administrator of the same college.*

*Prof. Hasan was a member of Medical Council of Pakistan representing the University Sind. He was honoured with F.C.P.S. in* 1960 *and has been founder member of the council of College of Physicians and Surgeons, Pakistan.*

*He was transfered in July* 1970 *to Dow Medical College, Civil Hospital Karachi, as Professor of opthalmology and Head of the department of Eye.*


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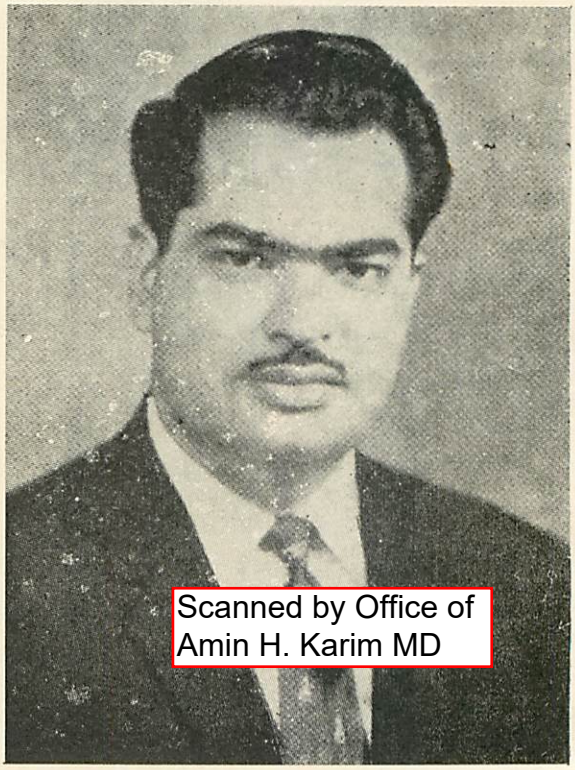
# Prof. Israr Husain Jafri

M.B.,B.S., D.L.O. (London), F.R.C.S. (Eng.)
*Prof. of E. N. T. Dow Medical College, Civil Hospital Karachi.*

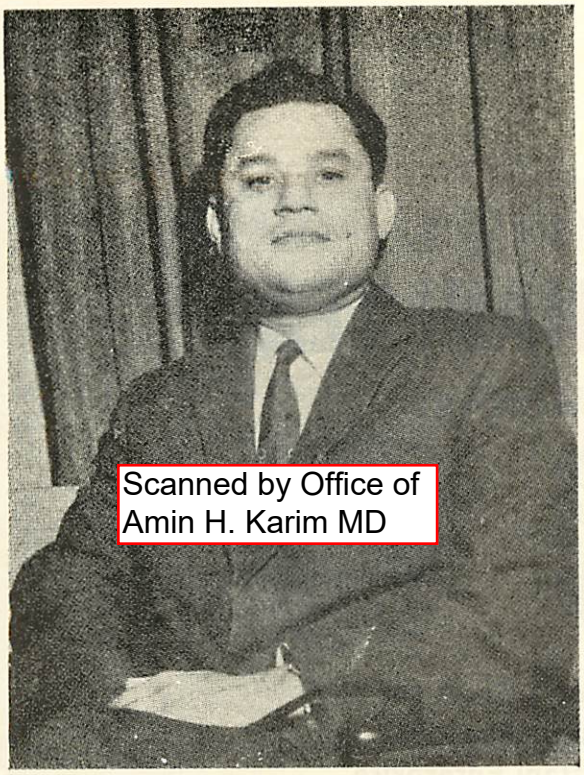
PROF. JAFRI did his early education from Agra University India; thereby, he joined the Agra Medical College. After completing his 1st professional M.B.B.S. he migrated to Pakistan and joined Dow Medical College Karachi from 2nd year M.B.,B.S., and graduated in 1951; securing 2nd position from Karachi University. Worked as a house-Surgeon in E.N.T. for 2 years and then as a registrar with late Prof. Shafiuddin . Had the previledge of being the first house surgeon and registrar in E.N.T. ward of Civil Hospital Karachi. Left for U.K. where he worked in various capacities from a house surgeon to a registrar. In 1956, he got his D.L.O. and in 1957 obtained his fellowship from the Royal College of Surgeons, England. On return from England in 1957, joined Liaqat Medical College as an Assitt. Prof. and in 1961, was selected as Prof. of E.N.T. In June 1970, transfered to Dow Medical College ,Civil Hospital, Karachi as senior Professor of E.N.T. Prof. Jafri has written about 14 papers which have been published in various journals. As a teacher he takes keen interest in his students. In L.M.C. he made a very good demonstration room and a museum. He intends to make similar things is Dow Medical College. As a sportsman, his favourite sports are hockey and cricket.

# Professor
# Naseer Shaikh

M.B.,B.S., F.R.C.S. (London)
*Surgical Unit-III, Civil Hospital Karachi.*


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BORN at Mirpurkhas in Sind 1934, early education from Naushero Feroz. Graduated from Dow Medical College in 1956. Took keen interest during college days in studedents welfare activities. did his early house job in J.C.H. in 1957 appointed as Anatomy Demonstrator. In late 1958 proceeded to England. Got his fellowship F.R.C.S. from London in 1961. While in London worked in Nuffield College of Surgical Sciences attached to the Royal College of Surgeons of England and was residents representative committee. In February 1962 appointed as Assistant Professor of Surgery in Liaquat Medical College and in 1963 transfered to Karachi. On retirement of Professor Siddique 1966 took over as Professor of Surgery. In 1968 was selected as Professor of Surgery by the then West Pakistan Public Service Commission on open competition. Attended in meeting of American college of Surgeons at Atlantic city U.S.A.. He was one of the members of the Pakistan deligation to West Germany. Beside being a pioneer in shunt Surgery (Portal Canal Shunt) in Civil Hospital, he is also the first Surgeon who conducted total exchange blood transfusion in cases of hepatic coma. Has always taken keen interest in teaching and demonstrating students by slides, museum specimen at the same time have particular interest in his words staff. In 1969 transfered to Hyderabad and in November 1970 transfered back to Karachi at Professor of Surgical III.


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## Professor
## Khwaja Muin Ahmed

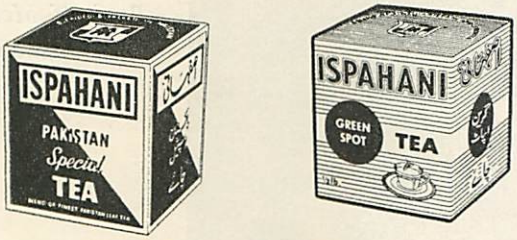
M.B.,B.S., M.R.C.P., (Edin)
D.T.M. & H. (Eng.)

*Prof. of Medicine, Medical Unit III.*
*Dow Medical College, Civil Hospital, Karachi.*

IN 1947, migrated from Nagpur Medical College, India to Dow Medical College from where he did his medical graduation in 1952; securing third position from University of Karachi, having highest marks in medicine. Did his house job in medical unit I under Late Prof. Major Hasan, and later as a registrar in Medical Unit II with Col. Malik. For 2 years, he worked with Late Prof. Paracha of Cardiology. In early 1957, on Volkart's foundation left for U.K. for his post graduation. Obtained his D.T.M. & H. from England and M.R.C.P. from Edinburgh. On return to Pakistan, he was appointed as chief Medical Officer of Burma Oil Company from 1959 to 1961. Joined Dow Medical College in 1961 as an Asstt Prof. of Medicine in Medical Unit I till 1969. Late that year, left for Hyderabad as Prof. of Medicine. On breakage of One Unit, he was transfered to Dow Medical College in July 1970 as Prof. of Medicine in Medical Unit III. Prof. Kh. Muin was active in Union Activities of College during his college days. He was elected as Class Representative in 4th year. He obtained a trophy and prizes in social activities Dr. Kh. Muin takes keen interest in Student activities and was chairman of the Gymkhana Committee. Has written several papers which have been printed in Medical Journals of P.M.A. and he has read Papers in Medical Conference at Dacca.

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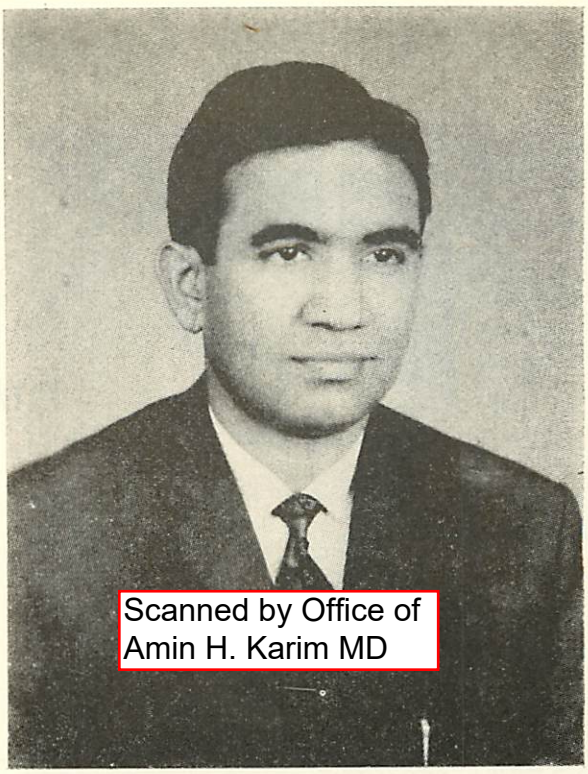


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THAVER

# Dr. Abdul Gaffar Billoo

*Asstt. Professor of Paediatrics*
*Dow Medical College, Civil Hospital, Karachi.*



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DR. GAFFAR, a domicle of Karachi, born on 14th Jan, 1937, did his early education from Karachi. Did his M.B.,B.S. graduation from Dow Medical College in 1959.

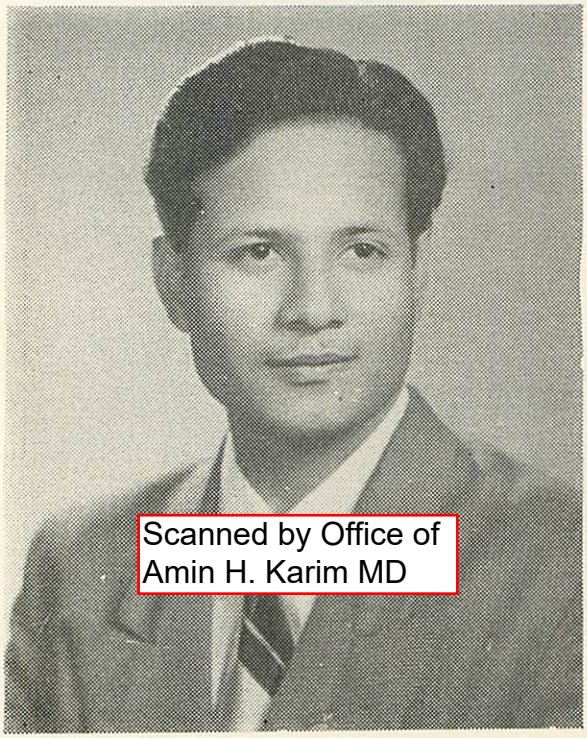
In mid 1961 left for abroad for his post graduation. In Feb. 1962, he obtained his D.T.M. & H. from London and same year in June D.C.H. from Glassgow, Later in Oct., 1964 he obtained his M.R.C.P. from Edinburgh and Glassgow.

DR. A. G. Billoo immediately after his graduation in 1959 joined J.C.H. as resident house-physician in children's ward under Prof. Hamid Ali Khan.

While in U. K. he had a full-time course in Tropical Medicine at London School of Tropical Medicine and Hygiene.

In April 1962 he did his post graduate training in Paediatrics at Royal Hospital for sick children in Glassgow under Prof. Hutchison. In early 1963, was appointed a Resident House Officer in Medicines Gateside Hospital, Grenock, U.K., and same year in August, till March 1965 was appointed as Registrar in Paediatrics at Seafield Sick children Hospital, Ayeshire, U.K.

On return to Pakistan in 1965, he joined the cardiovascular diseases Research Project at J.P.M.C. as a Physician under Lt. Col. Shaukat Ali Syed. From Sept, 1967—Dec. 1970, he was a consultant Paeditarician and Head of Deptt. of Paediatrics, Holy Family Hospital, Karachi. Dr. Billoo joined Dow Medical College, Civil Hospital, on 23rd Dec., 1969 as Assirt. Prof. of Paediatric. Dr. Abdul Gaffar Billoo has so far published four original papers on important Medical topics like cardiology, Bacteriology, and Paediatrics.


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## Dr. MALIK ALI SHEIKH

*M.B.,B.S., Ph. D. (Oxford) ;*
*M.R.C.P. (Glasg.),*
*M.R.C.P (E)*
*Rhodes Scholar*

DR. SHEIKH distinguishes himself for breaking the record in Medicine held at the Panjab University since 1919. He won Distinction in Medicine in the final M.B.,B.S. and was awarded Dr. Rahim Khan's Gold Medal for standing first in Panjab University. Was awarded Harper-Nelson-Raghbir Singh Memorial Gold Medal for being the most Distinguished Medical Graduate for the year 1954-55. Sutherland's Memorial Gold Medal was awarded to him for standing first in Medicine in the Panjab University. He won Col. Bakhle Memorial Silver Medal for standing first in Clinical Surgery in final M.B.,B.S., examination. During the undergraduate training a Silver Medal and a Government Merit Scholarship was awarded to him for standing first and securing Honours in Pharmacology. Besides, he scored Honours in Hygiene.

Dr. Sheikh became a Rhodes Scholar by winning a Rhodes Scholarship in 1957. He was associated for a year with late Col. Illahi Bakhsh as his House Physician. In 1957 Dr. Sheikh proceeded to Oxford on the invitation of Rhodes Trustees for research work with Professor L. J. Witts. Nuffield Professor of Clinical Medicine. While at Oxford he published a thesis on "Biological Assay of Intrinsic Factor in totally gastrectomised rats and megaloblastic anaemias in gastrointestinal diseases" for which he awarded the Degree of Ph. D. in 1960. The same year he was admitted to the Membership of the Royal College of Physicians of Glasgow and Edinburgh. Later he was associated with Dr. E. A. Wood at Brompton Hospital and Postgraduate Medical School of London.

On return to Pakistan in 1963 was appointed Assistant Professor of Medicine, Liaquat Medical College. In mid 1964 he was appointed as Head of the Department of Clinical Research with an international pharmaceutical company for whom he worked till mid 1970. He joined us as Assistant Professor of Medicine in December, 1970 with very wide experience and a brilliant carer.

Dr. Sheikh has been interested in blood diseases and during his stay abroad has gained tremendous experience under the able guidance of the Clinical Haematologist Professor L. J. Witts. Dr. Sheikh has so far published eleven papers on varied subjects like gastrointestinal antiseptics, absorption of vitamin B12, iron deficiency anaemia and cardiac glycosides. His recent addition has been the Civil Hospital Formulary which is now in the hands of all the medical personnel attached to this college and hospital.

Beside his brilliant medical carrier, he has taken keen interest in learning languages , he can speak, read and write fluently English, Urdu and French.

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# Dr. Iqtidar Hamid Bhatti

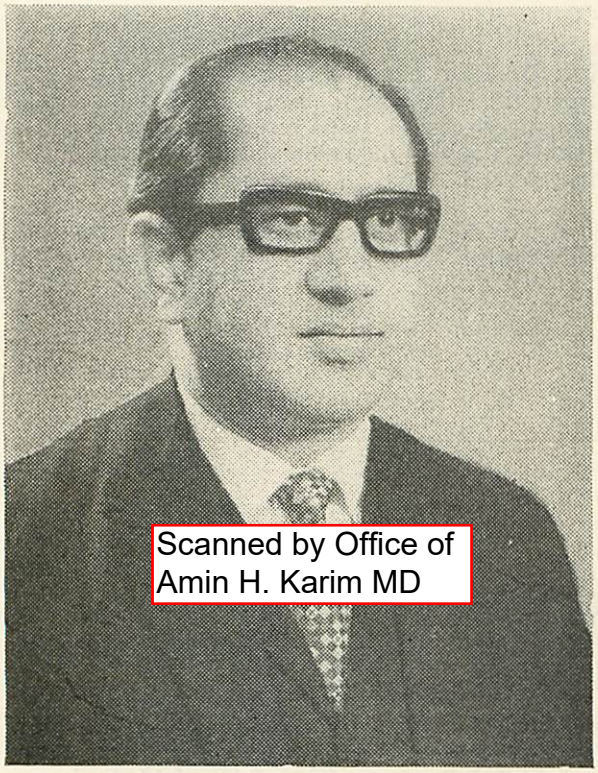
*M.B.,B.S., (Pb)., F.R.C.S. (Eng).*
*Assistant Professor of Neuro-Surgery,*
*Dow Medical College—Civil Hospital, Karachi.*

DR. I. H. Bhatti graduated M.B.,B.S., from King Edward Medical College in Lahore in 1959, with merits throughout his graduation.

In 1963 he left for U.K. for his Postgraduation from where he obtained his fellowship F.R.C.S. in Neuro-Surgery from the Royal College of Surgeons of England in early 1964.

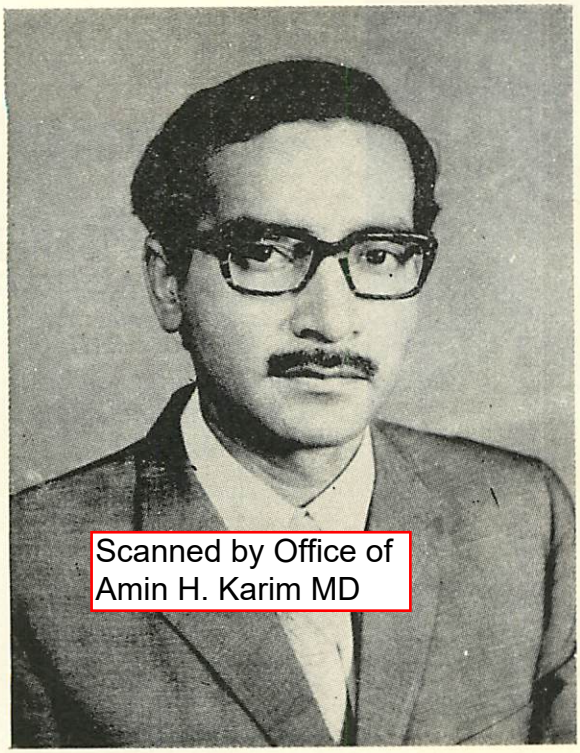
While in England Dr. Bhatti worked in Atkinson Morley's Hospital London and at the National Hospital of Nerveous diseases Queen's Square.

Dr. I. Hamid Bhatti joined this institution in early 1970 as Assistant Professor of Neuro-Survery.


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Dr. A. Majid Memon
M.R.C.O.G., F.R.C.S.;
*Asstt. Prof. Obstetrics and Gynaecology.*
*Dow Medical College, Civil Hospital Karachi.*

SURGEON Memon, born in Junagadh in 1935, migrated to Pakistan in 1948. After doing his early education in Hyderabad, Sind, he joined Liaqat Medical College, and graduated in M.B.,B.S. in 1959. Was honoured as the best graduate of the year having highest marks in Surgery and Gynaecology and Obstetrics. For his distinguished acedemic career in the Medical College he was awarded 4 gold medals. 4 silver medals and multiple merit certificates. In 1961, he left for abroad U.K. for his post graduates. On obtaining his fellow ship F.R.C.S., M.R.C.O.G. from England, returned to Pakistan in 1967. While in England, Surg. Memon had a chance to work with the renounced Gynaecologists and Obstetricians of U.K. Sir Hector Melenon, Mr. Leaslie Patrick F.R.C.O.G. Had a teaching appointed in Glassgow University where he taught the under and post graduate students. On return to Pakistan, he was posted as an Asstt. Prof. of Gynaecology and Obstetrics in King Edward Medical College. On breakage of one Unit. he was transfered to Dow Medical College in June, 1970. Surg. Majid Memon has published 5 original papers of personal experience in the speciality while 2 more are under publication. He was invited by the Mount Sinai Hospital of New York for training in Culdoscopy. Besides his vast knowledge of the subject, he has a keen iterest in photograpy, Lawn and Table Tennis.



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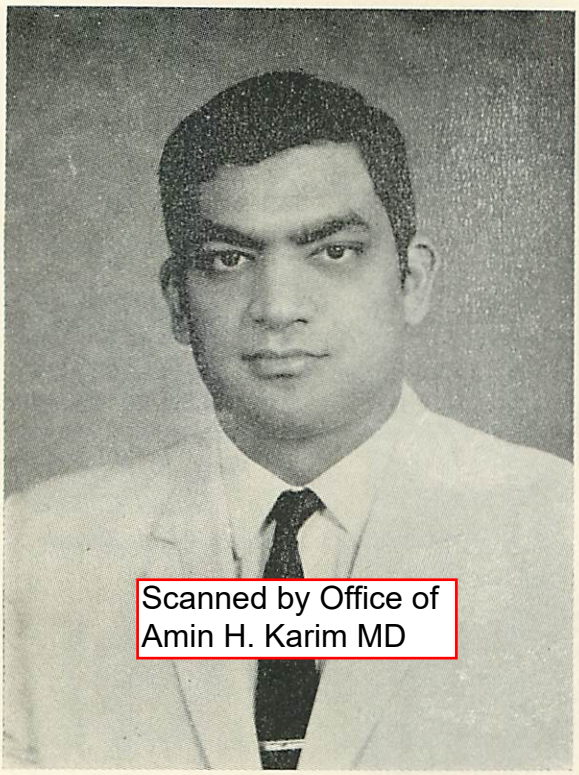
# DR. AKHTAR AHMED

*M.B.,B.S., M.R.C.P. (Ed.)*
*Asstt., Professor of Neurology*
*Dow Medical College,*
*Civil Hospital Karachi.*

BORN in 1935 at Hyderabad Daccan, from where he did his early education. On Partition he migrated over to Pakistan. After his matriculation from Lahore, came over to Karachi and did his Intermediate Science in 1952 from D.J. College. In 1957 he graduated his final M.B.B.S. from Karachi University, topping the list in Medicine and was honoured with Mistry Gold Medal for the best Dow Graduate. He did his early house job under Prof. Maj. Hasan.

In early 1958 Dr. A. Ahmed left for U.S.A. where after working for 18 months, left for U.K. from where he obtained his M.R.C.P. in July 1962. On return to Pakistan, joined P.N.S. Shifa as Medical Specialist. After one year of service he joined the Mental Retard Project in the Neuro Psychiatric Unite at J.P.M.C. In December 1970 joined Dow Medical College, Civil Hospital as Assistant Professor of Neurology.

Dr. A. Ahmed has been on a study tour to U.S.A. under experts exchange programe in 1965. He has published several original papers on various aspects of mental retardation. and neurology.



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Dr. Irshad Wahid
*M.B.,B.S., F.R.C.S. (Ed.)*
*Assistant Professor,*
*Surgical Unit II*
*Dow Medical College,*
*Civil Hospital, Karachi.*

BORN in 1941 in U.P. India. On partition migrated to Pakistan, and settled in Karachi where he did his both early education and his M.B.B.S. Graduation from Dow Medical College in 1964. After doing his House job under Prof. Siddiqui left for U.K. in 1965 for his fellowship. Obtained his F.R.C.S. in 1968 in one attempt from Edinburgh.

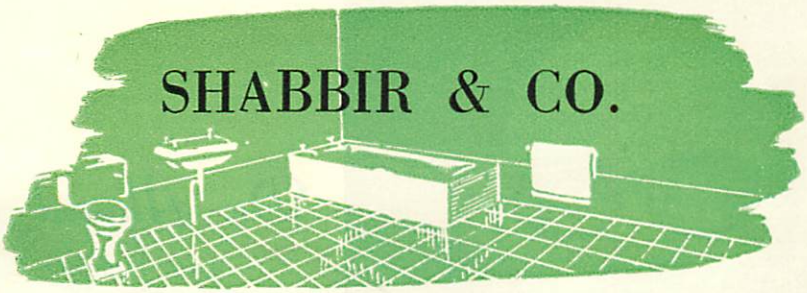
While in U.K. worked in various hospitals, notable of which are Hammersmith Hospital and Royal Postgraduate Medical School of London and also in Peripheral Vascular Surgery in the same hospital.

Immediately after his Postgraduation, returned to Pakistan and joined Civil Hospital as honorary registrar in Surgical Unit III. Later on became, Surgeon Incharge of the Surgical Unit at K.M.C. General Hospital, till before being appointed to Assistant Professor of Surgery, Dow Medical College, Civil Hospital in December 1970.

He presented various papers in Hammersmith Hospital on enternal Surgery.

Dr. I. Wahid had a brilliant medical career, during his under graduation he was a position holder throughout and winner of Gold Medal in his final M.B.B.S. and had distinction in Medicine. Beside his brilliant career he was a good Sportsman and was in the college Table Tennis team, and has won several prizes in this sport.

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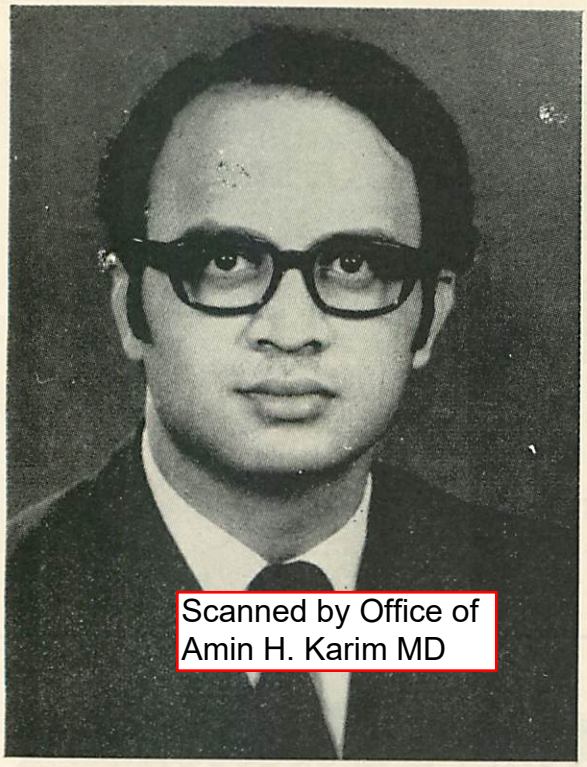
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# Dr. Ahmed Hasan

*Asstt. Professor E. N. T.*
*Dow Medical College,*
*Civil Hospital Karachi.*

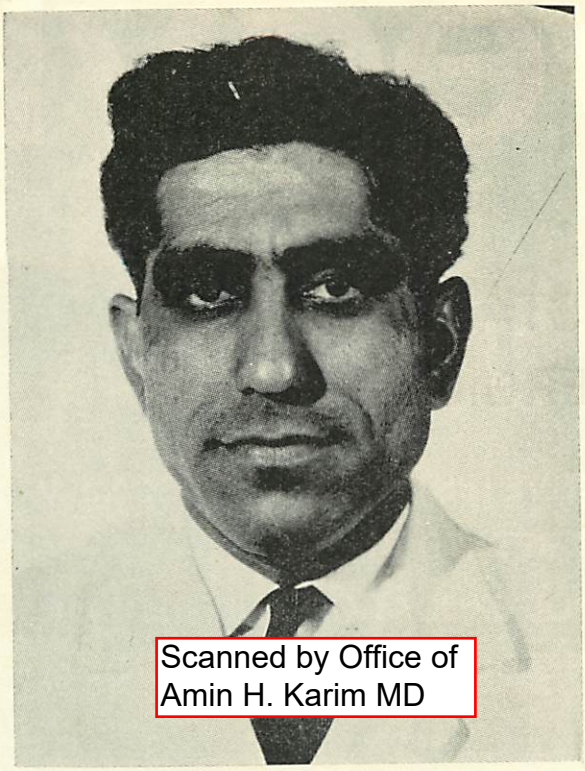
Born in 1940 in Hyderabad Daccan India. On Partition migrated to Pakistan, Did his early education from Karachi and Intermediate from D.J. Science College.

Graduated M.B.B.S., in 1964 from Dow Medical College. Did his house job in General Surgery for one year under Prop. Lt. Col. Said Ahmed.

Dr. A. Hasan left for U.K. in 1965 for his Past-graduation, where first he did House job in medicine and Ear Nose and throat.

Obtained his D.L.O. in 1968. and fellowship F.R.C.S. in E.N.T. in 1969. Got Registrar's job for three years in teaching hospitals.

On return to Pakistan in 1969 Joined J.P.M.C. as Registrar for 6 months, and then in December 1970 was appointed as Associate Surgeon E.N.T. in Dow Medical College, Civil Hospital, Karachi.



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# DR. S. ADIBUL HASAN RIZVI

*Assistant*
*Professor of Urology*
*Dow Medical College,*
*Civil Hospital Karachi.*

BORN in 1936, after his pre-medical education in Karachi. Got admission to Dow Medical College in 1954 on merit list, In 1960 he graduated his final M.B.B.S. Dr. S. A. H. Rizvi beside having a brilliant medical carrier during his graduation he topped the Karachi University in his final Professional M.B.B.S. Examination.

Did his early House Job as junior and senior House Surgeon in J.P.M.C. for one year after which he was appointed as Registrar in Surgery in Civil Hospital for one year.

Dr. S.A.H. Rizvi, in 1962 left for abroad for his Post-graduation. While in U.K. he worked in various capacity. House Surgeon, Genito University Deptt., Salford Royal Hospital, S.H.O., Genito-University Deptt., Crumpsall Hospital, Manchester., S.H.O. Casualty and General Surgery, Ancoats Hospital Radium Institute, Manchester, Genito, Urinary, Plastic and Genera l Surgery, Registrar in Surgery at Hope Hospital, Salfard University U.K.

After obtaining his fellowship F.R.C.S. from Edinburgh and England in 1967, he returned to Pakistan where he was appointed as Honorary Senior Registrar at J.P.M.C. From 23rd of February 1971 was appointed as Asstt. Professor of Urology, Dow Medical College and Civil Hospital, Karachi where he works to date.

Dr. S.A.H. Rizvi has so far published several important publication on different aspect of medical science some of his important papers are on Idiopathic ileocaecal ulceration and on Parathyroid Tumors.

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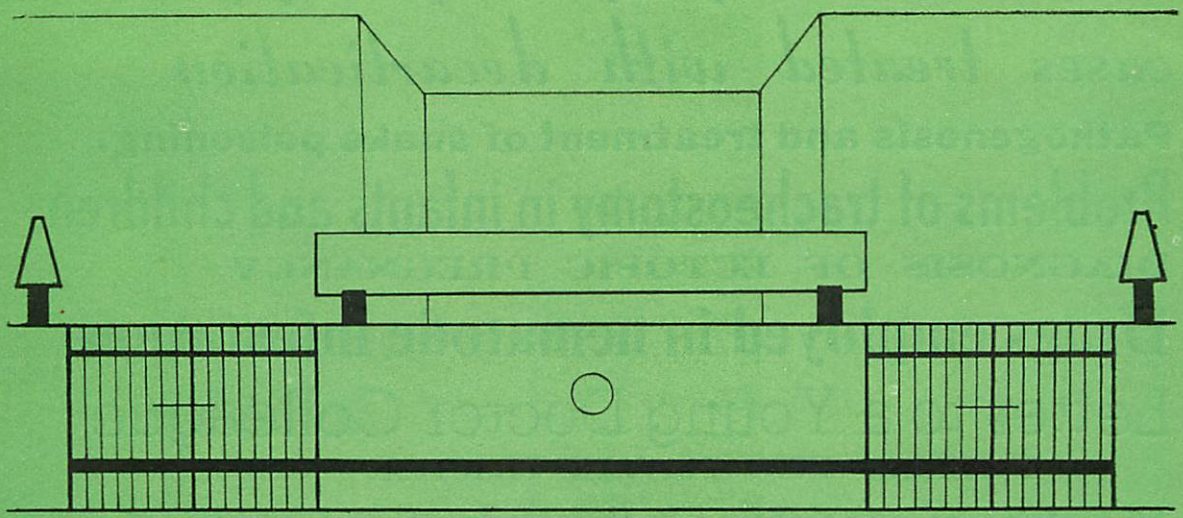
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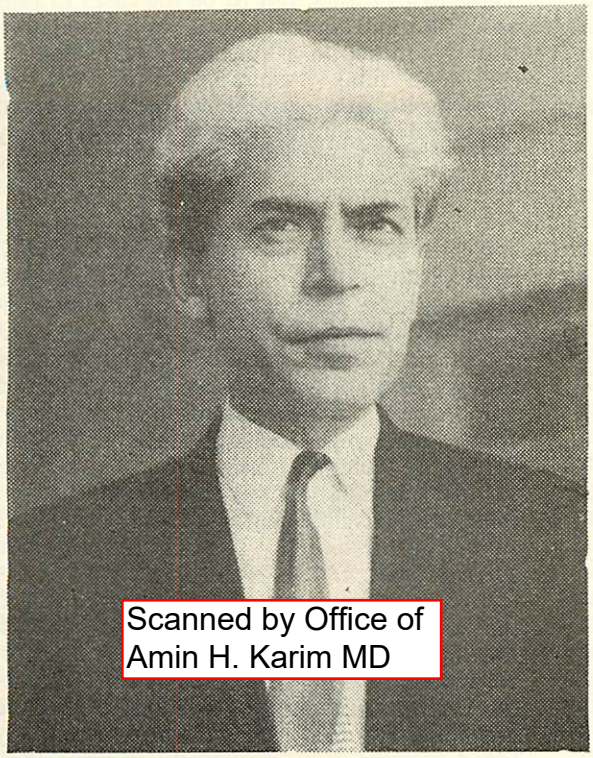
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**ASPHYXIA**

# A PRELIMANARY REPORT OF EMPYEMA CASES TREATED WITH DECARTICATION


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PROF. S. A. H. RAZVI
M.B.B.,S. (*Osm*) F.R.C.S. (*Eng*)
CH. M., F.C.P. S.

EMPYEMA is a serious condition which is responsible for a high rate of morbidity and some mortality. (Graham and Bell and the Empyema Commission in 1918 reported that every case of Empyema in 1918 influenza epidemic who had a rib resection invariably died. Ucher and co-workers reported a series of 189 cases of Empyema between 1940 and 1956 with 59 death, a mortality rate of 29%. Hoffman in 1961 reported a series of 125 cases with 5 deaths.

It is obvious from these figures that though with better understanding of the pathological processes and better means of treatment the mortality rate is much reduced still 4% mortility rate in the hands of expert shows the seriousness of the condition. The morbidity is still higher.

The condition assumes greater seriousness for our country because of much greater incidence of pulmonary tuberculosis, resulting into many cases of pleural effusions and tubercular Empyema, which by injudicious management can be converted into Empyema.

Majority of cases of pleural effusion and acute Empyma with proper care and treatment can be cured. However, some cases will become chronic. Brown and Co-workers showed that 50% to 65% of acute Empyemas cleared on aspirations and antibiotics and 35% to 50% cases required surgery. In Hoffmans series of 125 cases 13 became chronic. I am sure with dearth of expert Chest Physicians and Surgeons the incidence of Chronic Empyema following pleural effusion or acute empyema must be much greater in our country.

**Management of Chronic Empyema :**

Chronic Empyema in the majority of cases is preventable. If cases of acute Empyema are properly and intelligently treated the incidence of chronic empyema can be much reduced. However, some cases will become chronic inspite of expert management and many for lack of expert attention.

Briefly speaking the problem of chronic empyema is to obliterate a pus containing cavity lined with infective granulation. At the same time if the underline lung is free of disease, allowing it to expand, will be a further help to the patient. Both these objectives can be obtained by decoratication operation in suitable cases. The idea is basically sound and is not new.

Delorame in 1864, probably for the first time described and practiced this operation. However, he was ahead of his times. In practice the operation failed to give satisfactory results and was abandoned.

The other alternative was to leave the underlying lung alone and close the cavity by allowing the overlying chest wall to collapse. With this view Estlander in 1879 improvised on operation. In 1890 Schede described his own mordification of Estlander's operation. Both these operations were major surgical procedures and operative mortility was high. In 1935 Roberts described his operation. Although this operation is also mutaliting and serious, the mortality rate was reduced.

However, the problem of underline collapsed unaerated lung creating cardio-respiratory problems remained unsolved. Price Thomas and Clevland in 1946 described their war experiences with a large series of clotted and infected haemothorax treated with decortication. It was shown that decortication produced very satisfactory results provided the underlying lung was healthy and able to expand and in the immediate post-operative period it was kept expanded by suitable drainage and judicious suction.

During past few years I have used this operation in cases of chronic Empyema. The total number of cases done are 9. In one case operation was necessiatated also because the doctor treating the patient accidently broke the needle inside the chest. 2 cases were of empyema produced post-operatively. Seven were either cases of pleural effusion or acute empyema becoming chronically infected. 2 of the patients were females and seven were males. Average duration of symptoms were 5 months. The longest history was one year in 2 cases and shortest 2 months. Average age of the patient was 22.25 years. Oldest patient was 40 years and youngest 6 years of age. In five cases the onset was acute and in 4 cases it was insidious. In one case decortication was done because patient developed Empyema after removal of a Hydated Cyst of the lung. In another case decortication had to be done twice before the lung expanded. This was a case of lung abscess with empyema in a man of 32 years. In 3 cases empyema resulted from lung abscesses and a labactory with decortication had to be combined. In five cases pleural effusion got converted into empyema as a result of poor management and the patient came either with infected haemothorax or empyema. Majority of these cases were referred from Medical or Paediatric Wards and all had received treatment for various periods outside the hospital.

Presenting symptoms in all cases were cough history of chest pain fever and loss of weight. In 4 cases there was history of Haemoptysis but in none of the cases profuse. All the patients on admission were in poor nutritional state and anaemic 6, patients admitted to the general ward none had a haemoglobine of more than 60% and the lowest was 30% in a young boy of 12 years. He was also markely emaciated with gross oedema of the legs and weighing only 32 pounds. 3 patients admitted in the paying wards were in better state of nutrition.

Sputum was examined repeatedly in all cases. Only one patient had a positive A.F.B. sputum and this on operation turned out to have an apical soft walled cavity. 3 cases produced mixed growth of organisms like strep, viridans diphtheroid, microcattarhalis. These cases turned out to be the cases of lung abscesses and in each one of these along with decoratiction a lobectomy was done at the same time. Aspirated fluid from the chest in all cases showed many pus cells but on repeated cultures failed to produce any growth. Probably an evidence of liberal use of antibiotics.

Urine examination on one seriously ill child showed albumim, rest reported normal. Every case before operation had a Bronchoscopic Examination. The 3 cases which on exploration turned out to be lung abscesses showed purulant discharge from the concerned lob orifices. In the rest of the other cases apart from congestion and oedema of the Bronchial orifices nothing abnormal was noted. Bronchography was not done in any of these cases. Excised plura and lung tissue were submitted for biopsy. 5 cases were reported as tubercular and 4 as chronic Pyogenic infection. The average stay of the patient in the hospital has been 2 months and 25 days. Post operative stay on an average was 39 days. However, these figures create a rather erroneous impression about patients long stay in the hospital. Actually one patient had to stay for 4 months post-operatively because the house surgeon inadvertantly took out the tube and then realising his mistake tried to put it back unsuccessfully. When the mistake was detected the damage was already done. This case was treated conservatively and the result was not as good as in other cases. In another case also the drain did not function well and after waiting for a month with conservative methods I decorticated the lung again and in 15 days time the patient was fit to be discharged. In another case it was possible to discharge the patient after 17 days of operation. Majority of the cases if the post-operative care is vigilant can be discharged in 3 weeks time. In 2 cases to control acute pre-operative toximia interapleural cortisone with antibiotic was used with good results. On an average every patient received 4 pints of blood mostly one pre-operatively, 2 during the operation and one during the post-operative period. The average gain in weight during the patient's stay in the hospital was 8

pounds. Though in 2 young patients it was one stone each. One boy of 12 years at the time of admission was 32 pounds and at discharge 44 pounds. Another young adult of 15 years at the time of admission weighed 50 pounds and on discharge was 70 pounds.

In every case general anaesthesia with endotracheal intubation gas and oxygen or fluthane alongwith pentothol and curare was used. All cases had a standard posteriolateral thoracotomy. In some cases fifth rib was excised, in others posterior ends of the 5th and 6th ribs were divided subperiosteally. It is my feeling that the later procedure is better, providing greater comfort to the operator during the operation and to the patient postoperatively. In every case a complete perital and visceral pleurectomy was done. Organised fibrin from the diaphragm and the costophrenic angles was thoroughly excised, adhesions in the interlobar fissure divided and a close palpation of the underlying lung carried out. If the lung was found diseased it was excised and the anaesthetist on the completion of the operation was asked to expand the lung by positive pressure to see that the lung completely filled the hemithorax and no air leak was present. The chest was closed with 2 drainage tubes, one at the apex and the other at the bottom of the chest connected with the under water seal. Careful manage-, ment of these tubes is very essential. Use of vaccume bottles like redivac are very useful at this stage. Patients are x-rayed after 24 hours and subsequently as necessary and as soon as the lung is completely expanded and no fluid present in the chest cavity tube is taken out. However, we do not hesitate to keep the tube as long as necessary. For this purpose repeated x-rays and pleurograms are necessary. In every case antibiotics have been used and in 2 cases intrapleural trypsin or chymotrypsin was used with advantage. Grassi and co-workers also reported on the advantageous results of these prepartions.

The post-operative follow-up due to obvious difficulties has been short but every case has been seen for at least 3 months after discharge and 3 cases have been followed for a period of 2 years.

**Conclusion :**

In the end I would submit that:—

1. Decortication is the treatment of choice for cases of Chronic Empyema.

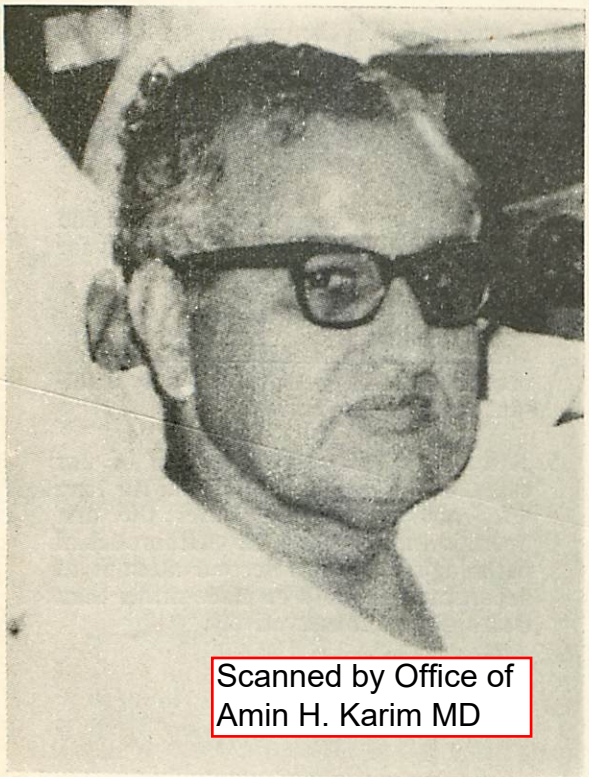
2. In this series though small there has been no mortility and morbidity is also much reduced.

3. There has been no selection of cases and as soon as the case was considered fit for surgery he has been operated upon.

4. In four patients out of nine cases additional lung resections along with decortication has been carried out simultaneously with success.

5. Based on the small experience of our cases, we will recommend that if the lung does not expand fully after the first operation and there is no endobronchial pathology present, a second attempt at decortication should be made rather than treating cases conservatively.

# Pathogenesis and Treatment of Snake Poisoning



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**Prof. Lt., Col. NAJIB KHAN**
T.PK., M.D.

*Professor of Medicine, Dow Medical College and Civil Hospital, Karachi.*

FOR the first time I came across patients of snake bites in the jungles of Burma during the Second World War. As a Medical Specialistin the Military Hospital I was expected to treat them, but I knew nothing about the treatment. The usual practice in the Military Hospital was to give a strong dose of rum to the patient as an elementary First Aid, to combat his nervousness which was always serious, give polyvalent antisnake venom and make crucial incision over the bite wound, and pour into that Potassium permanganate crystals. During 8-1/2 years of my service in that area I never came across a fatality. After the War in 1946 at Tata Hospital, Jamshedpur during my first week as Physician-in-Charge I got my first real shock. To my ward one morning had been admitted a young man who said he had been bitten by snake on his ear lobe while he slept on the floor. He had two fang marks on his right ear lobe but otherwise was perfectly normal. He had been given polyvalent anti snake venom and was being given coffee to be kept awake. A careful examination revealed nothing gross abnormal except, small area of anaesthesia around the fang marks. A nurse had been deputed to keep him awake. A couple of hours later while I was still on my round in the same ward, this man gave a shriek, fell back on his bed and his breathing stopped. Artificial respiration was of no avail. That was death from the bite of Krait, neurotoxic variety of snake, which includes cobras. In Bihar, often neurotoxic variety of snake bites were seen. They were all given polyvalent anti-snake venom, after local wound was incised and cleaned with Potassium permanganate. Arrangements were made to nurse these cases in special rooms where an artificial respiator was available so that the patient could be put in the iron lung immediately respiratory failure sets in, but we never succeeded in saving any of the fatal cases; though vast majority of them recovered without developing respiratory paralysis. Those were probably cases of non poisonous snake bites.

In 1956 when I came to Hyderabad I was faced with a new problem when big number of patients from all over the interior of Sind came to Liaquat Medical College Hospital after being bitten by snakes. All of them could not be admitted and we were not sure as to how to distinguish bites of poisonous snakes

and non piosonous snake as none of those patients could either describe the snake, nor had brought snake. Therefore first study was to discover types of snakes in the area and shift up scientific data from folklore and dear Sind is full of folklores about snakes of various types including PIANRH which is terror of the desert that has never been seen. Our study revealed that overwhelming majority of poisonous snakes in the area were of Viperiadae variety, and the commonest was LUNDI. The next problem was how to distinguish the patients bitten by Viperiadae variety of snake from the rest, specially non-poisonous which were majority. Our study revealed as was later reported by Najib Khan and F.A. Zubari (1959) that the simplest method to distinguish the Viperiadae snake bite patients from other snake bites was to test the clotting time. This simple procedure discovered after a good deal of study, was the most invaluable discovery to us at Liaquat Medical College Hospital, Hyderabad, at the Casualty Department simple prick of finger and observing the blood on the slide for ten minutes gave the diagnosis. Further studies since then have revealed Najib Khan et al (1967) as has also been pointed out by Ried et al (1963) that the blood becomes incoagulable at the latest after 4 hours of the bite by the Viperiadae snake.

Till recently the only treatment known for Viperiade snake bite poisoning was to make crucial incision over the bite, put potassium permanganate in the wound, give polyvalent antisnake venom, and release tourniquet which often has caused gangrene by them or was completely in-effective. Most of the patients recovered though bleeding from wound, mouth, urinary tract, and from recent scars of the wounds continued for several days upto 12 days. Injection sites also oozed out blood in these cases. Blood transfusion of fresh blood was given to replace the blood and in the hope to supply the missing factor in blood coagulation: Upto 28 pints of blood over 10 days was given to a patient without controlling bleeding. Several patients died which was understandable as world mortality of snake bite poisoning as estimated by Minton (1968) is 20,000 to 25,000. Death occured not due to loss of blood which was always combated but in the case who developed intracranial haemorrhage. There were three such cases amongst the series of 21 of our cases, reported in 1959, one of them 11 days after snake bite.

The exact mechanism involved in bleeding was unknown. In 1895 Martin demonstrated that the injection of Australian snake venom in minute quantities intravenously and some what large quantity subcutaneously caused intravascular clotting of blood leading to death because of circulatory standstill. Mellanby (1969) showed that the non-coagulability of blood was due to precipitation of fibrinogen followed by removal of fibrinogen from blood. Suggestion had been made that the venom of Viperiadae snakes contains haemorrhagin (Taylor, Molic, Ohuja (1935). Suggestion had also been made (Napier, 1946) that there were damage to endothelium of capillaries. Taylor, Malick and Ohuja (1935) also found in monkey bitten by snakes (E. Carinata) reduced fibrinogen to account for bleeding and suggested "invisible coagulation probably, with fine deposition of fibrin in the walls of blood vessels.

We found in our 21 cases (1959) of non cougulabity of blood increased prothrombin time and normal bleeding time. That was inspite of intraveneous injection of antivenom in high doses, and that incoagulability had continued for six days upto 12 days after bite. There appeared to be no damage to capillary endothelium as suggested by Napier, as the Hess's test was normal in all the cases. There is no evidence of any heamolysin as fragility test was normal in all the cases and also van den Bergh test and serum bilirubin level were within normal limits.

We had tried to combat incoagulability in these cases by massive doses of vitamin K, corticosteroids, several known proprietary coagulants and blood transfusion but in vain. The study was carried a step further as reported in 1959 (Najib Khan, Nasir Shaikh Mansoor Dar et al) we found on quantitative estimation fibrinogen markedly reduced. Exchange transfusion in a patient restored the clotting mechanism normal only for 40 minutes.

In 1968 we tried to combat fibrinogenopenia with Tryselol proteinase inhibitor which cures fibrinogenopenia in pregnancy bleeding syndrome but that was of no avail. On the indirect evidence of intravascular clotting being the cause of fibrinogenopenia which has been discussed by Najib Khan, Mubarika Shah, Mansoor Dar et al (1969), heparin was given and four patients were successfully treated. 75,000 I.U. of hepain was given for about 48 hours which stopped bleeding while patients

were still on heparin and clotting became normal in 13-16 hours after stopping heparin.

We recently had another case in which anti snake venom was not given at all and 60,000 units of heparin were given over 12 hours which made clotting possible in 13 minutes after 8 hours, and 9 minutes when tested after another 12 hours. This woman had been given 500 ml. of blood immediately after stopping heparin. In this case intravascular clotting is suggested on the basis of ethanol gel test which is possitive in intravascular clotting. Najib Khan, A. Salim and H. Vania 1970.

Thus this case proves what has been suggested earlier by many authorities as mentioned above and on the basis of which we started heparin in 1968, that there was intravascular clotting that was responsible for fibrinogenopenia.

We have also found that incision over the bite by the snake is a serious handicap to the patient as that leads to excessive uncontrollable bleeding. Therefore, that old practice and also the practice of introducing potassium permanganate should be abandoned. Tourniquet appears of little use and in several cases of positive harm. Polyvalent serum we are using seems to be not very effective and last case improved without any of it. Early heparinization with big dose in the range of 60,000 units of Heparin is what seems to give best results.

Snakes are shy creatures and remain in their own holes, coming out only during hot and rainy weather. Therefore, snake poisoning cases are more common during month of May to September. Snake do not bite unless frightened or trempeled over. All our cases except one had been bitten in dark and therefore carrying a light and making plenty of noise when one walks in dark will prevent people from being bitten by snakes. All our cases were wearing sandals and not shoes. One case who was bitten in day was a snake Charmar who was bitten when performing and died of cereberal haemorrhage. It was this young man who encouraged us to start heparin in cases which came afterwards.

There are more non poisonous snakes than poisonous, and the commonest poisonous snake in the Sind region is Viperiadae Variety. Patients bitten by these variety of snakes can easily be diagnosed as their clotting time is prolonged.

**Acknowledgement :**

Our thanks are due to the resident and nurshing staff who co-operated in the study of this case.

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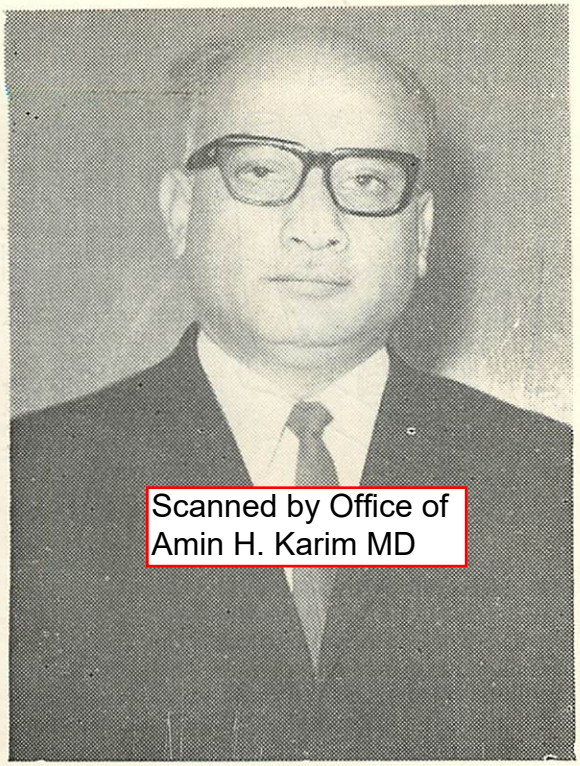
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# Problems of Tracheostomy in Infants and Children


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This article is based upon the experience gained after performing 278 "Emergency" tracheostomies in infants and children under two years. It is hoped that the young residents and the new specialists, who are more often called to perform this operation, will benefit from this article.

Emergency tracheostomy is done to overcome obstruction in the larynx and the subglottic space, to relieve dyspnoea and prevent asphyxia. It is a life saving operation in a patient who is weak, anxious and struggling for breath. There are certain problems which are particular to this age group and must be kept in mind to avoid .disaster The subject will be presented under the fol.owing headings:—

1. Anatomical problems.
2. Problems of indication
3. Problems of anesthesia
4. Operative problems
5. Problems in postoperative period.

**Anatomical Problems :**

*The neck.* The distance between the cricoid cartilage and the suprasternal space is hardly 1-1/2 inches. The prominence of the thyroid cartilage is absent and there is abundant adipose tissue in the subcutaneous layer.

*The blood vessels.* The veins in the subcutaneous tissue are engorged due to increased venous pressure. Trauma, to these veins, is avoided by keeping in the midline of the neck. The anterior jugular veins are extremely prominent. "The inferior thyroid venous plexus lies on the 3rd and 4th rings of the trachea and the right inferior thyroid vein after taking origin from it runs obliquely over the trachea to open into the right innominate vein at its junction with the superior vena cava; the left vein descends and joins the left innominate trunk, frequently the two veins form a common trunk." —(*Gray's Anatomy*).

Injury to these veins or the plexus must be avoided because not only there is profuse haemorrhage during operation but there is a great risk of air being sucked into the venous circulation whenever the child takes a deep breath.

Thyroideaima may be present running over the trachea and is in great danger of injury when an attempt is made to perform a low tracheostomy. It may also be eroded by a long, unduely curved tracheostomy tube which ulcerates through the anterior wall of the trachea.

*Size of larynx, subglottic space and trachea.* Grabreil Trucker (1932) stated that the lumen of the subglottic space and its measuremeuts are more important than those of the larynx. According to him the antero-posterior diameter of the infant larynx varies between 7 to 9 mm, while the subglottic diameter of 5 mm was too small, and that measuring 4 mm

was actual stenosis. The subglottic space is surrounded by the cricoid cartilage. There is no room for the soft tissue to expand except at the expense of the lumen. A uniform coating of 1 mm all round will produce respiratory distress. The diameter of the trachea is slightly bigger than that of the subglottic space. The tracheostomy tube should fit in the tracheal lumen snugly, but not too tightly. The trachea is a midline structure, a slight rotation of the neck may shift the trachea to one side, which can be easily missed during operation.

The distance between the lower border of the thyroid isthmus and the carina as measured by Jackson (1963) in neonates varies from 1.6 to 3.1 mm. The lower end of a long tracheostomy tube may touch the carina and cause ulceration and partial obstruction.

*Tyroid isthmus.* It commonly lies over the 2nd and 3rd rings of the trachea. In some cases it is big and may extend up to the fourth ring. From its lower border the inferior thyoid venous plexus takes origin.

*Cervical pleura.* The dome of the right cervical pleura extends high in the root of the neck. A low incision to expose the trachea may lead to injury of the pleura, as it keeps on bulging during each respiratory movement. In one case the cervical pleura was punctured and sine then the lower limit of skin incision is kept a finger's breadth above the suprasternal notch.

*Extension of the neck.* The neck should be extended to make the trachea more superficial and to pull a few rings of the trachea from the chest. Extension of the neck before instruments are ready, will aggravate the respiratory distress, and may demand an immediate opening in the trachea.

If the neck is extremely extended the lumen of the trachea will be further reduced by the bodies of the cervical vertebrae pressing the oesophagus anteriorly. The latter may also be injured by the thrust of the knife while making an incision in the trachea.

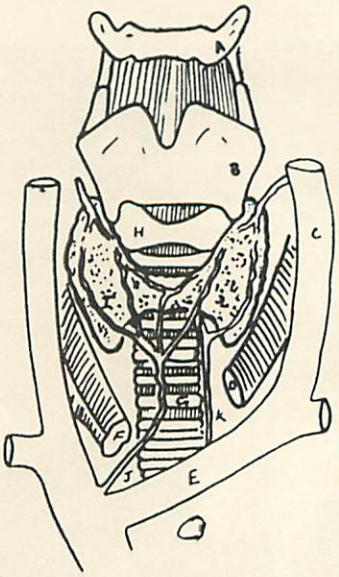



Fig. 1

Showing vascular relations of the trachea, A, Hyoid bone; B, Thyroid cartilage; C. Lt. internal juglar vein; D. Lt. common carotid artery; E. Lt. innominate; vein; F. Right common carotid artery G. Trachea; H. Cricoid cartilage; I. Thyroid gland; J. Right inferior thyroid vein; K. Left infeior thyroid vein.

The right inferior thyroid vein and left innominate vein can be easily injured during tracheostomy.

**Problems of Indication :**

The cause of obstruction may not be known immediately but one should remember that infants and young children cannot tolerate anoxia over prolonged period; the airway should therefore be quickly restored.

An anxious, restless child, with indrawing of the suprasternal, supraclavicular spaces, the epigastrium and the sides of the lower intercostal spaces, with good colour and pulse, with inspiratory stridor, shoutd be operated upon immediately. To wait for cyanosis to develop is to invite death and disaster.

According to Wilson, "The thought of being too late and of losing a patient through neglect to perform a comparatively minor prophylactic operation is one that is powerfully compulsive of an early action."

There are however some cases, of diphtheria or acute laryngitis, which may improve by adequate medical treatment consisting of antibiotics, A.D.S., chymoral and cortisone. But the "clinical judgment and clear assessment of the case are essential in arriving at a wise decision" (Wilson).

Analysing the indications for tracheostomy Fitz-Hugh and Morgan (1954) distinguished:-

1. FIXED OBSTRUCTION in the upper air passage producing rapid obvious respiratory distress and anoxia.

2. FLUID OBSTRUCTION in the lower respiratory track causing a slow obscure distress and anoxia.

The following were the main indications for which tracheostomies were done:—

| | | |
|---|---|---|
| A. *Fixed obstruction in the larynx and upper trachea :* | | |
| 1. Laryngeal diphtheria | .. | 233 cases |
| 2. Acute laryngo-tracheitis | .. | 15 ,, |
| 3. Impacted foreign bodies in the larynx and subglottic space | .. | 2 ,, |
| 4. Bilateral abductor paralysis of the vocal cords | .. | 2 ,, |
| 5. Retropharyngeal abscess | | 1 ,, |
| *B. Fluid obstruction in the lower respiratory track* | | |
| 1. Bronchopneumonia | .. | 15 ,, |
| *C. Elective tracheostomy* | | |
| 1. Foreign bodies in the bronchus .. .. | .. | 10 ,, |
| **Total :** | | **278** ,, |

In fixed obstruction the tracheostomy is done to relieve the dyspnoea, while in the fluid obstruction the tracheostomy helps in reducing the dead space air and suction of the secretions becomes an easy affair.

**Problems of Anaesthesia :**

Local anaesthesia has been used in most of the cases. It is obtained by infiltrating 3 to 5 cc of half per cent xylocaine in the midline of the skin of the neck and the underlying subcutaneous tissues. Addition of a drop or two of adernaline hydrochloride (1 in 1,000) renders the operation almost bloodless. Two per cent xylocaine is toxic to infants and children and therefore should never be injected in these cases.

General anaesthesia was used in four cases only. It may be given provided an expert anaesthetist is available, all the facilities of modern anaesthesia are present in the operation theatre and there is no cyanosis or cardiac impairment in the patient. The pharynx is first sucked dry, oxygen is given by a mask and anesthesia given by nitrous-oxide. An endotracheal tube or a small bronchoscope is passed to ease the breathing. It also helps to decrease the venous congestion, acts as a guide to the trachea and decreases the anxiety of the operator.

No anaesthesia is necessary in a cyanosed patient and no time should be wasted in restoring the air entry into the lungs.

**Operative Problems :**

The details of the operative technique will not be described here but the problems which arose from time to time will be discussed. They should be kept in mind to avoid delay in operation and prevent a complication—often a serious one.

1. *Tracheostomy position.* It is assured throughout the operation. The neck is extended by keeping a small sand bag or a rolled towel under the shoulders. Extension of the neck should be avoided till all the instruments are ready and within easy reach and local infiltration has been made. The extended position of the neck will increase the respiratory distress and no time should be lost in making an opening in the trachea.

The chin and the suprasternal notch should be kept in the midline of the body. The head is supported by an assistant who should devote himself entirely to maintain this vital midline position. The jaw should never be held as it will close the mouth, and if the nose is blocked by secretion, asphyxia will soon occur.

2. *Grasping of the larynx.* This is another important step during the operation. The larynx should be grasped by the thumb and second finger of the left hand, and this grip is maintained throughout the operation till thetrachea is opened. The index finger of the left hand is used to palpate and identify the trachea from time to time.

3. *Skin incision* A liberal longitudinal incision of about one inch should be given extending from the lower border of the thyroid cartilage up to a finger's breadth above the suprasternal notch. A transverse incision should never be given in emergency cases because the field of operation is small and landmarks are not easily identified.

4. *Exposure of the trachea.* After the cutaneous veins have been grasped, blunt dissection is carried out by the tip of a fine artery forceps in the midline, the ribbon muscles are gently retracted by the assistant. The retraction should be equal on either side. The thyroid isthmus comes in view. If time permits it may be clamped between two artery forceps after the pretracheal fascia has been incised at the lower border of the cricoid cartilage. In this series the isthmus was pulled upwards by a hook slipped below and behind its lower border. A sharp hook may be inserted in the second ring of the trachea to pull it more anteriorly. Next the pretracheal fascia is incised to expose the tracheal rings. Extreme care should be taken not to injure the inferior thyroid veins or the venous plexus. Undue dissection and separation of the soft tissues should be avoided because air can easily enter the separated tissues to produce surgical or mediastinal emphysema.

5. *Tracheostomy incision.* The trachea should never be incised unless the rings have been identified.

A "longitudinal incision" may be given in the 3rd and 4th rings of the trachea in the midline. The disadvantages of this incision are that a tracheostomy tube may be difficult to introduce if it has dislodged. and pressure necrosis of the margins of incised rings may occur.

A "window incision" may be given, the margins of the longitudinal incision are trimmed to make a circular hole in the trachea. The tracheostomy tube can be introduced with great ease even if it has slipped out, but it has the great disadvantage that the anterior wall of the trachea becomes weak and the moment the tracheostomy tube is removed, "inspiratory collapse" of the anterior wall of the trachea occurs, producing respiratory distress.

A "cross incision" is now used. Short lateral cuts are made in the middle of the vertical incision or at the upper and lower ends of the longitudinal incision.

Since this incision has been the practice, the problems of decannulation has been considerably overcome. The blood supply of the rings is assured, the anterior wall of the trachea is not weakened, the tracheostomy tube can be introduced with minimum trauma to the mucous membrane of the trachea, and the opening soon constricts around the tube of whatever size used. The disadvantage is that, if the tube slips within 24 hours, the reintroduction may be difficult unless a track has formed. "But this does not outweigh the advantage of earlier decannulation." (Jackson 1963). Fig. 2).

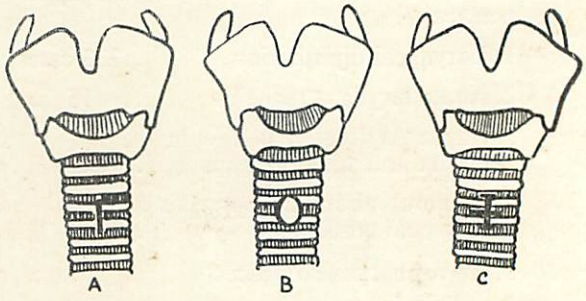



FIG. 2

Showing A. Longitudinal incision for tracheostomy: B. Window incision: C. Cross incision.

6. *Selection of tracheostomy tube.* A proper size tube should be used to give adequate airway both immediately and in the postoperative period. It should neither be too long so as to reach the carina and produce ulceration, nor it should be too short to dislocate during movements of the neck. It should not be unduely curved because the lower end of the tube will touch the anterior wall of the trachea and produce osbtruction in breathing, and the prolonged contact will lead to pressure necrosis and ulceration of the anterior wall. Such a fatal complication has been described by Reading (1958).

The tracheostomy tube should be easily introduced 'leaving some space around for the air to pass towards the larynx during decannulation. It should cause least mucosal irritation, and should not touch either the anterior or posterior walls of the trachea.

The commonly used tubes are "a part of a circle type", either "King's College Hospital pattern" or "Edinburgh type". They should be introduced with the help of a pilot or introducer, otherwise the margins of the tube will catch in the tracheostomy incision.

The bivalve "Fuller" has been used most commonly. It has the advantage that it can be easily introduced but the drawback is that granulation tissue occupies the cleft between the two flaps.

Sixteen French gauge is used for infants up to six months. It has an outer diameter of 5 to 5.5 mm and the airway diameter is of 4 to 4.5 mm.

Eighteen French gauge is used for infants above six months and children up to two years. It has an outer diameter of 6 to 7 mm and the airway diameter of 5 to 5.5 mm.

A pair of each size tube should be kept ready before the operation.

**7. Haemostasis.** Bleeding either from a cutaneous vein or an injured inferior thyroid vein should always be controlled by using a non slipping ligature. Whatever blood that has entered the trachea should be sucked.

8. *Fixation of the tracheostomy tube.* The traeheostomy tube is tied round the neck by means of tapes which should be of equal lengths and the knot is tied at the centre of the back of the neck. The knot should be tied when the neck is fixed because if the tube is tied when the neck is extended it will become loose and slip out when the sand bag beneath the shoulder is removed.

Cooper (1961) even suggested that the flanges of the outer tube may be stitched to the skin to prevent slipping.

9. *Skin stitching.* The skin incision has not been sitched in this series. A tight skin stuturing is dangerous because if the tracheostomy tube slips out of the trachea, the leaked air keeps on collecting in the tissue of the neck and may produce mediastinal emphysema and pneumothorax.

**Problems in the Postoperative Period :**

After the tracheostomy the dyspnoea is relieved, the anxiety of the parents is apparently over. There may be some relaxation in the care of the infant by the nurse who may have never looked after such a case before. The signs of blockage or dislodged tube may be easily missed or dismissed as minor, especially in a pediatric unit where some cases of bronchopneumonia need a tracheostomy—"a dangerous division of post-operative care".

It is the most important duty of the nurse or the doctor to ensure that the child is breathing freely through the tube. A jet of air should be felt coming out during expiration.

The inner tube should be kept clean by repeated suction with the help of a sterile catheter. The inner tube may be frequently removed for cleaning and replaced by a duplicate tube. The outer tube should never be left without the inner for a long time as the former will be blocked by the secretions.

By neglecting these minor points in the after-care, disasters like blocked tube or slipped cannula may occur and cause fatal complications.

According to Reading (1949), "Paradoxically the patient is in great danger of dying from asphyxia after tracheostomy than he was before it".

The outer tube should be removed under good light and with a tracheal dilator in the hand, the duplicate tube should be immediately introduced.

*Slipping of the tracheostomy tube.* The tracheostomy tube may dislodge from the trachea and lie in the soft tissues in front of the trachea. The dislocation may be due to loosening of the tapes, or due to undue movements of the neck, or too short a tube has used. It may also be due to postoperative oedema of the soft tissues, or the neck has been kept extended for a long time. Inspiratory stridor, laboured fast breathing, and inspiratory dispnoea will reappear, and demand the urgent replacement of the tube. The air is heard leaking from the sides of the tube and may mislead a casual observer. When the tube has slipped, air can enter the lungs through the diseased obstructed larynx and hence recession of the soft tissues of the neck and indrawing of the tracheostomy incision will take place. During expiration the air will escape from the tracheostomy incision, partly from the larynx and some from the sides of the displaced cannula but certainly not through the tube. If a hand is placed on the lumen of the tube a jet of air will not be felt. In cases where the skin incision has been tightly stitched the air will collect in the tissues of the neck and mediastenal emphysema may rapidly develop.

*Blockage of tracheostomy tube* The mucous secretions on drying block the lumen of the inner tube. In cases of acute laryngotracheo-bronchitis these secretions are thick and sticky, which quickly fill the inner tube.

Repeated suction or replacement of the inner tube must be done as often as necessary. The attending nurse must be instructed to clean the tube when the slightest obstructiohn in breathing is noticed. Failure to clean the inner tube in time may asphyxiate the infant.

*Lower respiratory track obstruction.* If on cleaning the inner tube the obstruction is not relieved, there is expiratory distress, a blockage in the trachea or bronchus should be suspected and immediate measures should be taken to relieve it by deep suction after instilling a few drops of sterile soda-bicarb solution. Even bronchoscopic clearance may be necessary. This type of obstruction is more common in cases suffering from acute laryngo-tracheo-bronchitis where thick tenacious mucous plugs block the main bronchus.

*Spill over during feeding.* During the first week or so the milk may appear in the trachea and cough out through the tracheostomy tube. This can cause anxiety because of suspicion of a tracheo-oesophageal fistula. It is really due to inco-ordination of laryngeal reflexes of respiration and deglutition. During swallowing there is inhibition of respiration together with closure of the larynx, while during inspiration the larynx dilates and opens up. These two reflexes are closely integrated. After tracheostomy the inspiratory dilation and opening of the larynx disapears and the breathing continues even during the swallowing reflex and allows spill over in the larynx to occur. The infant gradually learns swallowing-closure reflex within a 2 to 3 weeks.

*Surgical emphysema.* Air may escape in the subcutaneous tissue of the neck due to undue dissection and separation of the soft tissues or the window incision has been very large, accommodating a smaller tube, or the tracheostomy cannula has slipped, and the air keeps on collecting in the tissues, especially when the skin incision has been tightly stitched. If this is allowed to go on air may collect in the neck, face and the chest and even in the mediastinum.

*Mediastinal emphysema and pneumothorax.* Air is sucked along the carotid sheath into the mediastinum during inspiration through the skin incision, more easily if a low incision is made or a wide dissection of the fascial planes has been done during violent inspiratory movements (Reading 1958).

Air is locked up in the mediastinum and is gradually added by a valvular mechanism. Tracking along the pulmonary vessels, it reaches the hilum of the lungs and ruptures into the pleural sac through the mediastinal pleura to produce pneumothorax and collapse of the lung. Pneumothorax may also develop due to puncture of the cervical pleura.

*Tracheo-bronchial secretions.* Often thick mucopurulent secretions occur in a tracheostomized patient either due to secondary infection or due to irritation of the metallic tube or due to bronchopneumonia. These should be repeatedly sucked and a cover of antibiotics is given.

*Decannulation.* Removal of the tube has been the most worrying problem in these cases. Attempt is made to remove the tube after 3 or 4 days provided the cause of laryngeal obstruction has been overcome. In certain cases the removal of the tube may be difficult even when the cause of laryngeal obstruction has been relieved.

In two cases the tube was left for 3 to 4 months as removal of the tube produced immediate respiratory distress and the tube had to be reintroduced. Infants do not tolerate early decannulation.

The causes of delayed or difficult decannulation may be as follows:—

1. Granulation tissue at the upper end of the tracheostomy window blocks the tracheal lumen.

2. Inspiratory collapse of the anterior wall of the trachea occurs due to too much removal of the rings during window incision (Reading 1958 and Venables 1959).

3. Collapse or indentation of the rings above the tracheostomy window (Ardan and Caust, 1963).

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4. Extended position of the flanges of the outer tube over the trachea above the window (Reading 1958).
5. Suction of the soft tissues of neck when the tube is removed with collapse of the anterior wall of the trachea (Reading 1958)
6. Tracheal or subglottic stenosis due to fibrosis (Putney 1955).
7. Persistent cause of laryngeal obstruction like a missed foreign body in the larynx or subglottic space.
8. Depression of reflexes which control the laryngeal function during breathing and swallowing (Crookes 1954, Gray 1960). The infant or the child needs re-education.

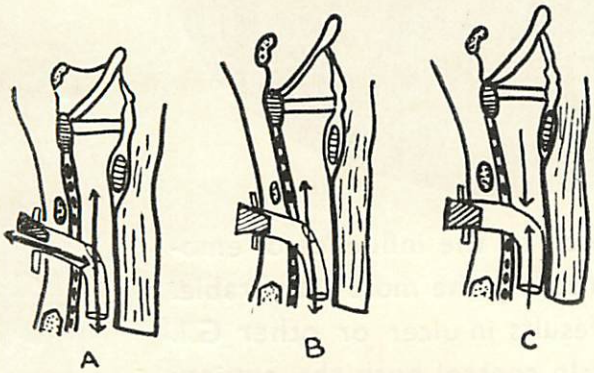



FIG. 3.—SHOWING CORKING TECHNIQUE OF DECANNULATION

A. Shows half corking of the tracheostomy tube in which the patient can breathe partly through the larynx and also through the tube.
B. Shows full corking of the tube. Patient can only breathe through the larynx.
C. Shows full corking of the tube which is tightly fitting the trachea and is without opening on the convex side. Patient can neither breathe through the larynx nor through the tube.

**Technique of decannulation :**

1. By gradual corking of the outer tube which has a hole on the convex side to allow air to pass towards the larynx. When full corking is tolerated for 48 hours without any respiratory distress the cannula may be removed. Things should be kept ready to reintroduce the tube if distress reappears after some time. It may be a difficult task because of closure of the fibrous track within a few hours.

2. By gradually introducing smaller size tubes so that air can pass through the tube in the trachea.

3. Under general anaesthesia the larynx and bronchi are examined and the tube removed. When the child wakes up he can breathe through the mouth. The fear of ng with the tube disappears after the anaesthesia.

4. By introducing an obturator in the tracheostomy track allowing a free passage of air in the trachea.

5. When no organic cause is found within the larynx and trachea the passage of time and growth of the child will succeed where all human efforts have failed (Crooks 1954). The tracheal rings as they grow become harder and are able to withstand the negative inspiratory collapse when the support of the tube is removed (Jackson 1963).

**Summary :**

Tracheostomy is being increasingly performed, more often by in-experienced operators. An attempt has been made to describe the various problems met within in infants and children under 2 years.

1. The subject has been presented under headings of anatomical, anaesthetie, operative, and postoperative problems, The problem of indication has also been discussed, An early tracheostomy should be done whenever indicated.

3. Stress is made on cross incision in the trachea, without removing any portion of tracheal rings.

4. Decannulation has been the most important, and worrying problem. Various ways and means, to over come, have been described.

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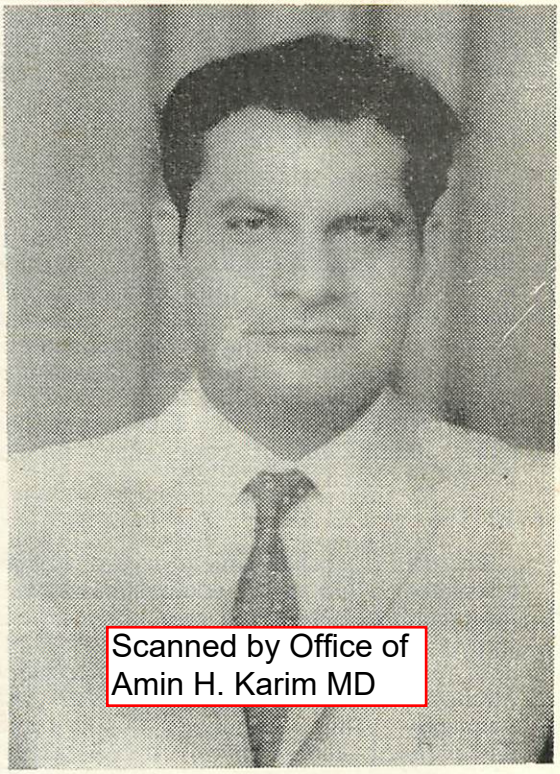
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# Diagnosis of Ectopic Pregnancy

*(Review of 13 Cases)*


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EVERY first year clinical student knows that amenorrhoea, followed by pain and then bleeding are the cardinal symptoms of ectopic pregnancy. And yet the diagnosis of this condition can be one of the most difficult and perplexing problems in Gynaecology.

In our department, in the past 12 months, 13 cases of Ectopic Pregnancy were admitted and the total deliveries in the department last year were 2,005. The frequency of Ectopic Pregnancy is once in every 300 deliveries, after the 28th week (I). The incidence, of course, varies from country to country and from community to community. Many Ectopic pregnancies are not even diagnosed. In our series of 13 cases, pre-operative diagnosis was made in 10 cases.

In a recent survey by Marchetti, Kuder and Kuder(II) the diagnosis was made before operation in only 56.6 percent of a series of 219 cases. Other authorities report a correct diagnosis in 75 to 80 per cent of cases, but all admit the difficulty. This is due to the presence of a typical cases which are not uncommon; in fact it has been said that if one is confronted with a pelvic condition that follows no rules and does not conform to any standard, one should think of ectopic pregnancy or tuberculosis.

In ten of our cases, the diagnosis was made before laparotomy. The variability of the clinical picture has been stressed by all authorities. This inconsistency is quite comprehensive if one considers the variety of extrauterine locations and their several stages of development with a distinct pathology and clinical picture in each. The various types of implantations in the Fallopian tube may all give rise to differing syndromes and the ovarian, abdominal, and cervical pregnancies, as well as previous inflamatory tubal disease and ovarian swellings, add to the confusion. A detailed, careful, unhurriedly taken history alongwith certain signs and symptoms, will help considerably in making a proper diagnosis. Diagnostic aids may be helpful in cases where the condition is obscure. Each of these are discussed in detail:—

**1. History :**

It is well known that ectopic gestation often arises in women who have been sterile for several years. A history of inferitility was present in three of our cases. A careful enquiry may reveal previous goncoceal salpingitis or salpingitis following upon septic abortion and puerperal sepsis. Women are often inclined to omit in their history accounts of their pre-marriage days and as such one has to be extremely sympathetic and tactful. A careful history alone will help in making a diagnosis in 45 to 50 percent, but according to Wharton (III) where the history is suggestive, a tubal pregnancy is to be considered first,

regardless of palpatory findings. One also must remember that the incidence of ectopic gestation is muchmore frequent IV in densely populated areas and in seaport and holiday towns.

**II. The Symptoms and Signs :**

The symptoms and signs depend upon whether the pregnancy is intact, or ruptured through the tubal wall and also upon the amount of haemorrhage that has occurred. The important symptoms and signs are discussed below:—

(*a*) *Abdominal Pain :*

This complaint is always made at some time in the history of the patient. In all my cases it was the leading complaint. In Lavell'sV series of 410 cases, pain was noted in all cases, although other authorities give its incidence between 90-95 percent. The pain may be unilateral or generalised over the abdomen. It may be lacinating of cramp like. According to Schouffier VI, when other factors point towards ectopic pregnancy, the lacinating type of deep pelvic pain is pathognomonic of ectopic gestation. In certain cases a dull aching sensation may be present due to the expansion of the tube; later tubal colic develops from attempts by the tube to expel its contents as happened in one of my cases. The pain has no constant time relationship to the vaginal bleeding. Thus, in those cases in which the latter occurs, in about one third the pain preceds the spotting. In a third it occurs simulataneously with the first spotting, whilst in another third it follows the initial vaginal bleeding. Moreover, in at least a quarter of, the cases, no vaginal bleeding whatsoever occurs.

Shoulder pain, if present, is a most important symptom. According to Dodds VII shoulder pain in a woman suffering from acute abdominal pain is pathognomonic of an extra uterine pregnancy. BrownVIII does not attach as much importance to the symptom because it may be present in appendicitis and cholelithiasis. In my series it was present in five cases. Bearing down pain between the front and back passages with a feeling of pressure in the bowel and stenamus is often complained of when a haematocele is present, (Mahfouz,IX). Rarely the pain may be situated in the sacrum or anus.

(*b*) *Amenorrhoea:—*

Hospital records indicate that a history of amenorrhoea is not abtained in a quarter of the cases. The reason for this is that the patient mistakes the pathological bleeding which so frequently occurs in tubal pregnancy for a true menstrual period. To avoid error, it is extremely important that the character of the last period be investigated in detail in respect to duration, amount and as to whether it impressed the patient as being abnormal in any way. In ten of our cases amenorrhoea was present.

(*c*) *Vaginal Spotting or Bleeding :*

The incidence of vaginal bleeding is about the same as that of amenorrhoea, namely, in the neighbourhood of 75 percent. As long as the ovum remains intact, uterine bleeding is usually absent, but with disturbance or death of the ovum, the chain of endocrine relationships which maintain the uterine decidua is broken and the collapsed uterine mucosa bleeds. The bleeding is usually scanty in amount, dark brown in colour and may be either intermittent or continuous; it was present in eleven of my cases.

(*d*) *Syncope and Shock :*

The pallid, shocked patient, so inseparately associated in the young doctor's mind with the picture of a ruptured tube pregnancy, is seen in a minority of cases. Although faintness and weakness occured in 47 percent of Jarcho's X series, it is sually recorded less frequently. Thus Marchetti, Kuder and Kuder noted such symptoms in 29.1 percent while in Langman and Goldblatt's series XI of 310 cases, 133 patients complained of weakness and 91 fainted. In my cases faintness was present in four patients. Actual shock occurs in about 10 to 20 percent of cases.

(*e*) *Nausea and Vomitting :*

As a result of periotoneal irritation, nausea and vomitting are common symptoms and in 310 cases Langman encountered nausea in 162 patients and vomitting in 142. In our cases nausea occured in three cases and vomitting in six.

(*f*) *Urinary Disturbances :*

Occurs due to peritoneal irritation induced by pelvic haemorrhage; this was only present in two of our cases.

(*g*) *Vaginal Tenderness :*

By far the most common physical finding in ruptured tubal pregnancy is exquisite tenderness on vaginal examination, especially on movement of the cervix. This is demonstrable in over three quarters of the cases, but occasionally may be absent. It was present in all of our cases. Abdominal rigidity and tenderness are present in about the same proportion of cases and in my cases rigidity was present in only six.

(*h*) *Phelvic Mass:*

A number of studies indicate that a pelvic mass is palpable in about one half of the cases only (XII) Several authors report this finding frequently; Marchetti and his associates found a pelvic mass in 70.2 percent of cases. The mass varies in size, consistency and position. It ranges as a rule between 5 and 15 cm. in diameter , and may be soft and elastic. It is rarely anterior to the uterus, but almost always either posterior or lateral. In my series the pelvic mass was palpable in ten cases.

(*i*) *Uterine Changes :*

Because of the action of oestrogen produced by the placenta, the empty uterus enlarges during a tubal gestation and its consistence also is similar to that of an intrauterine pregnancy so long as the foetus is alive. In broad ligament pregnancies the uterus may be displaced to one or the other side.

(*j*) *Blood pressure and pulse :*

As might be expected the blood pressure falls in proportion to the amount and the suddenness of the intra-abdominal haemorrhage. In a sense the drop in blood pressure is a protective mechanism since it favours haemostasis; as a consequence a rise in pressure often follows the fall, but as the pressure returns again towards normal it produces renewal of the bleeding with another drop. In cases which rupture suddenly the systolic pressure is sually below 100 mms. Hg. In Jarcho's 147 cases only in 15 percent did it fall below 70 mms. Hg. In all my cases the systolic blood pressure was above 100 mms. Hg.

(*k*) *Temperature :*

Following acute haemorrhage the temperature may be low but with recovery from shock it sometimes shows a tendency to rise slightly as the result of absorption of blood. As a consequence temperature between 100 and 101 degrees Fahrenheit are seen in about one patient in three but it is rare for this temperature level to be exceeded in the absence of infection. This is an important distinguishing sign between ruptured tubal pregnancy and acute salpingitis. If there is an ectopic and superimposed infection the diagnosis can be very difficult. In six of our cases the temperature was 101.2 degree Farenheit, whilst in another three cases it was normal and in the rest sub-normal.

(*l*) *Culler's Sign :*

In 1919 T.S. Culler of Baltimore described a sign that is occasionally present "when the absomen contains an abundant quantity of free blood arising from a slow persistent bleeding rather than from a sharp or severe one." In such cases the "Umblicus may in some way imbine the blood and appear bluish black so that in time one gets the same play of colours that one gets with a black eye—the greens and yellows." Apparently it is more likely to occur in the skin covering an Umbilical hernia or in the region of a rectal diastasis. It is, however, so rarely present as to be of little value in diagnosis. It was present one in 149 cases described by Bortini XIII in four of which there was umbilical hernia. In my cases this sign was absent in all the patients.

**III. Diagnostic Aids :**

(*i*) *Blood Count and Blood Sedimentation Rate :*

The leucocyte count shows an extreme variation in ruptured ectopic pregnancy. In about half the cases it is normal but in the remainder all degrees of leucocytosis may be encountered up to 30,000. The blood Sedimentation Rate is raised after the haemorrhage but this rise can occur in any infection.

(*ii*) *Icteric Index :*

May be helpful. A positive delayed direct Van de Bergh reaction is of help in that it may indicate the presence of free blood in the abdominal cavity.

(*iii*) *Biological Tests :*

Such as the Aschheim-Sondek and the Friendman's test may be of value in non-emergency cases. This test was of some use in diagnosis of two of my cases. Zondek 1942, points out that after the placenta has ceased to function, Prolan B disappears from the urine quicker than Prolan A. A positive Prolan A reaction alone therefore may be found in an extra-uterine pregnancy and according to him may serve as an aid to diagnosis.

(*iv*) A Bimanual Examination under anesthesia is a valuable aid in all cases (Browne).

(*v*) *Pelvic Puncture:-*

When the diagnosis is in doubt a posterior fornix puncture or cul-de-sac puncture may be helpful. This procedure helped us to diagnose our four cases, but this procedure is not entirely free from danger as it may sometimes introduce infection. Bloody fluid can be obtained from a twisted ovarian tumour of haematosalpinx. Cases have been recorded where the needle entered a haemorrhagic Graffin follicle and a laparotomy was performed. If the puncture is not positive a posterior colpotomy is sometimes indicated (Greenhill, XIV). It is advocated as a diagnostic procedure by a number of authorities-Heaney (XV prefers it to simple puncture believing that the danger from the procedure is slight. Furthermore, if the pregnant tube is accessible it may be removed through the colpotomy openings.

(*vi*) *Curettage :*

Sometimes has a diagnostic value if definite decidua is found and there is absence of chorionic villi. According to Novak (XVI) in only about half the cases is decidua found. A dry scrape, in which no tissue is obtained in a suspected case, is almost certain evidence of an extra-uterine pregnancy according to Heaney. He states that the scantier the curettings the more probable the diagnosis of extopic pregnancy as most of the patients expel the decidual cast before coming to operation.

(*vii*) *Endometrial Biopsy :*

May be useful diagnostic aid (Mischell and Newmark XVII). A biopsy specimen of the decidua can be obtained by a section curette. This procedure should not be attempted if an intrauterine pregnancy has not been ruled out.

(*viii*) *Pneomoroentgenography :*

Injection of carbon dioxide gas in the peritoneum followed by X-ray has been used by Stein(XVIII) as a diagnostic procedure. Its use in ectopic pregnancy is limited to early and unruptured tubal pregnancy. Greenhill does not think this procedure is necessary and prefers posterior colpotomy.

(*ix*) *Peritoneoscopy :*

Peritonescope was devised by John Ruddock(XIX) to visualize the peritoneal cavity. All the pelvic viscera can be seen clearly and an ectopic pregnancy diagnosed. This procedure is extremely disturbing to the patient and is not free from danger. Its popularity has not increased in recent years.

(*x*) *Culdosxopy :*

Has recently been found to be helpful in atypical cases of tubal pregnancy. A satisfactory view of the ovaries and tubes is obtained and the exact origin of the bleeding seen. W.T. Black and H. B. Turner from the University of Tennessee (XX) carried out the procedure on 60 patients and 45 of these were saved from an unnecessary operation. This procedure should be always carried out in an operation theatre.

(*xi*) *Hysterosalpingography :*

This is perhaps a most useful aid to diagnosis in cases of advanced abdominal pregnancy where the outline of the uterus can be made out. Tubal pregnancy in its early stages will show a triangular or slightly round uterus. The tubes may or may not be patent, for if the decidua fills the uterine ostia of the tubes no contrast medium will pass, but if the uterine decidua has been shed both tubes may admit the medium. It is unwise to perform hysterosalpingography in unruptured cases of tubal pregnancy because of the danger of rupture (Bourne and William XXI). Only in cases of suspected abdominal pregnancy when X-ray shows the foetus and there is any doubt about its situation should be hysterosalpingography employed as an aid to diagnosis.

(*xii*) *Laparoscopy:*

This recent procedure may help in Diagnosis in some early cases.

**Summary and Conclusions :**

1. A typical case of ectopic pregnancy can be diagnosed easily from the history and physical findings.

2. In an urgent case with diffuse intraperitoneal haemorrhage and collapse, diagnostic procedures have not much place as immediate decision and treatment are essential.

3. In an atypical case or abscure case, diagnostic procedures may be helpful.

4. Pneumoroentgenography, peritoneoscopy, culdoscopy and hysterosalpingography have a limited use and may not be free from dangers. Moreover, the first three require a special knowledge and special equipment.

5. A blood count and blood sedimentation rate are not of much help.

6. Pelvic puncture may be a most useful aid.

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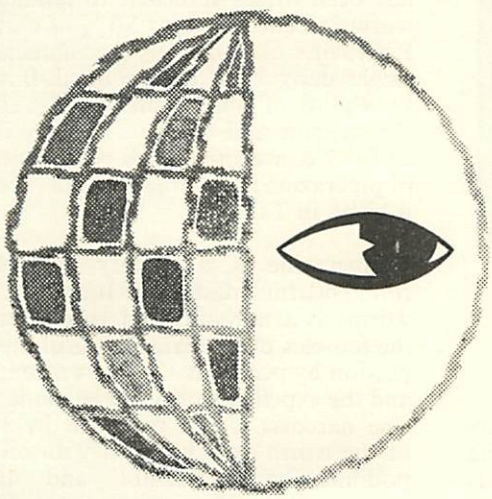
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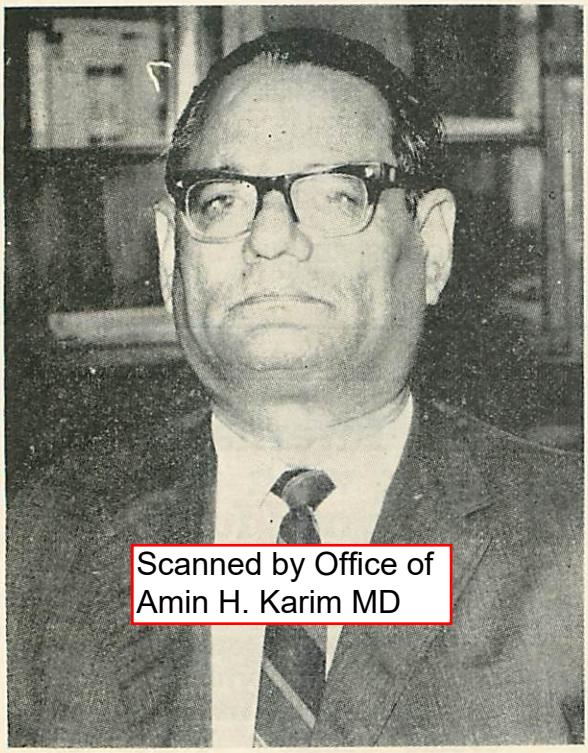


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# Drugs Employed in Nematode Infestation


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NEMATODES that infest man and harbour the intestinal canal include the thread worms (Enterobius), round worms (Ascaris), hook worms (Ankylostoma and Necator), whip worms (Trichuris), and strongyloides. Whereas Dracunculus and Filaria are the nematodes which are found in the sub cutaneous tissue and the blood.

**1. Drugs Employed in the Treatment of Intestinal Nematodes :**

Many of the anthelmintics effective against nematodes produce curative effect in more than one type of parasites and are therefore of greater value in mixed infections. Some of the drugs, however, have more specific action against a particular type of nematode infestation. The drugs employed against intestinal nematode infestations include.

**1. Piperazine :**

The discovery of piperazine as an anthelmintic is usually credited to Fayard, but this was already known to Boismare, a pharmacist whose reference appears in Fayard's work (14). The drug has been found to be highly effective against both the thread worms (Enterobius) and the round worms (Ascaris).

In the treatment of thread worms in children, piperazine has been reported to be more effective than Gentiian Violet (27,28). A single dose of piperazine, with or without the simultaneous administration of a purgative, has been found sufficient to eradicate thread worm infection in over 90% of children (27). Piperazine is generally recommended as a single daily dose before break-fast followed by a glass of water which carries the drug to the caecum and colon. Therapy is continued for 7 consecutive days. The dose schedule of piperazine in the treatment of thread worms is given in Table I.

Piperazine is also very effective against round worm infestation. It acts on the round worms as a narcotic and causes paralysis of the muscles of the parasite resulting in its expulsion by peristalis 12. The worm is not killed and the expelled worm can be made to survive. The narcosis is not preceded by stimulation of the worm as it happens with oil of chenopodium, hexylresorcinol and tetrachlorethylene. (12) The initial stimulation of the parasitemay result in knotting together of the worms and causes intestinal obstruction, or the worm may migrate into bile duct or appendix or may cause perforation of the gut

wall. Piperazine has also been reported to act as neuromuscular blocking agent in the worm(21) and to inhibit the production of succinate by ascaris, resulting in paralysis of the worm muscle and blocking of the stimulatory effect of acetylcholine(6).

Piperazine is readily absorbed from the gastrointestinal tract. A portion of the drug is degraded in the body and the rest is excreted in the urine(22).

Piperazine does not produce any pharmacological actions. The activity of the drug is mainly restricted to the parasitic worms.

Inascaris infestation a single dose of piperazine cures 55-85% of the cases. Therapy on 2 consecutive days eliminates about 95% of infections. The presence of food in gastrointestinal tract does not affect the activity of the drug against worm. The drug therefore, may be given at any time and without any preparation of patient before medication. The worms are passed out in the stools on the first, second or third day. The worms expelled are immobile but not dead. The dose regimen of the drug in ascariasis is given in Table II.

Piperazine is a safe drug. The side effects are very infrequent and consist of nausea, vomiting, headache, abdominal cramps and very occasionally urticarial eruptions. Neurological side effects like vertigo, tremors, incoordination, visual disturbances, muscular weakness may be observed in patients with chronic nephritis when the drug is given for 5 days or more (8). This may be the result of high blood concentration, due to defective excretion.

**2. Pyrvinium Pamoate** [*Vanquin*)

Pyrvinium, also known as viprynium Emboate, a cyanine dye is available as bright orange or orange red to almost black crystalline powder with no odour or taste. It is insoluble in water.

Pyrivinum has been reported to be highly effective against human pin worm infestation (23,24). The drug in doses of 5 mg/kg body weight cures 92% of infections. A second dose given one week later eliminates the residual infection. The drug is liable to colour the stools bright red and the patient should be forewarned.

Pyrivinuim is not absorbed through the gastro intestinal tract and does not produce any systemic actions.

Pyrivinuim is quite safe drug. However, nausea, vomiting and cramps have been reported in some cases with relatively large doses.

**3. Gentian Violet** (*Crystal Violet*)

A greenish-bronze odourless or almost odourless crystaline powder is sparingly soluble in water.

Gentian violet has been very commonly employed in the treatment of thread worm infestation before the introduction of piperazine. The drug in 65mg. doses three times a day is administered to an adult for 14-15 days. The children under 16 years age are given the drug in 10 mg. daily doses per year or age.

Crystal violet is usually well tolerated, especially by children, but it may cause nausea, vomiting, diarrhoea, griping, headache, dizzines and lassitude. Gentian Violet is also indicated in the treatment of giardia and strongyloides infections.

**4. Thiabendazole** (*Mintezole*)

A white or creamy white odourless, tasteless powder insoluble in water, has been reported to possess a high degree of activity against a wide range of nematodes. It has been successfully used against strongyloides, thread worms and hook worms.

Thiabendazole in dose of 25 mg/kg. body weight given after meals as a suspension three times a day and repeated after 7 days has been reported to give a cure rate of over 95% in thread worm infestation (28). In the mass treatment of helminthiasis, a single dose of 550 mg/kg body weight, preferably at night, has proved effective, but the incidence of toxic reactions is higher than when 2 doses of 25 mg/kg. are given.

In hook worm infestation, a dose of 25 mg/kg. body weight twice a day for 3 consecutive days has been reported to give a uniformly high egg count reduction and cure rate (11).

Thiabendazole is effective against Ascaris, Trichuris and Strongyloides and is therefore of special value in the treatment of patients having multiple infestations.

No dietary restrictions are necessary when the drug is being administered.

The most common adverse effects produced with thiabendazole are anorexia, nausea, vomiting epigastric distress and dizziness. Occasioally pruiitis, skin rashes, diarrhoea, headache, drowsiness, hypoglycaemia anthopsia and a decrease in pulse rate and systolic pressure may be observed.

**5. Santonin :**

Santonin, one of the oldest anthelmintics, is obtained from various species of artemesia plant. It is available as a white or colourless crystalline powder with no odour but a slightly bitter taste. On exposure to light it becomes yellow in colour. It is insoluble in water.

Santonin was very widely used in the treatment of enterobius and ascaris infestations before the introduction of piperazine. It acts as a vermifuge. The drug is reported to affect the neuromuscular system of parasite so that it is not able to maintain its position in the small intestine and is easily expelled with purgation.

Santonin is usually administered as powder or tablets once a day for 2 to 3 consecutive days. The drug should not be given empty stomach. It is generally given in 60 to 200 mg doses at bed time followed by a saline purgative first thing next morning. Castor oil must be used as a purgative since it may dissolve the drug and facilitate its absorption. Fats and alcohol should also be avoided for the same reason.

Santonin, in therapeutic doses, does not produce toxic effects, However, in some cases it may cause disturbances of colour vision, headache, nausea, and vomiting. Large doses may give rise to epileptiform convulsions followed by coma and death may result from respiratory failure.

In the presence of safer drugs, the use of santonin as an anthelmintic is almost abandoned.

**6. Hexylresorcinol :**

Hexylresorcinol is a non-specific anthelmintic effective against various types of intestinal worms.

Hexylresorcinol is white or almost white cystalline powder with a pungent odour and sharp astringent, numbing taste. It is very sparingly soluble in water.

Hexylresorcinol is an effective anthelmintic against round worms, hook worms, thread worms and the fish and dwarf tape worms. Piperazine has replaced it in the treat-ment of thread worm and round worm infestations.

For successful treatment with hexylresorcinol, the patient has to be prepared before hand so that the drug has contact with the parasites. Hexylresorcinol is administered by mouth as a single dose of 1G for adults and 100 mg per year of age in children upto 1 G. A saline purgative is given 2 hours after the dose and no food is allowed for 5 hours. The treatment may be safely repeated after 3 days. if necessary.

In the treatment of hook worm infestation 3 courses of treatment at intervals of 3 days may be necessary.

For the expulsion of dwarf tape worms, treatment may be given weekly for 3 weeks to ensure that autoinfestation does not occur.

The drug is not toxic, but may produce local irritation of the gastorintestinal tract.

**7. Tetramisole Hydrochloride :** (*Nilverm*)

Tetramisole is a new introduction against round worm infestation. A white odourless amorphous powder with bitter taste is reported to be active against round worm and thread worm infestation. The drug is recommended in doses of 1-2- mg/kg. body weight for effective treatment. The drug is safe and even much greater doses than therapeutic have been well tolerated without any alterations in liver function or the blood picture of the patient.

**8. Bephenium Hydroxynaphthoate :**
(*Alcopar*)

Bephenium hydroxynaphthoate is an anthelmintic which is effective against a variety of intestinal nematodes.

It is available as a yellow odourless crystalline powder with a bitter taste. It is insoluble in water and only a small fraction of the drug given orally is absorbed through the gastrointestinal tract.

Bephenium is effective against hook worms, both the Necator americanus and Ankylostoma duodenale (13,25). It is also effective against ascaris lumbricoides, trichostrongylus stercoralis and Hymenolepis nana. It has a moderate effect against whip worm infestation, but not against taenia saginata (19) The drug is also reported to expel heterophytes, a trematode which passes one stage of its life cycle in the small intestine of man (18).

Bephenuim is especially suitable for mass therapy in hook worm infestation because of the simplicity of administration without preparation of the patient and the lack of toxicity. It has proved 100% effective in patients moderately infected with A. duodenale and 62% effective in cases heavily infested (29). A single dose of 2 or 3 G of base or multiple doses given on successive days or 3 times on the same day have been reported to compare favourably in effective-ness with tetrachlorethylene. Ahmad and Rasool (1) found bephenium more effective and less toxic than tetrachlorethylene. The drug has been found to be particularly suitable for the treatment of patients with advanced anaemia, diarrhoea and heavy hook worm infestation, because of its low toxicity and because no purgation is necessary (13).

Bephenium is more effective against Ankylostoma duodenale than against Necator americanus. Bephenium is given to the fasting patient in a single morning dose of 5G for adults and half this amount for children under 2 years of age. No purgative is necessary. In severly infested patients the treatment may be repeated on 3 consecutive days or at an interval of 7 to 10 days. Bephenium may cause nausea, vomiting and diarrhoea, but is generally well tolerated. Good results without side-effects have been obtained in adults by a combined treatment of bephenium hydroxynaphthoate 5G with tetrachlorethylene 5 ml. This treatment has the advantage that bephenium is rather more selective against Ankylostome duodenale and tetrachlorethylene against Necator americanus (30).

The drug is least toxic. It is generally recommended in 2.5 G base, contained in 5.0G of bephenium hydroxynaphthoate, given twice a day. In case of Necator americanus the drug has to be repeated for 3 cons cutive days (16).

Nausea, vomiting and abdominal discomfort are the only side effects so far experienced in certain cases.

**9. Tetrachlorethylene :**

Tetrachlorethylene is closely related to carbon tetrachloride in its anthelmintic properties, but is less toxic.

Tetrachlorethylene is a clear colourless, heavy, mobile liquid with an odour like that of carbon tetrachloride. It is insoluble in water. Little is absorbed through gastro intestinal tract and therefore the risk of toxic effects is less. The presence of fat in the gastro intestinal tract promotes its absorption leading to toxic effects, hence fat in diet should be avoided during therapy with tetrachlorethylene.

Tetrachlorethylene is an effective anthelminitic against hook worm infestation and was considered to be the drug of choice before the introduction of bephenium. Telrachlorethlene is more effective against Necator americanus, but is not effective against other nematodes or trematodes.

Tetrachlorethylene is generally recommended in 3.0 ml dose given with or followed by a saline purgative 2 hours after its administration. However, this dose is not considered to be an optimal as a dose bigger than this has been reported to be well tolerated, producing few side effects and better therapeutic results. A single dose of 5.0 ml of tetrachlorethylene has been reported to be quite safe and has eliminated approximately 92% of worms (7). Doses of 4-5 ml may be safely given to adult patients and 2 such treatments at intervals of 10 days may be expected to cure patients with severe hook worm infestation. No appreciable toxic effects have been found even after 8.0 ml doses on the cardiovascular, respiratory, hepatic and renal organs (10).

The children are given a dose of 8.05 to 0.06 ml per pound body weight. The preparation of the patient is necessary for successful treatment. The patient is given a light meal at night preceding the treatment. No breakfast is given on the morning of treatment when the drug is given in 2 doses at one hour interval, followed 2 hours later by a saline purgative preferably sodium sulphate. Food is restricted till the bowels have opened. The food should be relatively fat free.

In case of mixed infection with round worm and hook worm, the round worm infestation should be first eliminated with a suitable anthelmintic before tetrachlorethylene therapy is given for hook worm infection. Tetrachlorethylene like its closely related compound, Carbon tetrachloride, may stimulate the round worms and produce serious complications.

Minor toxic effects have been reported in 10 to 50% of patients. These include diarrhoea, vomiting, headache, dizziness and incoordination. The drug is contra-indicated in liver disease and in patients whose general condition is poor. Good results are obtained without marked side effects by a combined treatment of tetrachlorethylene and bephenium (30).

**10. Bromonaphthol** (*Wormin*)

It is available as white needle shaped crystals with a naphthol like slightly bitter taste and is sparingly soluble in water.

The drug has been employed in the treatment of both types of hook worm infestation (17). and is also effective against whip worms. Bromonaphthol has been reported to be considerably more effective than tetrachlorethylene against both types of hook worms.

The drug is administered in 2 to 6G doses. It may be given as a single dose or in divided doses taken with large quantity of water. The side effects are mild when given in this dose schedule. They include nausea, abdominal pain, loss of apetite, dizziness and headache.

**11. Oil of Chenopodium :**

A colourless or pale yellow liquid with an unpleasant odour and a bitter burning taste, effective against round worm, and hook worm infestation. The anthelmintic activity is due chiefly to active principle ascardiol, an unsaturated terpene.

It is highly active against all kinds of nematodes. The anthelmintic activity is greater against Necator americanus than the Ankylostoma duodenale. No preliminary fasting or purging is necessary. A single dose of 2.0 ml is very effective, but the oil is nauseating and must be given in divided doses in capsules. Three capsules of 0.5 ml are generally administered at intervals of an hour and one ounce of magnesium sulphate is given 2 hours after the last dose of drug. Purgation after medication in especially important since the oil inhibits peristalsis and is toxic if absorbed. No food is allowed until after the purgative has acted.

The combined use of chenopodium oil and tetrachlorethylene is said to have given better results than the use of either drug separately; the usual adult dose being chenopodium oil 1 ml and tetrachlorethylene 3.5 ml.

Chenopodium oil may cause headache, vertigo, tinnitis, nausea, vomiting, temporary deafness, gastrointestinal disturbances and in severe cases of poisoning, kidney and liver damage, jaundice, complete prostration and death.

After the discovery of bephenuim the drug has gone into back ground.

**12. Dithiazanine** (*Telmid*)

A dark greenish crystalline powder, almost insoluble in water, a cyanine dye, reported to be particularly effective against whip worm, strongyloides, hook worms, Ascaris and Enterobius infestations in man (26). The activity against round worms and thread worms is less than that of piperazine. It is also less effective than bephenium and tetrachlorethylene against hook worms.

Dithiazanine acts as an anthelmintic by interfering with oxidative process and anaerobic reactions in worms (5,23). Dithiazanine is absorbed from the gastro-intestinal tract in very minute quantities. Nearly all the drug ingested is excreted unchanged in the stools which are stained blue. If the intestinal mucosa is inflammed, the drug gets absorbed and produces toxic effects.

The drug is administered orally in the form of tablets or suspension. The usual adult dose in whip worm infestation is 45 mg/kg body weight divided into three equal portions or 200 mg. 3 times a day for 5 days. If the dose is reduced to 1/2 on the first day of treatment the incidence of nausea and vomiting is reduced.

In strongyloidiasis, 100 to 200 mg of drug is given 3 times a day for 14-21 days according to the degree of infestation and the condition

of the patient. The cure rate in strongyloidiasis is excellent whereas in trichuriasis radical cure rate varies from 32 to 100% (25).

A total daily dose should not exceed 600 mg. No preparation of the patient prior to medication or purgation after therapy is necessary.

Children between the age of 5 and 10 years are given about half the adult dose. The dose in children may also be calculated according to the body weight. In the treatment of trichuriasis children over 20 lbs body weight get a daily dose of 50 mg/10 lbs body weight upto 300 mg. divided into 3 parts on the first day and double this dose on subsequent 4 days. For strongyloidiasis half of the dose calculated for trichuriasis in indicated.

Dithiazanine has an irritant effect on gastrointestinal tract and produces anorexia, nausea, vomiting, abdominal cramps and diarrhoea. These symtons are more frequent in the first day therefore the dose on first day should be smaller. The administration of drug after meals minimizes these side effects. Occasionally skin rashes, transient albumin-uria, oedema and fever may be produced. Deaths have occured following a fall in blood pressure, acidosis and coma.

## B. DRUGS EMPLOYED IN THE TREATMENT OF NONINTESTINAL NEMATODES

Filaria and Dracunculus differ from other namatodes in being not harbouring the intestinal lumen. Filariae, when adult, live in the lymphatics, connective tissue or other body tissues and cavities. The micro-filariae circulate in the blood or in the skin of the host. Dracunculus medinensis resides in the subcutancous tissue and emerges out of the skin.

The drugs employed in the treatment of filariasis include:

### [1] Diethyl Carbamazine (*Hetrazan*)

A white, odourless, crystalline, slightly hygroscopic powder with a bitter acid taste, is very soluble in water.

Diethyl carbamazine is effective against several species of filaria but more particularly against Wucheraria bancrofti and Loa Loa. In onchocerciasis and in W. malayi infections it is less effective and is liable to cause severe allergic reactions.

The piperazine ring in the strucure of the drug is probably of fundamental importance in the activity of the compound, though piperazine itself has no activity against filaria.

In the treatment of W. bancrofti infections with diethylcarbamzine the micro-filariae are rapidly eliminated from the blood stream. The drug has no direct toxic action on the larvae and it is thought that it may act by so modifying them that they are trapped by the reticuloendothelial cells in the liver sinusoids. This helps in limiting the spread of filariasis by the insect vector. The action on adult worms in slow and they may persist for several months, but after they have been eliminated, microfilariae do not reappear in the peripheral blood. Local reactions sometimes appear at the sites which commonly harbour adult worms.

In loaiasis, both micro-filariae and adult worms are killed. In onchocerciasis, the micro-filariae may be killed but adult worms are less affected.

Diethyl carbamazine citrate is administered by mouth in tablet form. In W. Bancrofiti or Loa loa infection the drug is given in 6 mg/kg. body weight daily doses for 3 equal portions. For mass treatment in endemic areas, 6 mg/kg. body weight given at weekly intervals to a total of 6 doses is effective. Diethylcarbamazine in 6 mg/kg. body weight daily doses given once a month for upto 12 months and repeated for several years has resulted in almost eradicating Bancroftian filariasis (15). Doses of 20 to 30 mg/kg. body weight have been given without serious side effects. In onchocerciasis and W. malayi infections a low initial dose should be given to reduce the risk of allergic manifestations.

Diethyl-carbamazine is also effective in tropical eosinophilia and is employed in 8 mg/kg. body weight daily doses for 8 to 16 days. The drug has proved to be safe and effective (9,20).

The side effects produced with diethylcarbamazine include, anorexia, nausea, vomiting, headache and drowsiness. These effects are sually mild and the drug is not to be discontinued. Allergic reactions due to release of foreign proteins in the tissue by the death

of adult worms or larvae include fever, tender swelling, muscular pains and skin rashes. These allergic reactions are more common with W. malayi and onchocerca infections. Serve allergic reactions are controlled with antihistamines or corticoids and by withdrawal of the drug.

**2. Suramin** (*Bayer* 205)

A white, pinkish white or slightly cream coloured odourless hygroscopic powder with slightly bitter alkaline taste and soluble in water, is effective against the onchocerca, especially the female worm. The drug acts on the adult filaria and has no direct action on microfilariae. The drug is generally given intravenously in an initial dose of 500 mg for an adult followed by 7 doses of 1 G each at weekly intervals. A total course of 160 mg/kg. body weight has been reported to be very effective againsy both the adult worm and the microfilariae (4).

Suramin gives rise to a variety of toxic reactions which very in intensity and frequency according to the nutritional conditions of the patient. Immediate reactions include vomiting, shock, oedema, pruritis and urticaria. Paraesthesia, hyperaesthesia of the hands and feet, photophobia and peripheral neuritius may be observed with in 24 hours of taking the drug. Damage to the kidney, agranulocytosis and haemolytic anaemia are serious reactions seen late after the therapy.

A number of antimony and arsenic containing compounds, given intramuscularly or intavenously, have shown some success against filarial infections. In general the trivalent compounds act rapidly on the micor-filariae and slowly on adult worms. The pentavalent compounds, on the other hand, exert their effect on adult worms and the micro-filariae disappear gradually from the blood over a period of months(2).

These compounds have not attained any clinical value for the reason that they produce unpleasent side effects, even serious toxic reactions and are to be given parentarally.

## DRUG USED IN THE TREATMENT OF DRACUNCULUS MEDINENSIS INFECTION

So far no satisfactory drug treatment for Dracunculus infection was available. Recently a drug, niridazole, has been reported to produce beneficial effects in this condition.

**Niridazole** (*Ambilhar*)

A yellow, odourless, crystalline powder, almost insoluble in water has been reported to be effective in guinea worm and amoebic infections. The drug has already been known to be the most effective agent against schistosomal infection.

Niridazole is a nitrothiazole synthesized in 1966. The drug is slowly absorbed from the gastrointestinal tract. After absorption the drug passes in the portal blood to the liver where it is metabolized. The metabolites, believed to be relatively inert, are slowly excreted in the urine and faeces. The urine is coloured dark brown.

In guinea-worm infection, the drug acts on the vitellogenic gland of the female worm and inhibits egg production. Male worms are less sensitive than the female.

Niridazole in 25 mg/kg. body weight per day for 7-10 days is the only available drug which can cure guinea-worm infestation. Pain, tenderness and swelling are rapidly relieved. The emerging worm is easily extracted and there is less tendency for fresh worms to emerge.

Niridazole is regarded the best drug in the treatment of schistosoma haematobium infection. The drug is administered in a daily dose of 25 mg/kg. body weight for 4-5 days. It is generally given in two equal parts administered twice a day and has been reported to cure a majority of patients. In S. Mansoni infection, niridazole in 25 mg/kg. body weight daily dose given for 7 days is as good as in S. haematobium and probably better than other drugs. In. S. Japonicum infection, the drug is as effective as in S. mansoni infection. However, it is not advisable to employ this drug for mass treatment of either S. mansoni or S. Japonicum infections for hepatosplenic involvement.

Niridazole is a powerful amoebicidal drug both for intestinal and extra intestinal disease, but other more safe drugs are preferred.

The toxic effects, mostly minor in character, include anorexia, nausea, vomiting and

abdominal pain. Headache and drowsiness has also been reported in some cases. These symptoms are all resversible and do not require withdrawal of the drug.

In a number of patients E C G changes appear 4-5 days after the begining of medication and may persist for 2-3 weeks after the stoppage of therapy. The changes observed in E C G are flattening or inversion of the T-wave often accompanied by tachycardia. These changes do not call for cessation of therapy.

Neuropsychic side effects, though transitory and reversible on withdrawal of the drug. can be very alarming. These are usually observed when the drug is given in the treatment of S. mansoni infection with heapatosplenic involvement. In such cases the drug does not get matabolized in the liver and reaches brain in large amounts. Episodes of excitement, euphoria, hallucinations, mental deterioration, generalised convulsions, localized muscle tremor and spasm. delirium loss of conciousness, confusion states and psychoses with suicidal tendencies can all appear from 4th day of treatment onwards. These effects can be minimized with barbiturates and tranquilizers. The drug must be immediately stopped when psychic symptoms appear.

A slight leucocytosis and eosinophilia have been reported in some cases. Mederate and temporary haemolysis may occur in patients who are dificient in Glucose-6-Phosphate dehydrogenase.

Niridazole should not be given in cases of epilepsy, behavioral abnormalities, marked impaired liver function, vascular shunt and of those of poor general physique.

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**TABLE I.**

**DOSE SCHEDULE IN THREAD WORM INFESTATION:**

| Weight In ibs. | Piperazine Citrate Syrup ml. | Piperazine Oxyhydrate G. |
|---|---|---|
| up to 15 .. | ; 2.5 | ; 0.25 |
| 16—30 .. | ; 5.0 | ; 0.50 |
| 31—60 .. | ; 10.0 | 1.00 |
| Over 60 .. | ; 20.0 | ; 2.00 |

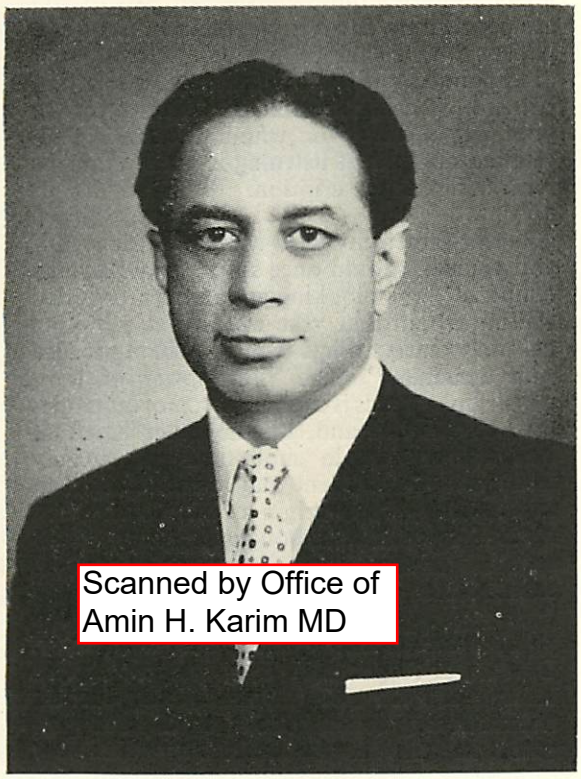
**TABLE II.**

**DOSE SCHEDULE IN ROUND WORM INFESTATION:**

| Weight in lbs. | Piperazine Citrate Syrup ml. | Piperazine Oxhydrate G. |
|---|---|---|
| 30—50 .. | ; 20.00 | ; 2.00 |
| 51—100 .. | ; 30.0 | ; 3.00 |
| Over 100 .. | 35.0 | ; 3.50 |

# LETTER TO A YOUNG DOCTOR COLLEAGUE

## entering into private Practice


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Amin H. Karim MD

Dr. M. A. QAYYUM
FRCS., DLO., DO., (ENG.) FACS., FICS.
Professor of Ear, Nose & Throat
Dow Medical College, Civil Hospital Karachi.

*My dear friend :*

Your wish to set up office as a practitioner is now being fulfilled at the end of your clinical training period as a house surgeon in this hospital.

My Congratulations! Instead of following in the comet's tail of the visit by the professor, I imagine you waiting for your first "Own" patients in your own dispensory, to devote all of your capabilities, your patience and your energies to them. You have been put through the paces of diagnosis and therapy by **studies** and **clinical practice,** having been led through the labyrinth of **differencial diagnosis,** to prepair you now to enter life, to a general practice of your own.

You are asking me, my friend, advice about the vital points in this type of work that is, so new to you in its way—to put it briefly;—**the Patient and You Yourself.** On the daily achievement or failure of this symbiosis, on the question whether it is good or bad your success will depend and with it your medical and human development as well as the confidence you gain or lose.

In the **hospital** you have **treated your patients by virtue of your office.** Your studies, **medical, degree,** and **your position** were your qualifications.

In your own practice, a liberal professional, **the patient is free to choose you for his physician,** to place his confidence in you. **It is your patient who grants you full power.** May be it is chance that leads your first patient into your dispensary, may be also the fact as a newcomer you are free as yet from negative experiences and prejudice. Later patients may be decided by sympathy, **successful cures** and **other imponderables, But in each case it is the patient, his family, or his colleagues who take the initiative.** The patient determines the partnership. **Your Competence, your Personality** and **your Patience** are only opportunities to make this relationship permanent. **To the patient seeking help, you are the projection of an ideal.** Whether you qualify as a tool of his wish-fulfilment does not depend on you alone as a "Curative agent", as a secret but especially **on the undisturbed continuity of the confidence the patient has placed in you.** It is up to you to fortify and maintain this trust. **UNCONDITIONAL CONFIDENCE. his PERSONAL NEED,** and his **WISH TO BE CURED** are the weights the patients places onto the highly sensitive scales of the relationship between physician and patient.

You yourself use as counter—weight **confidence in his cooperation, faith in his healing** and **your competence as a physician.**

The scales of trust rise or fall during the first encounter, whether at the dispensary or at the bedside. **The intuition of the patient concerning your medical personality has a**

**decisive effect on the negative or positive turn of the scales, whether** you are **rushed** or **unconcentrated,** whether you are **"quit there"** and are **listening an art which physician and spiritual advisor alike should bring to particular perfection your patient feels it like a blooded** horse senses the condition of its rider. Only if the patient does not remain merely homopatient, the suffering patient, **but can unburdon himself to "his physician" of all his physical and mental worries, of the things** that hurt him and make him ill, will be he fully able to put himself into his doctor's hands.

The **confidence** growing out of this relationship **is directed mainly to the physician as a Personality** and **only secondarily to t his medical capabilities and** the **equipment of his dispensary.** It is the necessary return service by the Physician to take his patient seriously as a Personality and thus activate mental and Physical healing forces.

In addition to listening, it is of major importance to have **time** for one's patient and to his objection and anxieties seriously as need as to show **benevolent patience** to any anoying and sometimes an aggressive type of self, righteons person, who professes superior culture.

Take care to prevent that your patients have to **wait** longer than absolutely necessary. This may easily be arranged by selfidicipline and a little organizational skill. Excessive waiting times interfere with the greatest readiness to confide not only while at home the baby is crying or a hungry family is waiting for its meals. **Convey to you patient a feeling that during his consultation you are there for him alone** and have time for him—and he will reciprocate by respecting yours. Because the patient is to treat the time of his physician with great care and not to consider his patience as a performance to which he is entitled by his sickness certificate. **Patience and time, both of them the most invaluable and rarest things in this world,** are at least as important for the efficient treatment of patients as is a comfortable hospital or a well-equipped practice. Strangely enough, those physicians who show sympathy to their patients always have sufficient time, while the impatient physicians never have time, although they do not accomplish more.

Patience like any real strength creates time. To this quiet strength of listening on the part of the physician the patient will show the greatest confidence, and this will restore his health, which does not consist only in a momentary absence of bodily ills but represents strength. **"He who has patience will succeed in everything"** should be the motto for this phase of your life and work.

You shall then feel as if you have received many and often quite unexpected gifts; if you are penetrating down to the real emotions of a patient who so far refused you access, or if disappointed patients, intimidated by the impatience of another doctor, find their way to your dispenssary, for whom the **medical advice born of patient listening** is bettle than the most complex prescription.

Never forget, my dear young friend, even if you yourself should once suffer from **"Angina temporis",** when looking at you over crowded waiting room that **"the words of a physician not only carry wings but are simply loaded with dynamite."** The vital power of the physician's words is capable of removing stones from a a heart, and, on the other hand, of building up whole mountains of anxiety fixations. The patient may be entitled to an explanation of the origin of his disease, but never forget that, although he may have enough common sense, he never passed an examination in Latin language.

The word of the physician has great power. Don't ever forget this! What may be a plain information to the physician, may become a dark mystry to the patient, or, if misunderstood, may feed hypochondriac spaculation.

You should explain his disease to your patient **just as you would tell you own mother.** Help him to understand his condition and the place his sickness is taking in his life.

**Refram from criticizing diagnosis and prescription of a colleague to a patient, because you might lose credibility and trust—learn to know you own limitations.**

Remember that each patient and doctor encounter has a medical and a paedogoical aspect. This self-education includes the training **to keep an inner distance.** This is the the foundation of every successful practice. It represents the fence which delimites your own life clearly and unmistakably from that of your male or female patient.—The smaller

the number of "friend" among you patients is. the greater that of you "Steady patients" will be.

This does not mean that in the course of your medical life. You will not be given an opportunity to form sincere and constant personal relationship where the initial relationship of physician and patient is changed into a friendship:.

The more you deal with the entire personality of your patient, the sooner you will gave an understanding of pychosomatic diseases.

The unconscious of the patient often builds up a very ingenious system of sabotage against the physician, which may find its expression in unjustified criticism against your therapautic measures, in report from the daily papers and magazines and in playing off one physician against the other. In this case it is possible to resolve the blocking of the patient—physician relationship by bringing the underlying mechanism of resistance out into the open.

Always recase, my dear young friend, the great medical task which does not consist in binding persons to one-self, but to enable them to live their own free life buy their own free will.

If the initative for an encounter between patient and physician at first was the patient, who was selecting "his physician", leadership and direction must remain in the hands of the physician, and this requires strength. For this reason keep you friendliness, you optimism and you good health.

These, in addition to knowing that we, too, are merely a very small molecule within the great big order, are the best condition for successfully practising the art of medicine.

"The physician is the servant of nature, and God is the master of nature. The art of the good physician is a gift of God. The patient is sent to him, and he is sent to the patient."

(*Paracelsus*)

*As ever,*
*Yours.*


*With Best Compliments*

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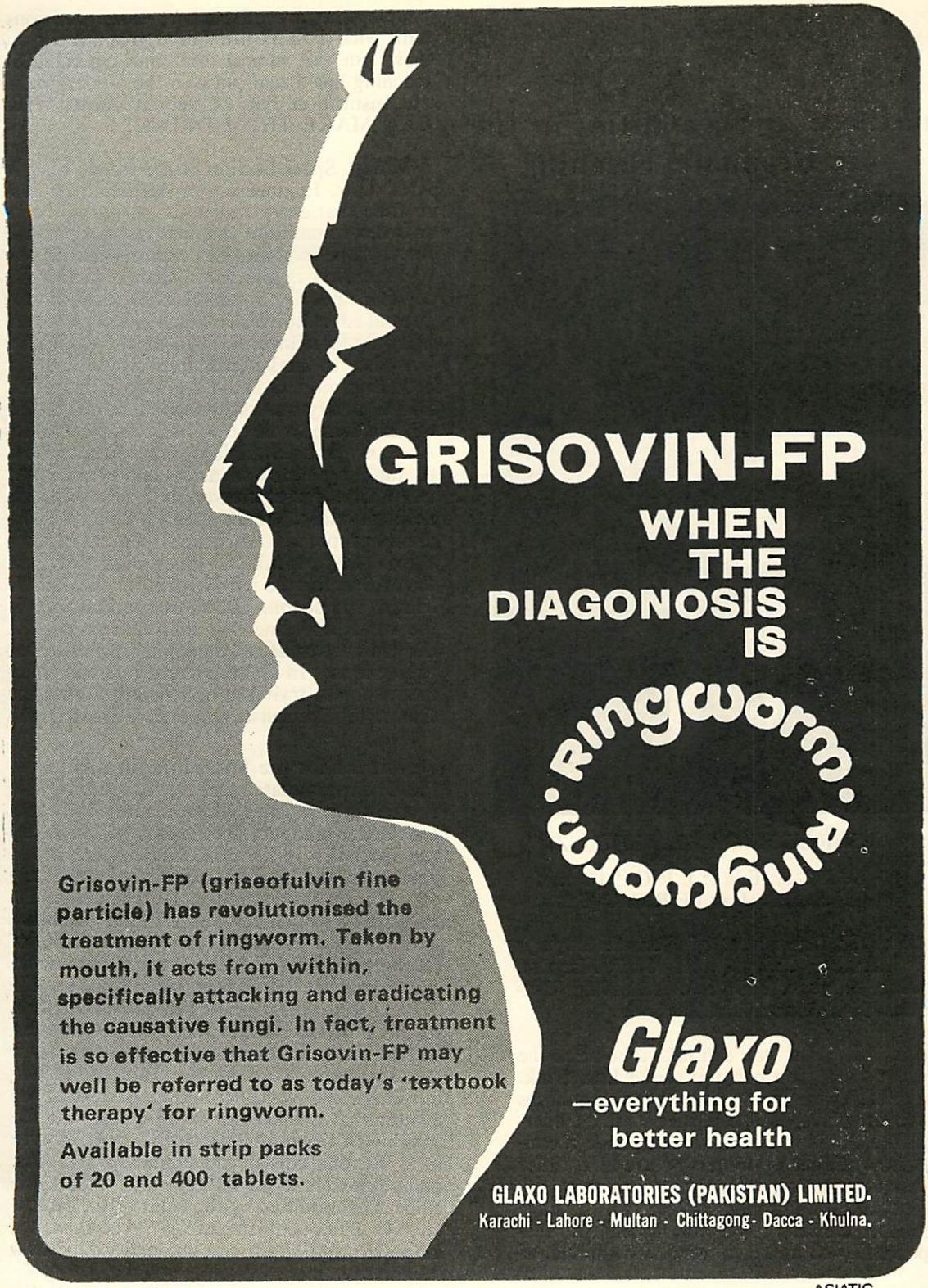

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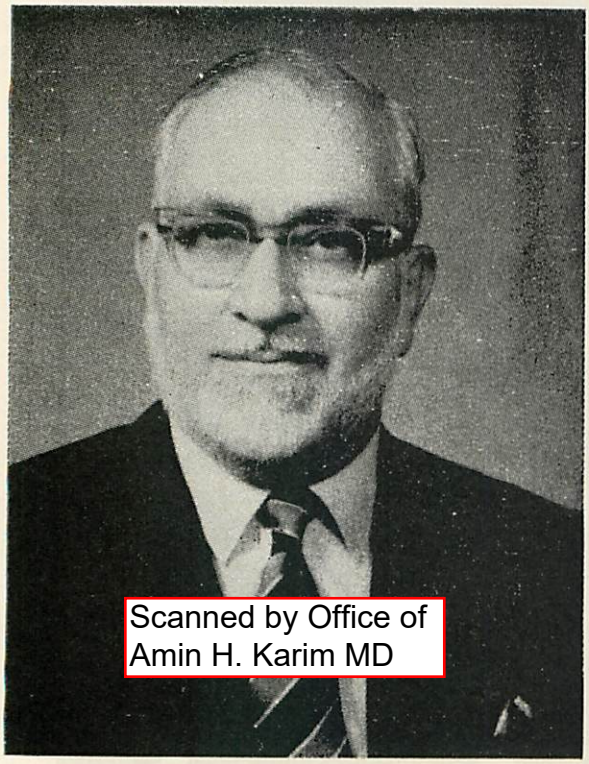
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# The Place of Specialities in the Under Graduate Teaching


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It is said that you can take a horse to the water but you can not make him drink.

I think, there can not be two opinions about the place of Specialities in the Under-graduate teaching but it is being made a controversial subject by some who are in a rather advantageous position to take arbitrary decisions and are trying to do so. I have therefore chosen to avail myself of this opportunity to reach a very wide circle of people who are affected by these decisions, with what I think are sound grounds for my views on the subject Viz. that Specialities teaching has a real place in the Under-graduate Institution but as quoted above WHO CAN MAKE THEM DRINK!

Today, Specialisation is the trend, be it in Arts, Law, Engineering or Medicine for it is realised that every subject is getting so extensive and voluminous that it is just not possible for any one individual to comprehend, less so to master, it in the short span of active life at his disposal. So much so, even from the general education a good deal is being cut out, not only to reduce the load on the Collegiate but also to make available more time for acquiring more detailed knowledge in specific fields. Every one knows how in our own field of Medicine even the basic subjects like Anatomy and Physiology are being reduced to shorter periods so as to allow more and more time for narrower and more specific fields of study. Indeed the idea of specialisation has spread to such an extent that in some places they speak of Specialists for the Right Eye, for the left Nostril, for the Middle Finger and so on. In short specialisation is the trend and one can find it from amidst the ordinary trades to the higher sophisticated professions. In fact the above refered gentlemen who are trying to be little specialities are themselves Specialists and that is the IRONY.

Now, as for the Specialities in relation to the Under-graduate teaching. It is the view of those whom I have already refered to that the Under-graduate should not be taught by the Specialists on the plea that they are under-graduates and that the Specialists are likely to teach on post-graduate level and that the Professor of General Surgery and Medicine and his Asst. Professors are quite capable of teaching the specialities. It reminds me of the occasion when the College was asked by the T.B. Directorate to send batches of Students to the T.B. Centre and the Ojah Sanatorium so that they could learn a little more in detail the exact methods of diagnosis and of tackling our Enemy No. 1.-Tuberculosis. Bang came the answer that a Professor of Medcine is quite capable of teaching Tuberculosis. Of course he is but one fails to understand how he was going to teach about Tuberculosis without the clinical material, as by the rules of the Hospital NO Tuberuculosis case is to be admitted in the Hospital! Nor can one understand how

a Professor of General Medicine and Surgery can teach any thing about, for instace Plastic Surgery, Cardiovascular Surgery, Neuro Surgery, Thoracic Surgery Dermatology, Neurology and their investigations etc., when all the clinical material for these subjects is isolated away in the specialist department. Is it that they do not want our under-graduate should have any knowledge of these subjects? Is it that they really want to put our Medical Graduates at par with the Quacks, Homeopaths and Ayurvads etc. and on the same Register as some Officialdom has been trying to, in the recent past? Oddly enough, in another context, these very people are voiceferous enough about the already lowering standards of our graduates. However, I would like to put forward here a few of the grounds on which I hold the view that the Under-graduate should and must have a period of attachment to the Specialist Units and should be given an introduction to the subjects of various Specialities.

1. It is obvious that the Under-graduate is the future Doctor. He may eventually be a General Practitioner or if one, with an academic bend of mind may go up to post-graduate studies and specialisation. If he is to be a General Practitioner he should have an idea of what can be attained by specialists in different fields. He should have seen during his clinical training an Oesophagectomy, a plastic repair of defetcs and deformaties. He should have seen Mediastinal Tumours and Lung Cancer tackled. He should have seen Head Injuries and Brain Tumours diagnosed and treated for him to be able to guide the all ignorent patient. How else can he know what can be attained by the Specialists and in Our Own Country. How often, we have heared it said Oh! nothing can be done further or at best nothing can be done Here" and patients are held on to mere Placebos by the general practitioner. I have personally come across a number of such cases where there has been an almost criminal neglect. How tragic and how sad that so vital a man as the General Practitioner in the chain of our Health Services should be so handicapped.

If on the other hand he believes specialisation, then having gone through the various specialities, he may taken a liking and may have been impressed enough, by one of them, to take it up instead of groping in the dark after graduation not knowing what to specialise in. In fact, that is how I personally decided to take up my speciality having been impressed in my student days by one of Aurgem Roberts the famous pioneer Chest Surgeons and his work. There has to be a meeting for the cord to strike. There is not enough time after graduation to go through all specialities to find out one's own aptitude.

2. An argument is put forward that the Specialists are apt to teach on a post-graduate level. How false an argument! If it is conceeded that a specialist is one who has mastered a subject, then surely a master in any subject or Art can wield that subject or art better than any one else. He can enlarge it, he can reduce it, modify it or present it in any manner that he is required to. He is a master and not a Jack of all Trades. In other words, he knows best how to cut the cloth to the required size. What kind of a specialist will he be if he can not talk to a particular level of audiance in a particular way! If this argument had any substance then no Professor of Medicine or Surgery should teach the under-graduate for, a Professor is supposed to have very wide knowledge of the subject far beyond even that of a post-graduate. How does he manage to keep his level down to the under graduate or is it that our Professors are not really beyond the under-graduate level? On the basis of this argument then, the right people to teach the under-grate are perhaps the General Practitioners who certainly can not teach beyond under-graduatelevel.

3. It is obvious that the syllabus for the Medico covers each and every one of the speciality subjects e.g. Neurology, Urology, Dermatology, Cardiovascular Surgery, Thoracic Surgery, Neuro surgery and even Plastic Surgery etc. and lectures and clinical teaching of these subjects has to be done, be it in two lectures or ten. Why can not the Specialist in that particular subject do that teaching? Can any one deny that an Empyema has to be taught, a Carcinoma Lung has to be shown and a success-Oesophagectomy to be seen by the under graduate! Why can't the specialist do that teaching and show those cases. Why can't a Plastic Surgeon show what a Cleft Palate is and how and when it is tackled. Why can not the Cardiologist teach the latest and best methods of dealing with a Coronary- a very serious and increasingly common emergency today. All that is required is to indicate the extent of the subject to be taught as per the requirements of the University. Further, as pointed out above all this Special clinical material is segregated in the specialised departments how then can the Professor of general Surgery and Medicine teach these

things without the clinical material. They can do so only by sabotaging the arrangements and taking in these specialised cases. Then why have the Specialities.

4. It is to be noted that the designation of all these Specialists as well as the other Surgeons and Physicians, is Assistant Professor and they are attached to the College. What on earth is a Professor or Assistant Professor in a college for, if not for teaching. His very designation implies teaching. It is his duty and preveilege to teach and those that are trying to stop it are doing it through shere ulterior motives and obstinacy of the type we have been witnessing recently in our country. Professors and Assistant Professors are appointed not to show the physicial strength of the college but the teaching strength.

5. It may also be noted that the Pakistan Medical Council stresses the need to use the staff of the college in the best manner possible in the teaching of the students. What better use can there be for the specialist Asst. Professor than to teach his own subject.' Subject in which he is a master-Subject which he can handle with ease. After all he is on the staff of the college and has got to be utilized.

6. It is a rule of the Medical Council that the requirement for the post of a Professor is 5 years standing and 4 years teaching in the subject and as we know there are Chairs in many of the Specialities and there are likely to be in others also. If the Asstt. Professors of specialities are not to teach, how will they ever qualify to aspire for a Chair in their subject. Or is it that our friends refered to above aspire to occupy two and three Chairs at the same time . Perhaps they do but it is obvious that when one tries two to sit on two chairs, he is neither on one or the other.

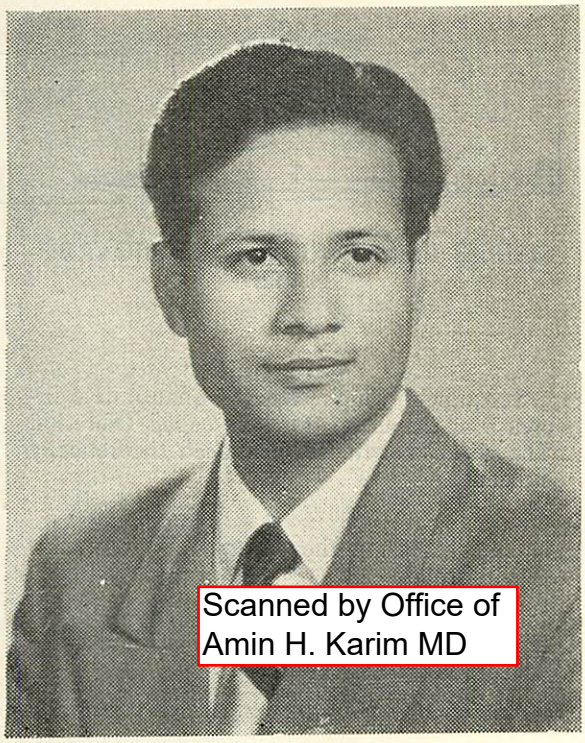
7. If the Assistant Professors of Specialities are not to teach because they are specialists and are likely to teach on a higher level may I ask what is a Gyenecologist, an Eye Specialist and an E.N.T. specialist' Are they not Specialists? In fact are not the Professors of General Surgery and Medicine themselves Specialists? How do they teach to the undergraduate. Are they not the great Meisterels?

8. There is yet another absurdity. It is said that there are two cateogaries of Specialities—the Essential and the Non essential. To add insult to injury, they ascribe this catogarisation to the august body of the Medical Council. I can not believe any Medical Council who is in touch with modern trends and teaching could ever catogarise in this manner. How could you say that Dermatology is unessential—ask the man who has an Itch. How could you say Neuro Surgery is unessential—ask the man whose son has been knocked down in a car accident and has a head injury. How could you say Cardiology is not an essential speciality'— ask the man who has a Coronary attack and whose life is hanging in the balance. Does he not want the General Practitioner who reaches him first, to know the latest and the best method of dealing with this catastrophy. Finally, how can one say that Thoracic Surgery is unessential in the present day when it is perhaps the most progressive branch of Medicine? Essential Specialities, I believe are Paedriatrics, a subject which any physician should be able to tackle and Orthopaedics wherein every bone will unite and heal with the immobility consequent to the fracture, only at its worst it will be a little out of alignment. It is not meant to belittle these two specialities. I will be the first one to utilize the services of these specialists, God forbid, if the occasion arises. It is only meant to show how any subject can be made light of and called unessential. However, if the Medical Council is of this opinion then there is only one explanation and that obviously is that these very gentlemen refered to above are on the Council as well. It sounds very much like 1st and 2nd class citizens.

9. Finally it is odd that while me are so ready to fellow the West in many frivolities and superfecilaties, we do not care to follow them in their more mature actions. Any one who may have been abroad in recent years would have seen that in the teaching institutions the students are posted to all the speciality units during their clinical teaching. In fact if the Professors care to recall at the recent lecture by Prof. Carstairs, Professor of Psychatery and a leading Psychologist of U.K., at our College, he had stressed the importance of having a definate number of beds in that speciality in a teaching institution and the posting of students to the department. Surely he knew what he was talking about.

I have had my say, starting with a saying from the English world that you can take a horse to water but you can not make him drink and now I will conclude with a wiser and more potent persian saying *Ger Der Khanai Kess Asth—Hameen Harf Bass Asth.*

# Diuretics And Their Clinical Use


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THE functional unit of the kidney is **nephron** of which there are one million in each kidney. Each nephron consists of a renal tubule and a **Bowman"s Capsule** which is the terminal dilatation of the renal tubule. Each Bowman's capsule contains a tuft of capillary vessels known as **Glomerulus** and both the Bowman's capsule and glomerulues together are called **Malpighian corpuscle.** The Bowman's capsule is lined internally by endothelial cells. The nephrons drain via the collecting tubules into the renal pelvis and thence into the ureter.

*Secretion of urine involves :*

1. Glomerular filtration

2. Modification of tubular fluid by tubular activity.

For glomerular filteration to take place the force of blood pressure in the glomerular capillaries is required to be more than the opposing osmotic pressure of plasma proteins. If some how glomerular filtration force is reduced e.g. hypotension due to any cause, the urine secretion becomes scanty (Oliguria) and even-eventually anuria results.

The normal daily volume of filterate is about 180 liters. Tubular reabsorption reduces this large volume by 99%. The net result is 1-2 liters of hypertonic urine. This reduction is due to the tubular functions.

*Renal tubules have three functions to perform:*

1. Slective reabsorption of certain constituents of filtrate for return to the blood.
2. Passive diffusion between tubular urine and blood of substances like urea, alcohol and volatile anaesthetics.

3. Active secretion into the tubular urine of certain ions and drugs.

**1. Selective reabsorption :**

During the passage of the glomerular filtrate through the proximal tubule 80% of the filtrate is returned to the blood by a highly selective but not indiscriminate process. This includes absorption of salts, glucose and water. Excess salts, waste products like creatine and foreign substances like inulin and many drugs are allowed to pass unabsorbed. This process of selective reabsorption is

controlled by enzyme systems of the cells lining the renal tubules.

With selective reabsorption of each anion e.g. cl, a cation will be transported to blood e.g. Na and with each such molecule of salt approximately 7cc of water will move towards the blood stream. The enzymes responsible for cl absorption are inhibited by mercurials and thiazidas. Enzyme responsible for glucose absorption is inhibited by phloridzin.

**2. Passive diffusion between tubular urine and blood:**

There is a group of substances like sulphates, nitrates, sucrose and mannitol which readily appears in the glomerular filtrate and are not selectively absorbed by the tubular cells. These, therefore, carry with them an isosmolar quantity of water. This mode of diuresis is known as osmotic diuresis and the substances are classified as osmotic diuretics. Urea is also an osmotic diuretic but 50% of it diffuses back through the tubular wall into the blood.

The selective reabsorption of water occurs in the distal tubule and is promoted by the antidiuretic hormone (ADH) of posterior pituitary. Urine is, therefore, concentrated. Lack of secretion of ADH under conditions of excessive water drinking produces diuresis.

**3. Active Secretion into the tubular urine; Carbonic anhydrase and the renal tubular function :**

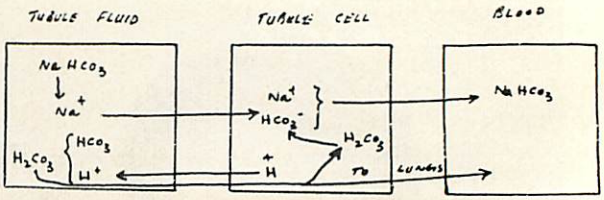
Carbonic anhydrase is an enzyme present in kidneys, gastric mucosa, pancreas, brain and red cells. It catalyses carbonic acid (H. HCO3) from carbon dioxide and water.

carbonic anhydrase

$$CO_2 + H_2O \text{———} H.\ HCO_3$$

H ions in the tubular cells make possible the exchange of H + for Na + in the tubular urine and lead to the reabsorption of bicarbonate.

Carbonic anhydrase is inhibited by acetazolamide and absorption of Hco3 is inhibited. Should the tubular enzyme system be overloaded and is beyond the reabsorption capacity of the tubular cells, the unabsorbed fraction will carry with it in the tubular lumen an isosmolar amount of water and so cause, diuresis.




SIMPLE REABSORPTION OF BICARBONATE

Substances which cause a quantitative increase in the urine flow are called **Diuretics.** The diuresis can be produced theoretically either:

1. By increasing the volume of glomerular filtrate, or

2. By diminishing the amount of fluid reabsorbed by the tubule.

| | Filtered by glomeruli | Reabsorbed by tubules | Urine volume |
|---|---|---|---|
| Normal | I80.0 litres/ 24 Hrs. | I78.2 litres/ 24 hrs. (99%) | I.8 litres 24 hrs. |
| Glomerular filtration increased by I0% | I98.0 litres/ 24 hrs. | I96.02 litres/ 24 hrs. (99%) | I.98 litres 24 hrs. |
| Tubular reabsorption decreased by I% | I80.0 litres/ 24 hrs. | I76.4 litres/ 24 hrs. (98%) | 3.6 litres 24 hrs. |

A drug may be given which will increase glomerular filtration by 10% and, if tubular activity remains unaltered, the increase in urine volume would be 10%. If, on the other hand, tubular reabsorption were dimi-

nished by as little as 1% the urine volume would be doubled. The most efficient diuretics are thus, those which act by diminishing tubular reabsorption. They are called PRIMARY DIURETICS, and the diuresis is produced by a direct action on the renal functions.

*Primary Diuretics:* The Primary diuretics are sub-classified as:

1. Inhibitors of the tubular enzyme systems:
   (A) Inhibitors of Na transport:
      (*a*) Organic mercurials—Merselyl
      (b) Halogenated heterocyclic hydrocarbons,
         (i) Disulfamyl compound—Benzothiazine.
         (ii) Monosulfamyl compounds:
            Frusemide
            Quinethazone
            Chlorthalidone
         (iii) Des—sulfamyl compounds—ethacrynic acid.

(B) Inhibitors of H—for Na—exchange.
   (a) Carbonic anhydrase inhibitors—Acetazolamide.
   (b) Potassium Salts
   (c) Ammonium Chloride

(C) Inhibitors of adrenal steroids:
   (a) Spironolactone
   (b) Amphenone

II. Osmotic diuretics:
   (a) Certain salts like sulphate, nitrates.
   (b) Sugars like sucrose and mannitol.
   (c) Urea.

III. Inhibitors of ADH secretion; water, alcohol.

*Secondary Diuretics* :- The diuretics which permit renal water loss by an extra renal action are called SECONDARY DIURETICS and are sub-classified as :

I. Cardiac glycosides e.g. digitalis, which increases glomerular filtration by action on the heart and resultant increase in cardiac output.

II. Xanthines, especially theophylline which opens up the renal blood vessels by a direct action on their musculature.

III. Colloid and plasma volume expanders; albumin, Dextran etc.

IV. Cation exchange resins.

V. Dopamine.

## A. INHIBITORS OF SODIUM TRANSPORT

### (a) Organic Mercurials :

Organic mercurials are reliable and most powerful diuretics. These have to be injected intramuscularly and dose is 0.5—2 ml.

The initial dose is small i.e. 0.5 ml. and is only a precutionary measure in detecting patients with idiosyncrasy. Mercurials act by temporarily combining with SH groups of the enzyme concerned with chloride reabsorption. Large quantities of chloride associated with isosmolar amount of water. They are irritant to tissues and are commonly given deep intramuscularly. Theophylline is included for pharmaceutical reasons. It enhances stability of the solution. Theophylline is also a strong diuretic but the quantity present is too little to contribute significantly to the diuretic action of the preparation.

Mersalyl is readily absorbed from the injection site and is eliminated 50% a the end of 3 hours or more than 90% by the end of 24 hours. Diuresis begins in 2—3 hours, is maximal at 8 hours and passes off in 12—24 hours. The injection should, therefore, be given early in the day to ensure that the diuretic effect is over by the evening.

**Untoward effects :**

1. *Due to hypersensitivity :*

Patients sensitive to mercury may develop excessive salivation, diarrhoea, albuminuria or haematuria, shivering, fever, headache, nausea, vomiting and a red blotchy rash are allergic manifestations.

**2. Due to mercury :**

Intravenous injection should not normally be given. Though this route has the advantage of painless injection, quick onset of action and more intensive effect of shorter duration, the risk to the patient is much greater and sudden death may occur due to toxic effect of mercurial on myocardium. Skin rashes of various kind i.e. eythema, urticaria, petechial spots may occur and these may proceed to exfoliation. Signs of chronic mercury poisoning include proteinuria, haematuria, diarrhoea and hypersalivation. Such poisoning responds to Dimercaprol.

**3. Due to diuresis** (*Secondary toxic effects*) :

Excessive ıoss of sodium, potassium and water may be seen as secondary effects.

Chloride depletion may produce mercurial unresponsiveness and can be restored by giving ammonium chloride 2 G. 4 Hourly for 2 days.

Sodium depletion may accompany chloride depletion and cause malaise, weakness, drowsiness, muscle pains, mental confusion and hypotension. Hyponatraemia will produce extra renal—uraemia. These symptoms are reversible by giving added quantities of common salt.

Potassium depletion is manifested clinically in the digitalised patient by the appearance of signs and symptoms of digitalis poisoning. Previously it was attributed to mobilisation of digitalis in the oedema fluid. It is now established that the potassium loss from the body sensitises the heart to the action of digitalis.

The management of such cases lies in the stoppage of digitalis and giving potassium supplements.

When mersalyl and ammonium chloride fail to be diuretic in the fully digitalised oedematous patient an intense diuresis can often be induced by giving aminophylline intravenously 3—4 hours after the dose of mersalyl. At this time the mercurials are acting fully on the tubular cells and aminophylline by causing an increase in the glomerular filtration rate, delivers a large load of chlorides to the tubules which cannot be absorbed and, therefore, excreted.

**[b] Halogenated Heterocyalic hydrocarbons:**

(*i*) **Disulfamy Compounds :**

**Benzothadiazine (Thiazine) diuretics :**

| | |
|---|---|
| Cholorothiazide | Bendrofluazide |
| Hydrochlorothiazide | Cyclopenthiazide |
| Hydroflumethiazide | Polythiazide |

They have a weak carbonic anhydrase inhibitor effect. Thiazides promote Na & Cl excretion by interfering with the enzymic activity of the renal tubules. They have an additive effect with mercurials. Continued use may lead to severe potassium deficiency. This is probably due to a low intake of sodium and a high excretion of potassium. Thiazide diuretics promote exchange of sodium for potassium in the distal tubule with subsequent rise in excretion of potassium.

Thiazides also have HYPOTENSIVE ACTION. This is due to their direct action on the blood vessels reducing peripheral resistance.

Thiazides reduce the volume of urine in DIABETES INSIPIDUS. The mechanism of action is not known.

Thiazides produce metabolic disturbances. They may aggravate established diabetes mellitus or may bring to light latent diabetes. They should, therefore, be used with caution in patients suffering from diabetes mellitus. Thiazides may also precipitate an attack of gout. Thiazides probably block urate formation in the tubular cells leading to hyperuracaemia.

**Side Effects :**

Potassium depletion may cause general malaise, anorexia, muscle weakness and increased digitalis sensitivity in digitalised patients. If thiazides are used in hepatic cirrhosis potassium depletion may precipitate

hepatic coma. Regular supplements of potassium are, therefore, necessary. Skin rashes, thrombocytopenia and agranulocytosis have occasionaly been reported. Other side effects are due to metabolic disturbances i.e. hyperglycaemia and glycosuria, attacks of gout due to hyperuracaemia. The comparable doses of various thiazides are as follows:

| | |
|---|---|
| Chlorothiazide | 500—1000 mg. |
| Hydrochlorothiazide | 50— 100 mg. |
| Hydroflumethiazide | 50— 100 mg. |
| Bendrofluazide | 0.5— 100 mg. |
| Cyclopenthiazide | 0.5— 1 mg. |
| Polythiazide | 1— 4 mg. |

**Hydrothiazides** :-

**Hydrochlorothiazide—Hydro flumethiazise :**

They have 5—10 times more of sodium excretion activity than Chlorothiazide, though they cause less carbonic anhydrase inhibition.

**Bendrofluazide:**

It is ten times stronger than hydrothiazides and is usually given in a single morning dose of 5—10 mg. Further it is 100 times more potent than thiazides.

**Cyclopenthiazide:**

It is 1000 times stronger than thiazides and the usual morning dose is 0.5—1 mg.

**Polythiazide :**

It has a longer duration of action.

**[i] MONOSULFAMYL COMPOUNDS**

**Quinethazone:**

Sodium excreting power is comparable to other benzothiadiazines while potassium is excreted to a much lesser degree. The effect is rapid and relatively prolonged, beginning within 2 hours, reaching a peak at 6 hours and lasting for 18—24 hours.

**Chlorthalidone:**

It has a prolonged action of 48—72 hours and is often indicated in patients refractory to other agents. Hypersensitivity and most cases of severe renal or hepatic disease are the only contraindication to its use. Available in 100 mg. scored tablets. The usual dosage is 50-100 mg. (1/2—1 tablet) on alternate days.

**Frusemide:** *Lasix**

Frusemide has a chemical similarity to thiadiazine diuretics. The diuretic response begins within 30 minutes and is complete within 4—6 hours. It often succeeds when other diuretics fail and can also create electrolyte imbalance rather easily. The dose is 40—120 mg. daily, can be repeated depending upon the requirements. Potassium supplements are necessary. Frusemide may also be given intravenously or intramuscularly in a dose of 20 mg.

**[iii] DES-SULFAMYL COMPOUNDS:**

**Ethacrynic Acid :**

It has high power of activity in inhibiting the renal tubular enzyme system. Therefore, the mechanism of action is very similar to organic mercurials. Ethacrynic acid inhibits tubular sodium reabsorbtion both proximally and distally.

Like thiazides, ethacrynic acid causes uric acid retention and may precipitate an attack of acute gout. It might possibly have hypotensive properties but further trial results are awaited.

(B) INHIBITORS OF H FOR Na EXCHANGE

(a) Carbonic Anhydrase Inhibitors.

*Acetazolamide*, 250—500 mg. daily, It is a powerful inhibitor of carbonic anhydrase. Carbonic anhydrase catalyses formation of carbonic acid from Co2 and H20

$$Co2 \quad H20 \longrightarrow H.\ HCo\ 3$$

The enzyme, therefore makes available a supply of H and HCo3 The H ions in the tubular cells make possible the exchange of H for Na in the tubular cells & leads to reabsorbtion of bicarbonate and to the acidification of the Urine. Lack of carbonic an-

hydrase due to acetazotamide leads to inadequate formation of H. HCo3 and therefore enough H ions are not available for exchange with Na. Therefore, bicarbonate absorption cannot take place which in turn is excreted with associated base and isosmolar quantity of water. Plasma chloride remains normal and excessive HCo3 is excreted producing acidosis. The diuretic effect lasts for 8—12 hours.

**Effects other than diuretics :**

Acetazolomide diminishes the secretion of aqueous humor in eye due to inadequate availability of HCo3. The drug has therapeutic usefulness in glaucoma.

Acetazolomide has an anticovulsant effect probably due to carbonic anhydrase inhibition.

*Topic effects :* 1. Primary: Sensitivity reaction similar to other sulphonamides.

2. Paraesthesae of face, extemities & drowsiness

3. Secondary effects due to excessive diurisis (already described under mercurial diuretics).

**Therapeutic uses :**

1. As a Diuretic in oedema due to cardiac, renal and hepatic disease.

2. Anticonvulsant.

3. In glaucoma.

When unresponsiveness to organomercurials is due to hypochloraemia acltazolomide can be given to promote excretion of HC03 and to restore the diuritic response to murcury but a more reliable way of restoring the plasma a chloride level and the diuretic response to mercury is to give Ammonium Chloride in Capsules.

**[b] Potassium Salts :**

The H ions are exchanged for Na in the distal parts of the tubule. This exchange is depressed by the secretion of potassium ions. The number of Na ions absorbed in exchange for hydrogen ions falls and kidney excretes an alkaline urine rich in Na which carries with it an isosmolar quantity of water with a net loss of extracellular fluid and electrolytes.

**[c] Ammonium Chloride :**

It is an acidifying salt, With these salts urine chloride excretion increases for 3—4 days and then it becomes constant. Sodium exretion increases during the first 2 or 3 days of ammonium chloride therapy and diuresis occurs. Renal sodium excretion then diminishes as ammonium ions are excreted in exchange for sodium and urine volume returns to control levels.

Ammonium chloride is rapidly absorbed from the intestines and in the liver NH3 is utilised to form urea by interaction with H.H Co3. The HCl so produced lowers the blood alkali reserve of plasma with the production of H. H Co 3.

$$NaHCO_3 + HCl \text{——} NaCl + H.HCo3$$

There is; therefore acidosis. In the early stage increased excretion of basic ion Na occurs along with isosmolar quantity of water. As the acidifying agent accumulates acidosis develops. The renal response to acidosis is to conserve base by secreting a more acid vrine by forming from ominoacids.

Ammionium Chloride is contraindicated in advanced real discase when the stubules are no longer capable of maintaining acid base balance.

## (C) INHIBITORS OF ADRENAL STEROIDS

(*a*) *Spironolactone:* The natural mineralocorticoid, aldosterone is secreted in the zona glomeulosa of the adrenal cortex. Its secretion is stimulated to a greater extent by a high K intake or a low NaCl diet.

Aldosterone produces retention of Na by an action on the renal tubules and excretion of potassium. Sodium content of Saliva, sweat and intestinal secretions is also reduced. With excessive doses hypertension and ocdema also appears.

Primary aldosteronism occurs in patients with aldosterone secreting tumours. The urinary excretion of aldosterone is increased in certain oedematous states such as cardiac failure, nephrosis clampsia and cirrhosis of liver with ascites since the intravascular volume is reduced and a state of phyiological dehydration exists. Nature tends to conserve the intravascular fluid by excessive secretion of ADH and aldosterone. This condition is, therefore, known as secondary aldosteronism.

Sodium retaining effects of aldosterone can be inhibited by spironolactone (Aldoctone A 25 mg Searle, 25—50 mg. 6 hourly). Spironolactone inhibits the sodium retaining action of aldosterone on the renal tubules. It probably acts by competitive inhibition displacing aldosterone from the receptor sites. mainly on the distal tubules. The sodium excretion effect is, therefore, potentiated when given together with organomercurials or thiazides which block Na reabsorption in proximal tubules.

Sprinolactone, therefore causes excretion of Na and retention of K, It is contraindicatin the presence of hyperkalaemia since it may further raise the blood potassium levels. Drowsiness and mental confusion is occasionaly seen during treatment and transient erythematous rash may occur.

(*b*) *Amphenone:* Amphenone suppresses the synthesis of 17 hydroxycorticoids provoked by ACTH. It also reduces the secretion of Aldosterone. Aldosterone suppression as described above will cause increased urinary excretion of Na and reduction of K exeretion. It has not been used extensively in therapeutics since it produces nauses, vomiating, skin eruptions, methaemoglobinaemia and liver damage.

*II. Osmatic Diurities*:- Osmotic diuretics are not used in therapeutics.

*III. Inhibitors of ADH* i.e., water & alcohol

*Cation Enchange Resins*:- The capasity of cation

The capacity of cation exchange resons "Katonium" is limited. These resins contain H, NH4, or Na for each Na absorbed a H, NH4 or K is given up. The resins have more affinity for K and hence these contain some quantities of K to prevent the occurrence of hypopotassaemia.

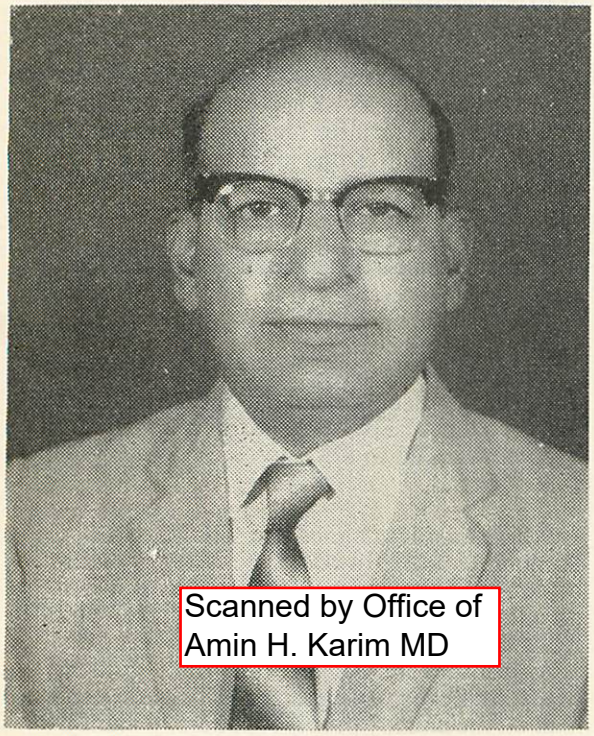
The onset of diuresis is slow. Such resions are useful in oedema of nephrosis where murcurials may be harmful but where renal function is poor dangerous uncompensated acidoses may result.

*Plasma volume expanders:* albumin and dextran.

They are of very little importance as diuretics except when oliguria is due to reduced blood volume. For example, following severe hypotension due to any cause.

Where the plasma albumin falls below 30% odedema is likely to occur. This happens incylonsis replacement of blood proteins is impracticable because of the high cost and secondly the transfused proteins rapidly disappear and thirdly the electrolyte content of the transfused plasma imposes an additional load on the already poorly functioning kidney.

# Rural and Urban Health Services


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THE dilemma of providing basic health services, mainly to the rural population and generally to the urban people remains unsolved. Time and again deliberations in the shape of seminars, conferences, clinical meetings, surveys, study groups and discussions at various levels have been held with the idea of evolving a solution for rendering adequate health services to the people of Pakistan. Recommendations and suggestions accuruing from the national and international conferences remain a hope for the interminable future as they could not be implemented due to various socio-economic as well as administrative reasons.

After the dis-integration of One-Unit, on the 1st of July 1970, the Province of Sind was reborn and so deliberations for providing rural and urban health services in the province have re-started. It was a happy augury to observe that in the annual development programme for the year 1970-71 following allocations have been announced by the Governor:

(1) Rs. 14.36 lacs —for building rural health centres and sub-centres.

(2) Rs. 23.41 lcs —for improvement/construction of Tehsil headquarter hospitals.

(3) Rs. 45.00 lacs —for combating malaria, small-pox and tuberculosis.

(4) Rs. 36'00 lacs —for improving health facilities in urban areas.

This announcement was made on the occasion of inaugeration of Joint Clinical Conference P.M.A. Karachi & Hyderabad heald on 19th and 20th September 1970. In this conference eminent medical personnel read papers and threw light on the various public health problems confronting the people; discussions were held and suggestions have been sent in the form of reports, as desired by the Governor of Sind. As usual in this conference too the question of water supply, refuse disposal, communicable disease control, nutrition, school health services, family planning, malaria, tuberculosis, small pox eradication, industrial health, health education, rehabilitation, mental health, statistics, drugs and their control, social services etc. etc. were discussed piece meal; each speaker tried to stress the need of solving one or the other public health problems.

Each member of the medical profession knows that the above problems exist in Sind as any where else and they need to be solved. But the crux of the problem is "how to solve them?" "And how is to solve them?" The obvious answer is the "DOCTORS OF SIND". The doctors who are trained and educated in the subject of "Preventive Medicine, Hygiene and Social Medi cine", which clearly portrays all the above mentioned problems and suggests broad based principles for their solution. It is the all-purpose M.B., B.S. doctors who are going to staff the Health Centres of Sind (Rs. 14 lacs), it is the trained doctors who are going to work in Tehsil Hospitals (23 lacs), it is the knowledgeable doctor who can combat and eradicate communicable diseases (45 lacs), it is these doctors who have been indoctrinated in the art of preventive medicine who are going to improve the health facilities in the urban areas of Sind (36 lacs).

The question arises whether we have such all-purpose doctors and whether we are training such doctors for the future in the two medical colleges viz. Liaquat Medical College Hyderabad and Dow Medical College, Karachi? The presumptive answer to the first part of the question is in the affimative with the observation that a little re-orientation in administration and organisation and constant self-appraisal with the idea of refreshing the knowledge through more active participation in seminars on health matters, clinical meetings, group discussions will be desirable to make up for the lost ground, if any.

The answer to the second part needs detailed consideration as it leaves much to be desired. A visit to the Liaquat Medical College or Dow Medical College will bring to light that the departments of Preventive Medicines are part-time departments. The teaching staff is either part-time or has been kept temporary from the beginning till todate. The temporary or part-time, ill paid staff who is constantly struggling to achieve security in service is entrusted the job of teaching Preventive and Social Medicine—the result can very well be imagined.

The didactic teaching of the students by the distinterested, insecure staff in a department which is poorly equipped in specimens, charts, models, audio-visual aids etc. gives the impression to the future medicos that the knowledge provided is not going to be useful in their future career and hence assumes the position of casual, unimportant learning. The maximum impact of this casual knowledge on students remains confined to such limits as will help them to succeed in the University examinations. The other aspect is that the teaching of principles of Preventive Medicine remains an isolated. teaching in erd year of M.B.B.S. course (from 1970-71 the theoritical teaching will be in 3rd as well as 4th year M.B.B.S. class) and is not followed up or practiced in the clinical departments. The reasons of this neglect are many:—

(a) The teachers on clinical side are not aware of the recommendations of Pakistan Medical Council that for teaching purposes the Principles of Preventive and Social Medicine are to be applied on patients in the O.P.D. and in the wards if necessary in active co-operation with the department of Preventive Medicine.

(b) Teachers of clinical departments, after teaching the methods of providing curative relief, are not left with any time to teach the methods of practical application of the principles of Prevention on patients in the wards.

(c) Pakistan Medical Council has no authority or means to enforce the implementation of its own recommendations except the moral force in the shape of requests.

(d) The teachers of clinical departments, by virtue of their capability of providing curative relief, wield a considerable influence on non-medical government and University authorities and hence are able to guide them rather than be guided by them with regard to the implementation of teaching Preventive Medicine in the Medical College.

(e) Above all, neither in the Academic Councils of Dow Medical College and Liaquat Medical College, nor in the Academic Councils of Universities of Karachi and Hyderabad, the subject of Preventive Medicine is represented by the teachers of this department. Instead, the teachers on clinical side even when they are neither qualified, nor trained, nor teaching and nor practicing the principles of Preventive Medicine represent the subject that too in

undertones, probably because of the obvious gaps in their own knowledge.

The ultimate result is that the fresh graduates from the two medical colleges of Sind Province emerge out as curative technicians rather than the much needed all purpose doctors. To expect from such curative technicians to go and man the various institutions and organisations in rural and urban areas (for which varying funds have been allocated in the 1970-71 development programme) is hoping against hope.

Naturally a medico who has not practiced immunisation procedures on his patients in the ward during his training period or who has not learnt the principles of prescribing good nutritious diet on his ward patients, according to socio-economic conditions, will not be able to work in a rural health centre. Similarly a medico who has not learnt to apply the principles of Health education, mental health, social services, family planning etc. etc. on his patients in the wards of the hospitals will never become prone to apply that knowledge in the rural health centres or institutions in urban areas. Instead, this fresh graduate when he goes to work in these places whether in the rural or in urban areas prefers to act as the provider of curative relief. This is understandable partly because of the demand of general public for curative relief and partly because this service is remunerative. The other aspect is that the lucritiveness and self-satisfaction by providing curative relief to the patient offers an opportunity to the doctor to defer the preventive measures for a more opportune time; after all the prevention was considered only as a casual learning during the training period and so the doctor expects that the rural patients will also casually adopt preventive measures without being guided and directed for this unimportant (as if it were) measure.

This vicious circle has assumed such proportions that remedy appears to be far fetched unless stringent measures are adopted as crash programmes for improving the educational standards in Medical Colleges particularly in the field of Preventive Medicine and provision of various facilities in the doctors comparable with their counter parts in the cities and compatible with their status. These facilities have been discussed at length by the P.M.A. in its various deliberations; e.g. better pay, housing, transport, education of children, security of service, opportunity of post-graduate studies, availability of equipment needed in the health centre, adequate para medical staffing etc. etc.

The crux of the problem has been presented here as food for thought to the medical profession in general and to the authorities in particular. Unless the future medicos are are indoctrainated in the art of Preventive and Social Medicine during their training period with a view to create an awareness for disseminating the already existing spirit of service, dedication and self sacrifice, it is difficult to man the rural health centres for doing the much needed preventive work; without proper indoctrination in Preventive and Social Medicine the spirit amongst doctors of doing preventive service in community organisations such as rural health centres remains DORMANT. If this dormant faculty has to be aroused then we have to train, educate, indoctrinate the future medicos according to needs of people on one hand and provide facilities in the rural and urban areas commensurate with the status and needs of the doctor.



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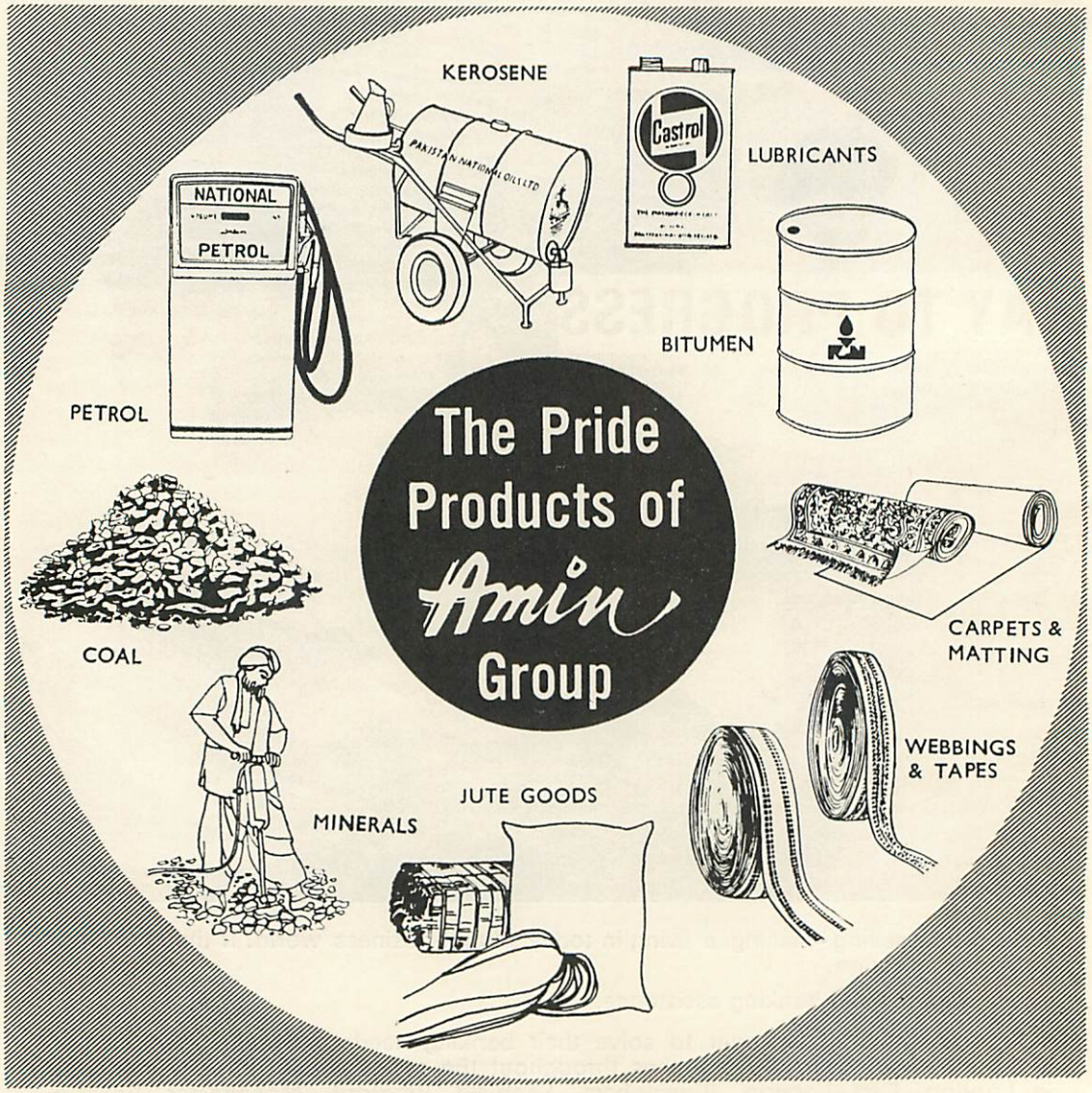
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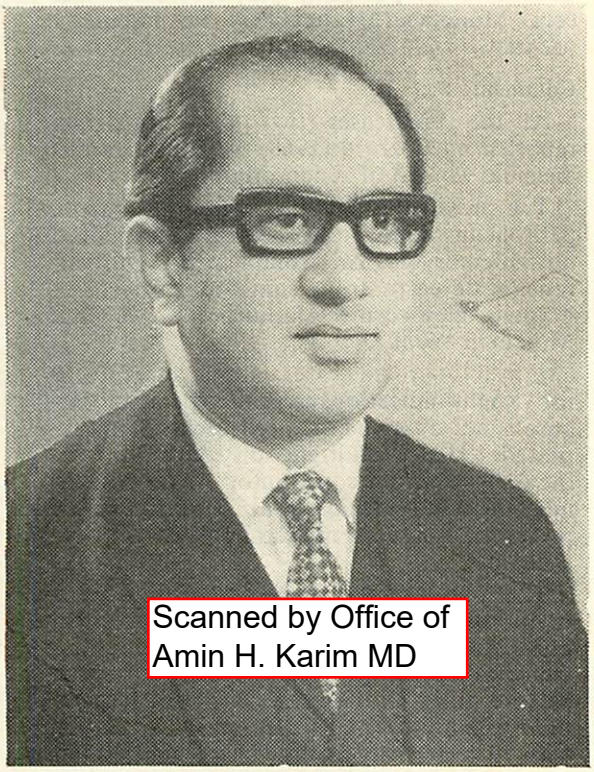

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# ANOMALOUS APPEARANCE OF PERITONEIUM


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*—A single case of Peritoneal anomaly has been reported by Fozzard* (1968). *Following are two case reports of similar nature.*

**Case No. 1 :**

A 38 years old married woman, gravida 11, Para 10 (of which 8 alive 3M and 5F) was admitted as an emergency case with established labour at term and presentation was by breach. The temperature was 101,0F with interference outside by DAI (unqualified Midwife)—Vaginal swab and urine specimen was sent for culture and sensitivity. Intra muscular injections of crystamycine (Penicillline and streptomycine) one twice a day was started. She had an uneventful assisted Breech delivery of a live femal child weighing 5 lbs 14 ons. Durations of labour was 8 hours and 35 minutes.

All her past deliveries were spontaneous normal at home. This time she had to come to hospital because DAI told her that "baby was upside down." Her Haemoglobin was reported as 60 per cent.

She was advised to get her tubes ligated to which both partners gave consent in writing. Her temperature became normal after 24 hours. The vaginal swab showed culture of E-coli, sensitive to streptomycine and urine culture was negative for any growth.

On 4th day after delivery, under Intravenous pentothal anaesthesia, abdomen was opened by 2" of infra-umbilical incision. Theperitoneum was found thicker than usual and possibility of picking up of omentum or gut with spencer well's foreps was thought of, Urinary bladder having been emptied with catheter just before the commencement of operation and incision being higher at the level of fundus of uterus on 4th day, after full term delivery. However Peritoneal cavity was opened up cautiously and peritoneum was found abnormally thickened with trebeculations which were 1 to 3 mm, apart running mostly in longitudinal direction and some in oblique fashions. The abdominal incision was extended so as to introduce the hand for exploration. The trabeculations were felt antriorly and laterally all over the parietal peritoneum but most marked in the area around the umbilicus. Abdominal and pelvic visceras were normal on palpation and as far as could be visualized. Lymph glands in

omentum—Porta hepatis and pare-aortic area were unremarkable on palpation—A piece of parietal peritoneum was taken, from the edge of the wound, for microscopic examination. Bilateral elctro-coagulation of the tubes were carried out at two points, two centimeters apart on either sides. Wound was closed in layers. Post operative course was uneventful and patient was discharged on 9th day.

The histology of the peritoneal piece was reported as "Bundles of smooth muscles seen below the mesotheleal and no evidence of any abnormal cellular activity or pressence of inflammatory cells."

**Case No. 2 :**

A 35 years old woman gravida 7 para 6 (M5, F1 all alive and well) was admitted as, an emergency case with painless *ante-partum* Haemorrhage for 4 hours, at 36 weeks of Gestation. At the time of admission her Blood pressure was 120/70 mm of Hg. pulse rate 82/min of good *valume*. Temp 98.4;F—Abdomen was soft—foetal parts were palpable-presentation was by vertex, which was not engaged—Foetal heart sound was audible —uterus was not contracting—There was moderate trickle of blood per vaginum. Her Hb was reported 52 per cent. Two points of blood were cross matched. Examination under general anaethesia was carried out in operation theatre while blood transfusion was in progress and assistant and nurse scrubbed up ready, to proceed for caes arean section.

Per vaginal examination revealed placenta covering the os, which was admitting two fingers and fresh bleeding started. Introduction of finger in cervical os was felt necessary as palpation of fornicies revealed equivocal findings, head being high, delivery by abdominal route was decided.

Abdomen was opened by Infraumbilical Midline incision to skin and rectus sheath—Peritoneum was found thicker than usual and opened up by vertical incision. Living baby was extracted by lower segment ceasarean section, which cried out soon after suction of nasopharynx and oxygen inhalation. Post placenta praevia type III was confirmed. Uterine rent was sutured in two layers after the cavity was emptied of placents and membranes, uterine incision was covered by utero-vesical peritoneum.

At this stage further exploration of the peritoneal cavity was done. Parietal peritoneum was thickened and finely trabeculated in anterior part extending upto 3" on either side from the midline in Infra-umbilical region—More laterally and leteral part of the perioneum was normal in appearance and on palpation.

No other abnormalities was revealed in any of the viscera or glands as in previous case. Piece of Peritoneum was removed for biopsy which was reported irregular bundles of muscle fibres—No evidence of chronic inflammatory or Malignant cellular infilteration.

Abdominal wound was closed in layers. Patient had uneventful post operative period and was discharged from hospital on 10th day.

Chest X-ray was without any pathology and differntial white call count was reported as Leucocytes 81 per cent, lymphocytes; 17 per cent. Monocytes: 1 per cent. Eosinophil: 1 per cent.

**Comments :**

All the three cases (two present one) and reported by Fozzard (1968) were multiparous anaemic woman of Asian origin.

The presence of smooth muscle in parietal peritoneum in rare cases could be explained on the embryological ground as parietal peritoneum develops from somatopleuric intraebryonic mesoebrm (Hamilton, Boyd, and Mossman 1962).

Many multigravida cases undergo laparotomy for various indications but this type of appearance is not observed or rarely seen but not reported. Hence multigravidity could not be the only cause but contributory to the already inherent rare embriological anomaly of the presence of smooth muscle fibres in the peritoneum.

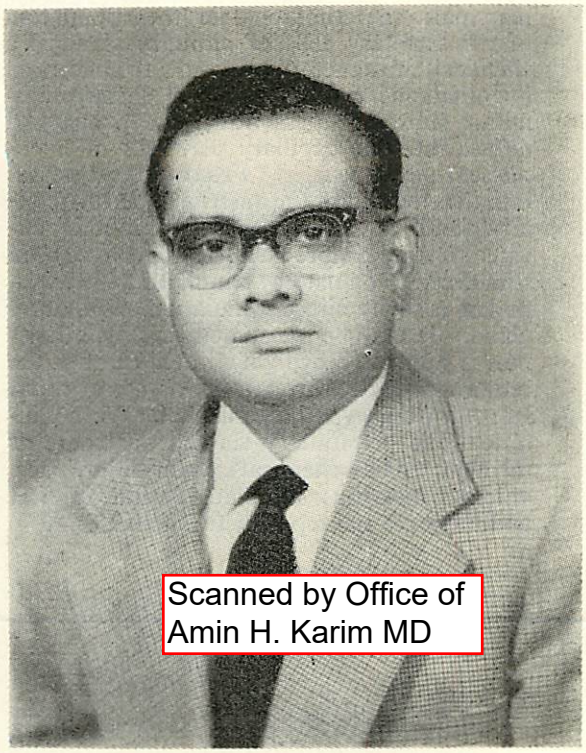
The presumptive inference is of the embryological rare anomaly possibly heriditory prevalent in certain race with contributing factor of repeated pregnencies there by repeated stretching and involution of the parietal peritoneum. What part anaemia has to play with this anomaly is difficult to understand. It could be just an incidental finding in all the three cases.

To prove the last assumption multiple biopsies of parietal peritoneum at random, in Asian and Caccacian origin women, undergoing laparotomies, will be necessary.

**Reference :**

Fozzard, C.E. 1968) British Med. Journa, 4, 625. Hamilton, W. I. BOYD, J. D. and MOSSMAN, H. W. (1962). Human embryology, 3rd ed., P. 62 Cambridge.

# Effect of Light on Reproduction


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IT is now an established fact that sexual periodicity in most of the species is somehow controlled by light and dark fluctuations. The poultary husbandary use this fact to encourage egg production by subjecting the hens to extra light during night. Centuries back the Spaniards used the same method for egg production. The first scientist to work on this relationship between light and reproduction was Rowans who in 1925 worked on American crow. This relationship was further elaborated by Bissonutte (1935) who worked on immature female ferret. He kept one group of animals on a period of 8½ hours of light and kept a second group of animals on normal light plus a hours of artificial light (added after sun set) It was recorded that puberty was delayed in 'Long day' animals (with added light) and hastened in 'Short day' animals. Fiske (1941) showed that rats subjected to continuous light from birth or from 21 days of age had opening of vagina 6 days earlier than rats kept under normal conditions of light. This is probably due to earlier secretion of gonadotrophic harmones as a result of photo stimulation.

Zacharias and Wurtman (1964) have shown that blindness is associated with an earlier menarche in human being especially if the blindness is accompanied by total loss of light perception. In U.S.A. the 50 percent incidence of menarche is attained in normal girls at a mean age of 149 months. In blind girls this is reached at a mean age of 140 months. In other animals the reuers is the case. It has been shown, in rats, that blindfolding delays the age of sexual maturity.

Some workers have subjected this photo-experimentation to other aspects of reproduction. Downson has worked on the breeding season of cat. This animal breeds in Messachussetts from January to July. Dowson was able to induce oestros in December by gradually increasing the amount of illumination. Decreased lighting in late August and September, and increased lighting from October onwards induced the cats to come into oestrous in November. Yoshioka, Anwasra and Suzuki (1952) have shown the same relationship in goats. They placed nannies on fixed day light length in July equal to October day length. It was recorded that majority of females came into heat (oestrous) some 70-80 days later and conception occured.

It has been established that if sheep are transferred from Northern to Southern hemisphere across the equator there is a reversal of their reproductive cycle and they continue to breed at the appropriate season. This is probably due to declining autumnal photoperiod inducing the onset of the cycle. The same result can be obtained under experimental conditions by subjecting the sheep to increased illumination during winter and decreased illumination during summer.

**Anatomy of Photo-Gonad Relationship :**

It has now been established that pituitary gland is a mediating structure in this light-gonad relationship (Parkes 1955, 1956). But the path through which the pituitary gland receives the light stimuli remains controversial. Experiments have shown that eyes

are the medium for the reception of light. (Bissonnett) Hill and Parkes have shown that after hypophysectomy female ferrets do not come to heat (Oestrous) even after artificial irradiation. Thompson (1951) is of opinion that the light stimulii are transmitted from the eyes to the pituitary through some nervous route. From the retina the stimulii are taken away by the optic tract, some fibres of the optic tract detach themselves and terminate in the supra-optic and ventromedial hypothalamic nucleous (Marburg). Both of these nuclii send fibres to the posterior lobe of pituitary and thus the latter is brought under retinal controll by two neurone pathway i.e. retino supra-optic and supra-optico hyphyseal.

But Assenmacher and Manuel (1953) have shown that eyes are not indespensible. They have proved that, in birds, the hypothalamus can also be stimulated directly by light penetrating through the tissues of the orbit. There are two views about the stimulation of anterior lobe of pituitary. But Donouan and Harris have concluded that in mammals, the stimulous for the stimulation of the secretary cells of pituitary gland is a chemical substance discharged from certain hypothalamic neurones. This chemo-transmitter substance pass down the axons and diffuse into the capillary networks of hypophyseal portal vessels. From these it passes into the sinusoid of the anterior lobe of pituitary gland. In return the anterior lobe is activated to secrete more FSH. Rabbits have been stimulated to ovulate by stimulating the hypothalamus or by direct stimulation of pituitary gland. It may be concluded that hypothalamus is stimulated by light stimulii through the retina or directly through the tissues of orbit. In return the hypothalamus activates the anterior lobe of pituitary via nervous route or through some chemicals transmitter. The anterior lobe thus stimulated produce F S H and influence the reproductive activities.

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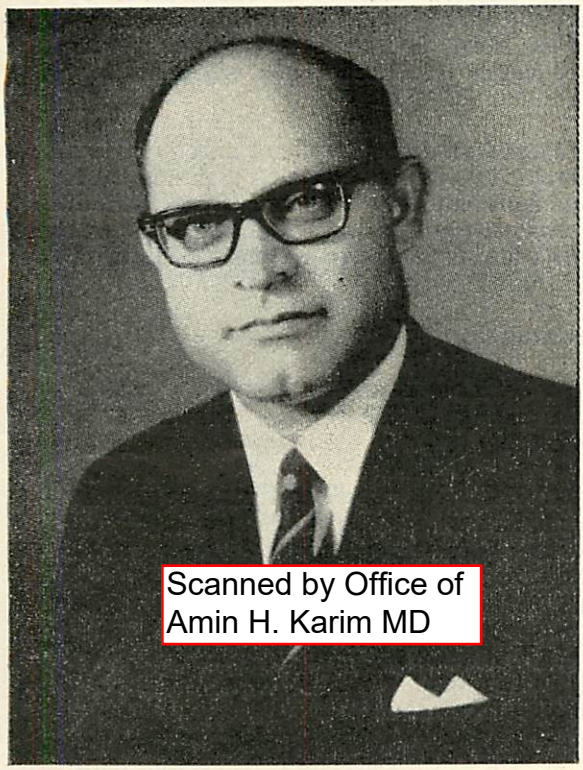
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# Management of Helminthiasis


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HELMINTHIASIS, or worm infestation, is one of the commonest diseases is the world. It is estimated that approximately 140 crore people in the world suffer from one or another type of worm infestation *Ascariasis* is the common onset infestation affecting nearly 65 crore persons, while *ankylostoma duodenale* is the next commonest affecting nearly 46 crore sufferers.

Children are mostly the victims. They react to worm infestation more often because during early years of life there is no immunity to many of the parasites. Later with the passage of time humoral and cellular resistance develops, and the body develops a relative immunity to these infestations. Thus morbidity or mortality rates due to parasitic infestation is higher in children. Worm infestation does not usually cause fatal disease, however, complications could be dangerous and at times may lead to death. Helminthiasis in children causes retardation of growth, lowered resistance to disease and general lethargy.

In a survey of children suffering from worm infestation and attending the Paediatric Unit at Civil Hospital, Karachi, and whose stools have been tested, it is found that round worm (ascariasis) is the commonest worm infestation affecting nearly 80% of the children. Threadworm (oxyuriasis vermicularis) infestation is the next commonest: tapeworm (hymenolepis nana) is the third commonest. Hookworm (ankylostoma) is not very common in Karachi and is seen among children recently migrated from the north. Taenia saginata (beef tapeworm) is very rarely seen.

In a study by Siddiqi among healthy schoolchildren of Islamabad, it was discovered that Hookworm was the next commonest after round worm infestation in that area.

More than one type of worms are usually found infesting the same person. In the north, round worm and hookworms are usually the compansions. Thread worms may also be present at the same tme. To diagnose infestation of more than one kind of worms, stools have to be examined thoroughly and not to stop after seeing the first ovum of round worm.

Worm infestation is more common in unhygienic living conditions and among poor people.

Treatment and eradication of worm infestation is not easy As the presence of worms does not always cause symptoms particularly in adults, therefore people do not take much notice of it until complications have set in. Diagnosis is more often made after a worm is seen in the stools, but this does not mean that those who have not passed a worm are free from this infestation. Treatment is difficult, repeated courses, fasting, purgation, toxicity and cost of treatment among the poor may be barring the use of the anthelmintics. Secondly, the treatment is usually given only for one type of worm—another type may not be affected by the drug given—and the patient may continue harbouring the parasites. Poverty and unhygeienic conditions cannot be changed, therefore re-infection takes place frequently.

For successful treatment it is essential that correct diagnosis is made by repeated thorough examinations of stools. The safe and economical drugs are used to deal successfully with the different types of parasites present in intestines.

Given below is a brief account of the commonest worm infestation in children in Karachi.

**1. Ascariasis :**

A few round worms in a healthy, well nourished child may not produce any symptoms until one fine morning the mother notices a large round pinkish white or pale in the stools, or the child might have vomited this worm out, or the routine microscopic examination of the stools shows eggs to be present.

Rarely one or two worms wandering around in the small intestines may enter the bile duct, causing jaundice or liver abscess. From the stomach it may be vomited out. In larynx it may cause difficulty of breathing or suffocation. Round worms have known to perforate intestinal wall and entering peritoneum, causing peritonitis.

In heavy infestations, these round worms may tangle into a ball-like mass causing intestinal obstruction (commonly at iliocaecal junction). The child with this kind of obstruction will be very ill with abdomenal pain, vomiting, intestinal distension and constipation.

When hundreds of worms are present in the intestines, they affect the nutrition of the child, as considerable portion of the food of the child is used up by these worms. During migration through lungs, allergic manifestations like bronchial asthma may occur. There may be haemoptysis and the X-ray picture may appear like that of pulmonary eosinophilia.

Sometimes in very heavy infestation, the child may develop features of meningitis and encephalitis. Migration of the larvae into the brain may cause convulsions.

Transient abdominal pain, nervousness, loss of appetite, loss of weight, urticaria, attacks of asthma, eosinophilia or symptoms and signs of intestinal obstruction may be the presenting features.

*Ascariasis* is spread by pollution of the soil with infected feaces. Infection results by migration of ova carried from dirty fingers to the mouth. Contaminated drinking water and eating uncooked soiled vegetables may cause the infection.

Freshly passed ova are not infective. Ova develop into larvae in about a month in worm and moist climates. Ova are very resistant to chemical disinfectants, withstand freezing and remain viable for 1-4 years. However, they are destroyed by sunlight and heat.

**Treatment :**

1. *Santonin* is an old remedy; it usually kills and expells the worms. It is not always effective.

2. *Oil of chenopodium:* It may be given in a mixture with liquid paraffin or in capsule form. Twenty-four minims are required. As such it is obselete, but still some people are using it.

3. *Tetrachlorethylene:* May be given alone or with liquid paraffin. It is a safe and effective preparation.

4. *Oil of chenopodium together with tetrachlorethylene:* In a mixture these are effective and act also against hookworms which may be present at the same time. The worms when expelled are always dead or disintegrated.

5. *Helsya:* It is very effective, but not well tolerated; therefore not used.

6. *Piperazine preparations (adipate, sulphate and citrate):* These are efficient in vitro and produce narcosis in worms. These are well tolerated and have no side effects; but prolonged and repeated courses are necessary before a patient can be freed of infestation. There is no need for preparation before hand and no need of a purgative afterward. Two to four grams should be administered at least on 2 successive days. Malaise, nausea and vomiting giddiness may result.

7. *Oxygen under pressure therapy:* 500-1500 ml of oxygen in 5-15 mins is introduced under pressure in the duodenum on an average for 2-3 days. After the oxygen

therapy dead worms are eliminated. Administeration of saline purgative is advantageous. It is a very safe and effective method popular in Russia. Prof. Nurul Islam.

**Oxyuriasis Vermicularis [Thread Worms]**

A thread-like worm, usually lies in caecum and colon with the head attached to the mucosa and discharges ova. (male worm is about 1/2 c.m. long and female about 1 c.m.). Female worms crawl out of the intestine, mainly at night, lay a large number of eggs in the perineal folds and die. This results in intense itching and the patient scratches and transfers the ova to his mouth.

*Children* are mostly affected, scratching the anal region and irritable and restless, distirbed sleep, loss of appetite and loss of weight.

Worms may be seen in the stools, ova are visible microscopically in smears taken from the perineal folds. Scotchtape is good to take a smear.

**Treatment :**

Gentian violet extract of male fera and sublime sulphur have been used in the past. Now piperazine hexyldrate is the most useful compound against thread worms. It is administered in a dose of 60 mg/kg daily in divided doses to be given for 7 days. (Maximum daily dose should not increase over 2 gms.) topic effects are rare—giddines, nausea, in coordination.

A cyanine dye pyravinium pamoate has been found useful in a dose of 5 mg/kg body weight as a single treatment regimen. This achieves 90% success. A dose of 2 mg/kg body weight daily for one week will completely eradicate the worms.

**Hymenolepis Nana** [*Dwarf Tapeworm*)

It is a parasite of children. Small tapeworm is only 1-3 cm long. Eggs are directly infective to man. Infection occures by eating contaminated food or drinking polluted water. There may not be any signs or symptoms, or it may cause irritability, insomnia, not putting on weight, moderate eosinophilia.

Diagnosis is made by demonstration of eggs in feces.

**Treatment :**

—Hexylresorcimal
—Dichlorophen
—Mepacrine
—Acridine
—Extract of Filix mas.
have been used in the past without full success.

Niclosamide is a new, reliable and well tolerated anthelmintic. In adults 4 tablets are taken, chewed and swallowed after breakfast with water. In children of 2-6 years, 2 tablets and under 2 years 1 tablet should be given.

Hymenolepis nana is much more resistant than other tapeworms. Repeated treatment will be required 5 days and 10 days after the first treatment. Some physicians have found excellent results and they recommend 2 tablets (half dose) on the first day and then one tablet is repeated for the next 6 days to eradicate these worms.

**Hook worms :**

Ankylostoma duodenale is the type found in Pakistan. It is more common in the north in rural areas. Habits of passing stools not in proper latrines but in agricultural land is responsible for its spread.

Ankylostoma is 1-2 cm. long. Ova are elliptical, each containing 6-8 spherules. Present usually in small intestines, and are attached to the mucous membrane by their buccal hooks; and they are fed by sucking blood. Infection occurs either through skin or by ingestion of infected food or polluted water. From the skin, larvae pass through the blood vessles, heart and lungs and they pass to the bronchi and larynx and swallowed and deposit in duodenum and small intestines. Average life of each worm in the intestines is about 4-5 years.

**Clinical Features :**

Anaemia and poor nutrition are usually the presenting features. Severity depends on the number of worms in the intestines sucking blood.

A few hookworms in a well nourished child produce no disease as the small amount of

blood lost is easily replaced. However, an under-nourished child with a large number of hookworms will gradually become anaemic with mental and physical leathargy. If not treated, palpitation and later dyspoea due to heart failure will result. Pot belly is usually a prominent feature in such small children.

Anaemia, microscopic and hypochromic and eosinophilia, presence of ova of hookworm in the stools and presence of blood in faeces by late test are diagnostic criteria.

**Treatment :**

(1) *Anaemia*—in severe cases a small transfusion of packed cells should be given. In moderately anaemic cases iron orally or by injection should be given. Good nourishing high protein diet is essential.

(2) *Removal of worms:* Oil of chenopodium, carbon tetrachloride and hexylresorcimol are not used any longer. Tetrachlorethylene and Bephenium both give satisfactory results to eradicate the worms.

Bephenium in a dose of 2 gm. for children and 5 gm. for adults is to be taken before breakfast. For still more effective results, piperazine may be combined. Stools should be examined for worms and stools tests repeated after one week and two weeks and if ova found, another course should be given.

Taking of Bephenium is usually associated with nausea and sometimes vomiting, otherwise it is quite safe and effective drug.

*Tetrachlorethylene* in a dose of 0.1 ml/kg body weight is quite effective in eradicating the worms. A combined treatment with oil of chenopodium is more efficious. We have adopted the method as described by Manson Bahr in the treatment of hookworm infestation.

2 ml of tetrachlorethylene is mixed with 1 ml of oil of chenopodium and made up to one ounce in castor oil or liquid paraffin. Adults should take the full dose early in the morning on empty stomach and no food to be taken for 4 hours afterwards.

The dose should be appropriately reduced for children, i.e.

| | | | | | |
|---|---|---|---|---|---|
| 8-12 years old should be given | | | 3 | teaspoonfuls. | |
| 4-8 | ,, | ,, | 2 | ,, | ,, |
| 2-4 | ,, | ,, | 1 | ,, | ,, |
| under 2 years | ,, | ,, | 1/2 | ,, | ,, |

Stools should be tested 2 weeks later for ova, if found (which is rarely the case) a second course should be given. This method has been found most useful. Toxic effects are uncommon. Nausea may be experienced in some patients. Tetrachlorethylene should not be administered to patients with liver or kidney diseases.

Although even the best anthelmintic may not eliminate all hookworms, it can be relied that the majority has he eliminated. There is no need to give repeated treatment to those who are symptom face.

In the prevention of most helminthiases the most important part is played by sanitary protection of water reservoirs, the soil and foodsuffs from infestation with helminths and, primarily, from pollution with excrements of patients or intermediate hosts to the parasites. Extensive sanitary and hygientic measures in town and country, protection of sources of water supply, health education and inculcation of habits of personal hygiene are of are of decisive im portance in the control of helminthiases.

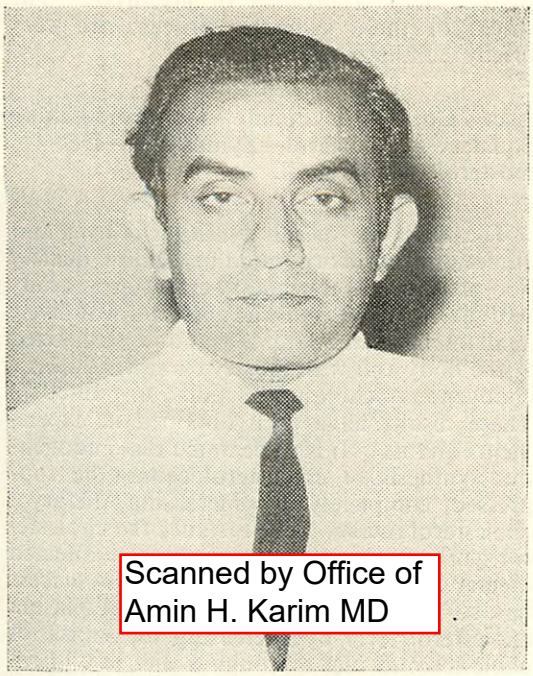
The imporities must be decontaminated from the eggs of helminths in composts or by keeping them in closed pits with lime chloride (1 part of lime chloride to 4 parts of impurities) Systematic disinfection of toilets and cesspools with lime chloride is an important method of dehelminthization.

An auxiliary role is played by thorough cooking of the meat. It is particularly important regularly to examine people for infestation with helminths, especially in organized collectives (kindergartens, children's homes, schools, workers of the food industry) and to carry out dehelminthization in hospitals with obligatory records of its effectiveness.

To prevent enterobiasis, it is necessary, in addition to the afore-mentioned measures, to trim the nails of affected children because retention of the parasite's eggs in the hyponychial spaces may result in repeated autoinfection.

The extermination of helminths is based on carrying out a complex of measures: ridding the human organism of the parasitic worms, destruction not only of the parasites driven out of the human bodies, but also of their eggs and larvae, and protection of people from new infestation by extensive sanitation of the water, the soil and all populated areas.

# Biochemistry of Cholesterol


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CHOLESTEROL is a vital substance for our body. Its name has been derived from Greek words meaning "Solid bile" on account of the fact that it was isolated for the first time, from gall stones.

It is classified as a derived lipid because it becomes associated with lipids during the extraction of the latter from the tissues due to its solubility in fat solvents like ether, benzene, chloroform and hot alcohol. But unlike lipids it is not hydrolysed by sodium hydroxide. Hence it is regarded as an unsaponifiable fraction of lipids. It is crystallizable and forms colorless rhombic plate-like crystals with characteristic re-entrant angles at the corners. It gives rise to characteristic color reactions, which are used for its detection.

(1) Cholesterol Crystals, when irrigated with conc. sulphuric acid turn red at the edge a subsequent addition of Iodine drops produces a series of color changes—Violet, Green, Blue and finally Black.

**2. Salkows-Kis' Reaction :**

To a solution of cholesterol in chloroform an equal volume of conc. sulphuric acid is added. Mixing is done once or twice and then the solution is allowed to stand for sometime. Now the solution shows two layers: the upper layer of chloroform having a Red Colour and the lower layer having a Yellow colour with greenish fluorescence.

**3. Liebermann—Burchardt Reaction :**

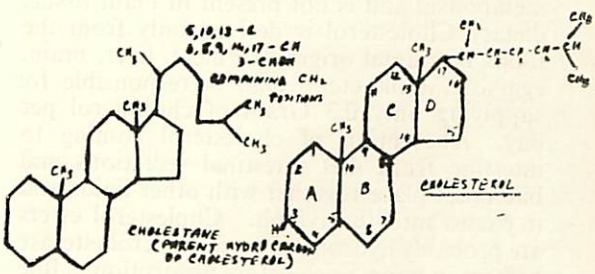
This reaction forms the basis of the quantitative estimation of cholesterol.

Cholesterol crystals are dissolved in 2 c.c. of chloroform. To this solution, 10 drops of acetic anhydride are added followed by 2 drops of conc. sulphuric acid. Mixing is done and a deep blue colour develops.

Chemically cholesterol is a steroid alcohol. It contains one double bond between C5 & C6 which makes it an unsaturated compound. Due to this, it can accept two halogen atoms at this position. Its parent hydrocarbon is cholestane. It can be described as a cholest-5-en-3-*B* ol.

It can be represented by a formula $C_{27}H_{45}OH$.

A study of its structure reveals that it is made up of four fused rings A, B, C & D, belonging to the Cyclopentano per hydro phenanthrene nucleus with side chain as shown below:—




It would be of interest to know that a great variety of naturally occurring compounds with diverse physiological significance are derivatives of the cyclopentane-per phydrophenanthrene nucleus e.g. bile salts, steroid hormones, sterol vitamins, aglycone portion of

cardiac glycosides (Digitalis), sapogenins (of plant saponins) and carcinogenic hydrocarbons of phenantherene type.

Being an alcohol, it forms esters with fatty acids. Hence it is present in animal tissues not only in free state but also in esterified form. The ester formation takes place mostly with unsaturated fatty acids. As such it serves to transport unsaturated fatty acids in the body.

Cholesterol is widely distributed in the body as it forms a constituent of all animal cells. Together with lecithin cholesterides (cholesterol esters) are incorporated in the structure of all cell memberanes It is abundantly found in brain and nervous tissues, adrenal cortex, corpus luteum, skin and egg yolk. Liver and plasma contain both the free and esterified forms of cholesterol. It has been estimated that out of 54% lipid material of cerebrum solids, 10% is accounted for by choiesterol.

Blood cholesterol is distributed in the red cells and plasma. The red cells have only free cholesterol and it remains constant. Plasma contains both free and esterified forms of cholesterol. The esterified form is about 75% of total cholesterol content of plasma. The total cholesterol conc. of plasma is estimated to range between 150-250 Omgs%. It is to be noted that only plasma cone is subject to variations in health or disease. Cholesterol is also present in bile, milk etc.,

The source of cholesterol for the body is either the diet or the synthesis done by body itself: As cholesterol is a product of animal metabolism and is not present in Plant tissue, dietary Cholesterol is derived only from the foods of animal origin like meat, liver, brain, egg-yolk, milk etc., Diet is responsible for supplying only 0.3 Gram of cholesterol per day. Absorption of cholesterol coming to intestine from diet intestinal secretions and bile takes place together with other lipids and it passes into the lymph. Cholesterol esters are probably hydrolysed by cholesterol esterase present in panc. juice before absorption. Bile salts are necessary for the absorption of cholesterol. The body synthesizes as much as 1.5 to 2 grams of cholesterol per day, and this is found to take place even when the diet is totally devoid of fat or cholesterol. The body makes use of carbon atoms from Acetyl Co. A made available as a result of *B*-oxidation of fatty acids or obtained from the pyruvic acid, a product of glycolysis. The stages of these synthetic process are very briefly summarised as follows:

Acetyl Co.A—Mevalonate—Isopenoid Units—Squalene—Lanosterol—Zymosterol—Desmosterol—Cholesterol.

The main site of this synthesis is liver and cholesterol is incorporated in the low density lipo-proteins. If the dietary cholesterol is only 0.05%, 70 to 80% of the cholesterol of liver, small intestine and adrenal gland is synthesized by the body and with dietary cholesterol of 2% endogenous cholesterol falls to 10-30%. These results have been obtained in experiments on rats. It is to be noted that endogenous synthesis of cholesterol cannot be suppressed completely by increasing dietary cholesterol intake. For instance the cholesterol synthesized in the tests remains un-affected dietary variation of cholesterol. No success has so far been gained in reducing plasma cholesterol level by decreasing the intake of cholesterol in diet although a diet low in fat and cholesterol content if taken for a long period of several months decreases the plasma cholesterol conc.

Cholesterd has got very important physiological roles to play in the body. It helps in the carriage of unsaturated fatty acids by forming esters with them as has been referred to in the foregoing lines. Besides it serves as a precursor of cholic acid (bile salts) and also of various steroid hormones like adreno cortical hormones, androgens, progesterone and oestrogens. It can be converted to Vitamin D by irradiation. In this connection it can be pointed out that a sterol known as 7-dehydrocholesterol, which is present in skin can be converted to a compound with Vit. D. activity after irradiation with ultra violet light. That is why exposure to sunlight is useful in case of rickets. Besides there is also another sterol ergosterol derived from yeast and moulds and it can also converted to calciferol (a form of Vit. D) by exposure to ultra violet rays.

Cholesterol owes its clinical importance to the fact that its plasma level shows variations in certain pathological conditions. There is

hyper-cholesterolemia in conditions like Nephrosis, Diabetes mellitus, Hypothyroidism, biliary obstruction. Besides plasma cholesterol level is also increased in conditions like pregnancy and high fat diet.

The plasma level of cholesterol is decreased in conditions like hyperthyroidism, pernicious anaemia and certain liver diseases. In the latter condition the esterified form shows a greater decrease, which under normal conditions is present to an extent of about 75% of total cholesterol content of plasma.

Cholesterol is also responsible for formation of gall stones and very rarely urinary stones. It has been demonstrated experimentally in guineapigs that cholesterol alone cannot give rise to gall stone formation and Riboflavin is required to be present together with cholesterol for the purpose.

The relationship of elevated cholesterol level of plasma to atherosclecosis (a disease of arteries in which there is deposition of cholesterol and other lipids in the connective tissue of arterial wall followed by calcification) is stiil a controversial issue. In diabetes mellitus there is increased cholesterol conc of plasma and at the same time there is atheroselerosis. But it has been observed that atheroselerosis may develop without the plasma cholesterol conc being higher. Furthersome dietary restriction of fat and cholesterol to the extent of total abstinence can alone bring about any substantial reduction in the plasma conc of cholesterol as there is synthetic mechanism going on inside the body for formation of cholesterol. As such there is as yet no agreement among clinicians regarding the amount and type of lipid required for keeping down the plasma cholesterol level and for prevention of atherosclerosis. Besides many other factors have also come to light. For example it has been experimentally proved that neither dietary fat or cholesterol nor the hypercholesterolemia itself has anything to do with development of the atherosclerosis. Now it is believed that physical condition of lipids present in the blood are actually the causative factor. It has been suggested that lip-proteins having floatation rate Sf of 12-100 increase in blood in cases of atherosclerosis and they contain only 10-15% of cholesterol. Lipoproteins cont...nt of plasma can be decreased wit restriction of dietary fat and cholesterol. Besides deficiency of heparin or pyridoxine and excessive amount of sugar or of carbohydrate or of saturated fatty acids like myristic acid in diet have all been incriminated in this regard.

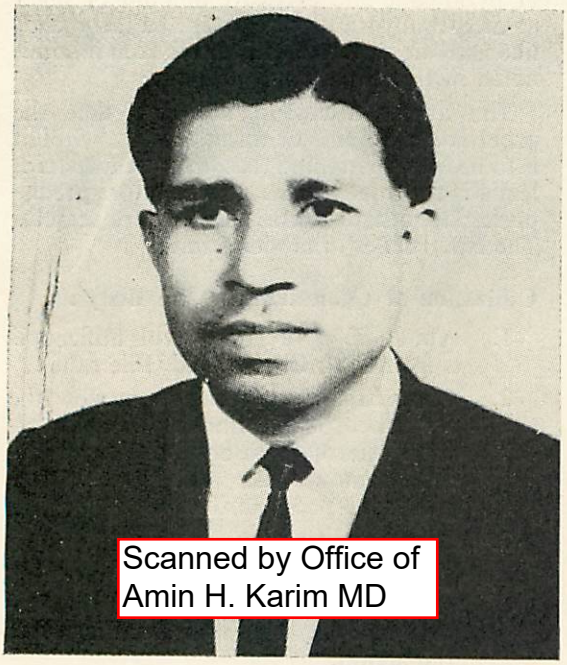
The above discusson indicates that the probl is a plethora of uncertainities. Still it is to be boMne in mind that hyper-cholesterolemia is regarded as one of the factors predisposing to atherosclerosis and heart attacks, The No. I killer of modern times.

**Utilization of Cholesterol in The Body :**

1. About 80% of cholesterol utilized is converted to Cholic Acid (Bile salts).
2. Conversion to steroid hormones like adreno cortical hormones (17 hydroxy-corticosterone and corticosterone) and sex hormones like androgens oestrogens and progesterone.
3. Excretion into bile.
4. Excretion in the intestine—Cholesterol so exreted is reduced to dihydro cholesterol and th to oprosterol by bacterial action.
5. Converion to $CO_2$, fatty acids, liver phospholipid and liver Glycogen.
6. The undegraded portion (which amounts to as muchas 50%) is partly out in feces and partly stored up in liver.
7. Convertion to Vitam in D.
8. Incorporation into structure of cells particularly the cell membranes.

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# Cardiac Arrhythmias in Acute Myocardial Infarction

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Heralding of Cardiac arrhythmias in a disease which already has a high mortality switches up the death rate to still higher figures. Collectively cardiac arrhythmias account for a mortality of 50-60% immediately following an attack of Acute Myocardial Infarction. About 70—80% of these unfortunate sufferers succumb to this complication and don't have time enough to reach the Hospital for treatment. Coronary intensive care units are responsible in saving at least over 50% of such cases who reach hospital and get the benefit of such a unit.

The onset of various arrhythmias is most common during the first few hours after infarction, without warning in majority of cases. If it developed after 48 hours of the episode of infarction, then pre-monitary ventricular ectopics are usually present. Multiple ectopic beats or R upon T Ectopics are particularly ominous. Arrhythmias 1-3 weeks after the initial episode indicates a fresh infarction. The site of occlusion of the coronary arteries a fesh infraction. The site of occlusion of the coronery arteries has also a bearing. It has been observed that ventricular tachycardia is more apt to occur in Posterior Myodaridial Infarction due to occulsion of Right Coronary artery which almost always supplies the A-V Node and in about 50% the S-A Node as well. This loss over the normal pace makers, even temporarily, makes the ventricles more liable to abnormal deploarization.

The onset of any arrhythmias is not necessarily related to the size of Myocardial damage. It is only an expression of electrical instability triggered off by the impact of coronary occlusion. Although large infencts through intra-celbular loss of Patossium are more likely responsible than the smaller ones.

Psychological & biochemical stress both induce excessive secretion of adrenaline and noradrenaline. This has been proved by their increased content in the urine following an attack of Myocardial infarction. Also it has been observed that serious arrhythmias are

associated with a high serum-fatty-acid content.

The most sinister of all is Ventricular Fibrillation or Cardiac Asystole which cause abrupt death. About 30% of sudden death are concontributed by this arrhythmia occuring within the first 15 minutes or so following an attack of Acute Myocardial Infarction. Other disturbance of rhythem are also common. They include Ventricular Ectopic Beats (Unifocal or Multifocal, the latter being of grave significance); Paroxysmal Ventricular Tachycardis; Paroxysmal Auricular Flutter and fibrillation; Nodal Rhythem and Hearth Block. They should all be regarded very seriously because all may hearald Ventricular Fibrillation or precipitate Heart Failure. Complete Heart Block is also a lethal arrhythmia.

*Haemodynamic Consequence of Arrhytemias:* Immediately following the onset of a paroxysm of an arrhythmia the cardiac out-put drops by an average of 30%. The peripheral circulation gets jeopardised. The important visceras also share this disadvantage. Deficient Cebebral perfusion may produce confusion, dizzy turns, partial or complete loss of consciousness, associated with or without convulsive seizures (a very upsetting situation which makes the attendents very panicky and apprehensive specially if a sober individual happens to loss control over his sphincters). Similarly deficient RENAL perfusion for any length of time in addition to provoking aldozterone production, may land the patient in a state of Renal failure. In an atheroaclerotic individual already living at a border linemay get complete loss of perfusion of his limbs. thereby increasing the chances of an already thretening gangene.

## TREATMENT

**1. Drug Treatment :**

(a) For Supra Ventricular Tachycardas (paroxysmal Auricular Tachycardia, Paroxysmal Auricular Flitter and Fibrillation) Digitalis is the drug of choice. This drug is not well-tolerated by the necrosed myocardium. It is advisable, therefore, to use this drug in some what lesser dosage than one should use for such an arrhythmia not associated with Acute Myocardial Infarction.

(b) For Ventricular Arrhythmias "Digitalis" is a *lethal drug*. It can only convert Paroxysmal Ventricular Tachycardia into Ventricular Fibrillation which culminates death. The various drugs utilized from time to time are as under:—

(i) Quindine Sulphate.

(ii) Procain amide.

(iii) Potassium Chloride.

(iv) Chelating agents.

(v) Xylocaine (Lignocaine).

(vi) Anti thyroid drugs in resistant/ recurrent cases.

(vii) Polorizing solution infusions. This solution consists of glucose solution plus Potassium Chloride plus plain Insulin (devised by Sodi Pollaris)

(viii) Certain drug with doubtful value are:-, Antistine, Dilantin Sodium, Etc.,

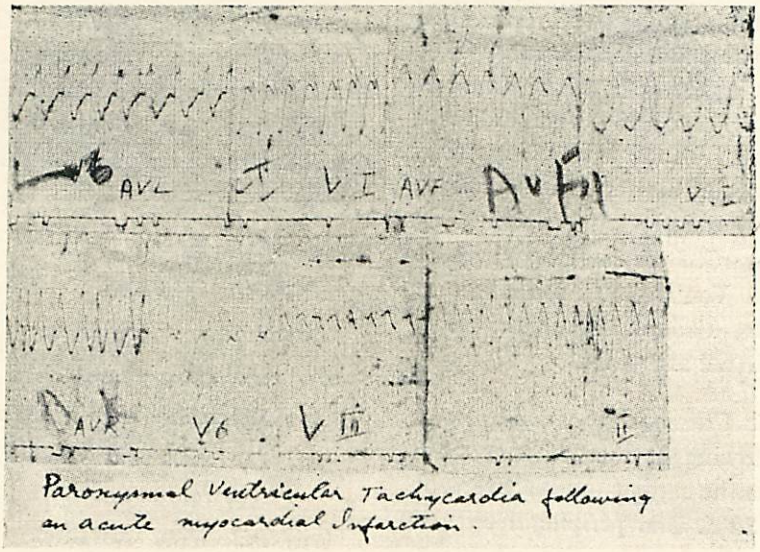
(ix) Recent Drugs:-

*B*-adrenergic blocking agents, e.g., Pronathelol.

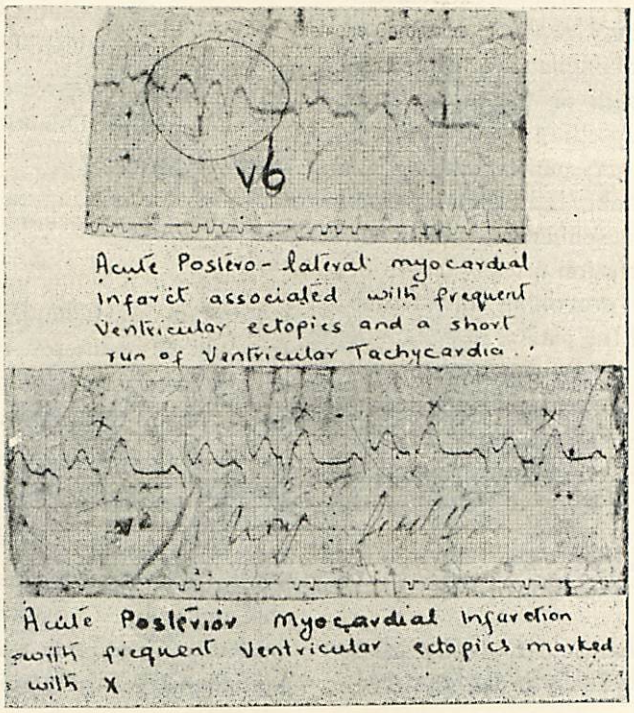
Propranadol (Inderal) and L.B-46 (Sandoz) It would be of interest to mention the mode of administration of Xylocaine (Lignocaine) as it is one of the recent additions in the drug treatment of cardiac arrhythmias and has met with fairly good amount of success.

10 to 15 ml. of 2% Xylocaine solution is given intra-venously initially as a loading dose under E.C.G. control followed by 1—2 mg/Kilogram of body weight in the form of a continous I/V drip. This drip is. composed

of 500—1,000 mg. of Xylocaine added to 500 ml. of 5% Dextrose in water or 500 ml. of 1/6 Molar Lactate Solution. This infussion is run at a rate of 10—20 drops/minute according to the patients' response and continued for a period of about 48 hours. It is advisable to add 50 Dunites of Heparin to this infusion to to prevent thrombo-phlebitis if this drip is to be continued for more than 24 hours, Xylocaine has little value, if any, in supra Ventricular arrhythmias. There are usually no unwanted side effects.

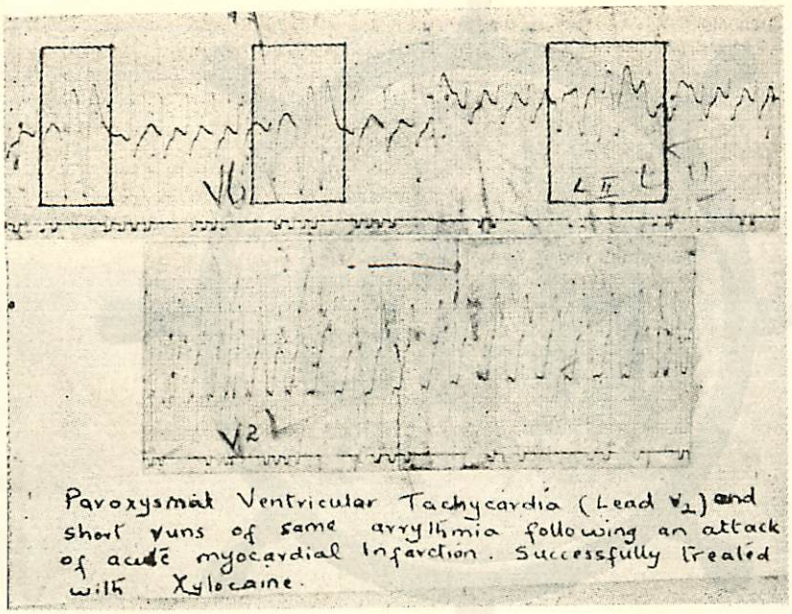


Paroxysmal Ventricular Tachycardia following an acute myocardial Infarction.



Acute Postero-lateral myocardial infarct associated with frequent Ventricular ectopics and a short run of Ventricular Tachycardia.

Acute Posterior Myocardial Infarction with frequent Ventricular ectopics marked with X




Paroxysmal Ventricular Tachycardia (Lead $V_2$) and short runs of same arrythmia following an attack of acute myocardial infarction. Successfully treated with Xylocaine.

**II. Electrical Treatment :**

The greatest achievement in the field of Cardiac Arrhythmias has been their successfull termination with D-C shock (Lown 1967)

D-C Defibrillation is the quickest, the best and probably the safest technique so far available for atrial flutter, atrial fibrillation, atrial tachycarida, ventricular fibrillation and ventricular tachycardia. This method has no contraindication except electrolyte inbalance and digitalis induced arrhythmias. The disappointing thing about this technique is that the immediate 90% success shrinks to about 25—30%. This necessiates frequent defibrillation if and when necessary. It is advisable to put the patient on some anti-arrhythmic drug after the initial success with electric treatment.




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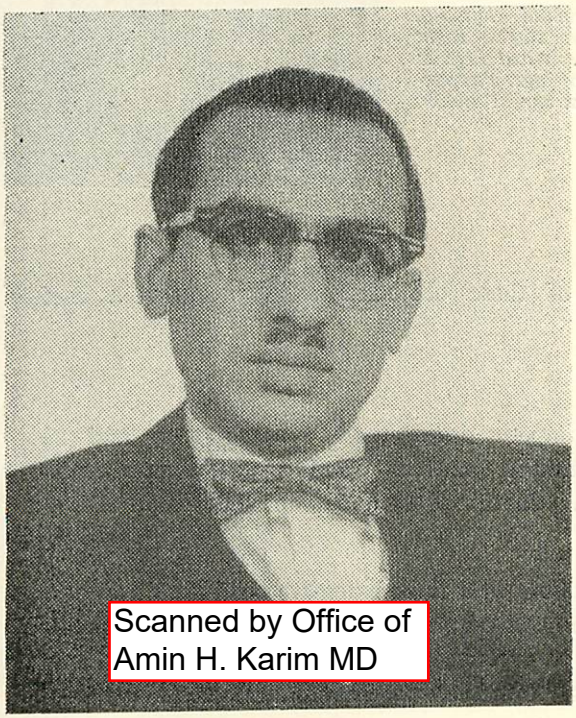
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# Recent Advances in the Field of Plastic Surgery



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KHALID M. DURRANI,
M.B., F.R.C.S. (C), F.A.C.S.

DIPLOMATE AMERICAN BOARD OF PLASTIC SURGERY. ASSISTANT PROFESSOR OF PLASTIC SURGERY DOW MEDICAL COLLEGE, KARACHI AND ASSOCIATE SURGEON AND CHIEF OF PLASTIC SURGERY AND BURNS SEVICE CIVIL HOSPITAL, KARACHI.

WHATEVER advances have taken place in human knowledge in the past ten or fifteen years, they surpass by a wide margin everything that human race had known before since its inception.

Plastic Surgery is quite an ancient specialty. However, most of its organisation and its recognition as a separate specialty has taken place only after the first world war and in most countries of the world, after the second World War. In our own country it happened after the 1965 Indo-Pakistan war when the first unit of Plastic Surgery in Pakistan started functioning on a regular basis at Civil Hospital Karachi in May, 1966.

What progress has Plastic Surgery seen in the recent years? I shall not go into the theoretical details but would just mention a few things in each branch of this specialty that have struck me as most remarkable; things that have made possible for surgeons to do what they could not or must not before, and for the patients to go through and to get what they did not before.

Plastic Surgery has several offshoots and I would discuss each one separately. First of all, to enumerate the various branche of plastic Surgery;

1. Tissue Transplantation
2. Congenital Anomalies
3. Maxillofacial Surgery
4. Management of Burns
5. Hand Surgery
6. Cosmetic Surgery.

**Tissue Transplantation :**

Ever-improving techniques of tissue storage have made it possible to develop tissue banks on which to draw in case of emergency wihtout having to wait for the arrival of a suitable donor. It is hoped that the problem of immuno-rejection of grafts will be solved within our lifetimes. This would make the surgeon's own living more comfortable!

**Congenital Anomalies :**

These are a great challenge to the reconstructive surgeon. With improved knowledge of the causation of these anomalies, including the chromosomal and various exogenous teratogenic factors it is now possible to avoid many of these anomalies by proper marriage counseling, improved prenatal care and avoidance of harmful drugs during pregnancy.

Once faced with the challenge, the plastic surgeon now has the help of very safe neonatal anesthesia to undertake surgery practically right at the time of birth (Fig. 1—2).



< Figur 1 & Figur 2 >

*Bilateral congenital cleft lip, repaired in two stages, Right side at one week and Left at eight weeks of age. Postoperative picture at age 11 month.*



With better metaboiic care early in life most of these deformed children iive on as useful individuals in the soceity.

**Maxillofacial Surgery :**

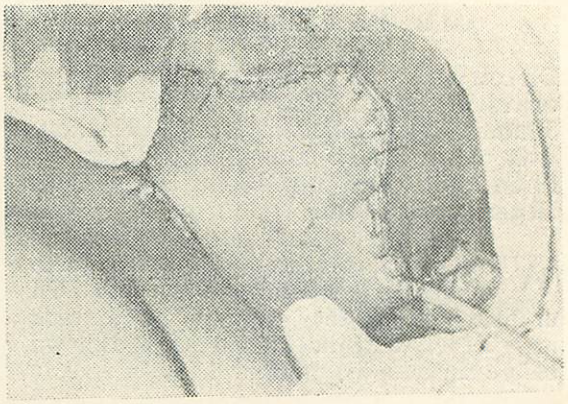
This branch of Plastic Surgery got a great impetus during the two world wars and now with the ever-increasing number of automobiles on the roads maxillofacial trauma remains a major client of the plastic surgeon. Cancer of the head and neck also is always a problem begging for a solution.

With hypotensive anesthesia the surgeon can undertake extensive corrective and resective procedures upon the head and neck with out requiring trans.usion oı blood and with almost a dissection-hall clarity oı the field oı operation. Hyperbaric oxygen therapy allows raising oı flaps with precarious pedicles to reconstruct the residual deıects (Fig. 3—4).



< Figur 3

Figur 4 >



*Case of advanced carcinoma of buccal mucosa. Radical excision including neck dissection was supplemented with rotationadvancement flap from the pectoral region. Note drain under flap in front of earlobe.*

Postoperative rehabilitation of these patients is facilitated by the very much advanced field of prosthetics which eliminates prolonged reconstructive procedures on elderly patients with sands of their lives practically runout (Fig. 5—8). (5) (9) (7) (8)

**Carcinoma of Maxillary Antrum.**

< Fig. 5



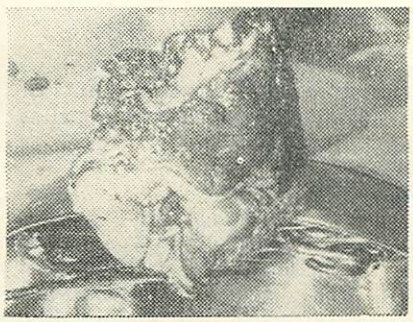
*Preoperative view. Note bulging of entire side of face and distortion of eyelids with ulceration at outer canthus.*

Fig. 6 >



*Transoperative view of radical maxillectomy and orbital exenteration. Dark area in center is the nasal septum while the lighter areas on top and right are skin grafts lining the raw undersurface of the reflected cheek flap.*

< Fig. 7



*Surgical specimen. Note the eyeball at top left and the mazilla with teeth at the bottom.*

Fig. 8 >



*Patient 10 days postoperative. Middle turbinate and the nasal septum occupy center of the defect. Reconstruction in such cases is deferred till after a period of observation to avoid concealment of local recurrence.*

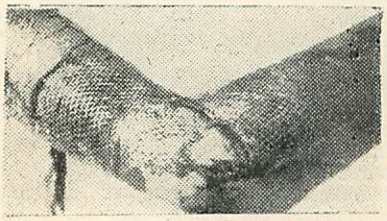
**Burns :**

In the field of prevention, better organisation of measures against fire-hazards in the home, in industry and in the operation theater has reduced the incidence of burns.

Early transport of the patient to a hospital and proper management of his shock allow even the severest burn cases to survive this phase of their illness.

Infection and septicemia can now be effectively treated with antibiotics, both topical and parenteral.

One significant advance in the early closure of the burn wound has been the invention of the mesh dermatome in 1964. This particular instrument allows stretching of the skin obtained for grafting from the patient himself to an area about three times its own size. Large areas can thus be resurfaced, with better chances of 'take's in one session, what would otherwise requires three or more operative sessions at two or three week intervals, every passing day fraught with the possibility of invasive infection gaining the better of the depleted victim (Fig. 9).



< Fig. 9

*Deep burns of theup per limb. Mesh is patient's ownskin cut with Tanner-Vandeput mesh dermatome. Interstices fill with epithelium within two to three weeks.*

**Hand Surgery :**

Better understanding of the functional anatomy of the hand has allowed the development of this specialty in its own right. Microvascular surgery has permitted reimplantation of amputated limbs with good chances of survival. Small nerves can be accurately sutured under the microscope. with much better functional restoration than was hitherto possible. Appreciation of the usefulness of the 'neurovascular island' in reconstructive digital surgery has restored many a useful hand (Fig. 10-12).

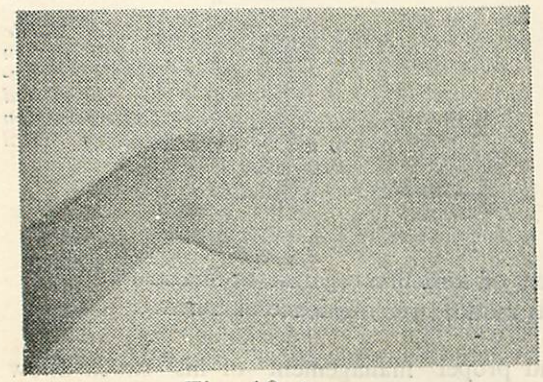


Fig. 10 ∧
*Posoperative*

Fig. 11 >



*Postoperative view of thumb reconstructed in stages from abdominal soft tissues, iliac bone graft and an island of skin from ring finger pupl, along with its neuro-vascular bundle (Littler flap).*

Fig. 12 >



*Reconstructed thumb in action.*

In the rheumatoid hand, artificial joints of silicone can retrieve an otherwise hopeless situation quite remarkably.

**Cosmetic Surgery :**

Some advance has taken place in the management of keloids and hypertrophic scars in the past decade. Triamcinolone acetonide injected intralesionally would flatten out practically 90% of hypertrophic scars and 75% of keloids without surgery. It is very useful in the management of extensive lesions of this nature which often defy all other modes of therapy. Parenthetically, smaller lesions still do much better with surgery.

Similarly, extensive portwine stains on exposed parts of the body can be injected with pigments which are well tolerated by the organism. This is accomplished with the aid

of specially designed high frequency vibrating needles which inject the pigments at the proper depth into the dermis, thus camouflaging the abnormal natural pigmentation.

*Dermabrasion*: With the aid of electric or air-powered silicone carbide cylinders a variety of skin blemishes can be eliminated, e.g. fibroepithelial polyposis, smallpox and acne scars, freckles and so forth (Fig. (13) (14).



< Fig. 13 Fig. 14 >

*Fibroepithelial polyposis of facial skin in a girl of thirteen treated with dermabrasion.*

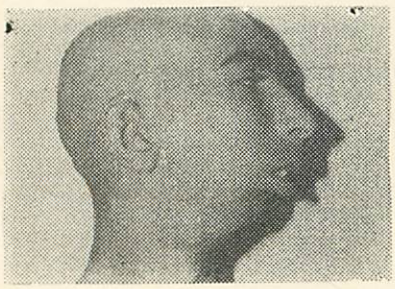


I believe however, that the most important advances in the field of cosmetic surgery have been two:

1. The development of fine atraumatic suture, which allows practically invisible closure of incisions, and

2. The medical grade silicones. Chemically they are dimethylpolysiloxane. They are very well tolerated by the body and have found favor with practically every description of a surgical specialist.

In Plastic Surgery, some of their uses are depicted in the following pictures:



<Fig. 15



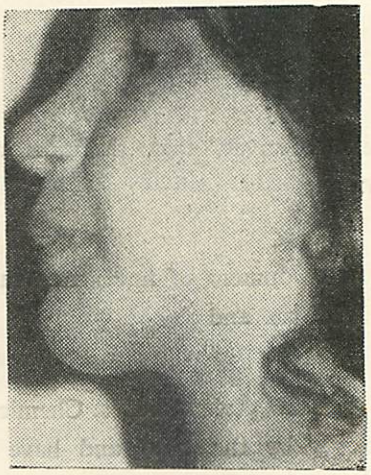
Fig. 16 >

*Bilateral temporomandibular ankylosis with trismus following fall on chin in an 18-year old male. Such cases are particularly refractory to treatment. Eight previous operations done elsewhere over a period of 12 years had been unsuccessful. Silicone plates inserted in both temporomandibular joints gave the patient permanent recovery of function with a good opening.*



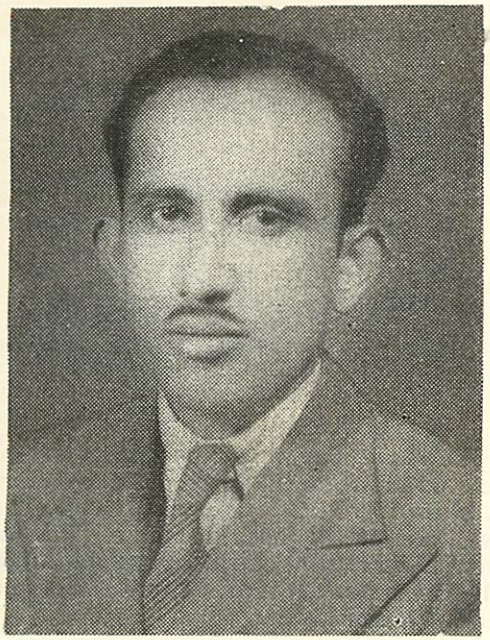
< Fig. 17

Fig. 18 >



*"Andy-Gump" deformity of chin in a 17-year old girl resulting from traumatic damage to mandibular condyle growth centers. Chin augmentation with silicone block.*

# ASPHYXIA



DR. MOHAMMAD UMAR KHAN

(Police Surgeon and)
*Prof. of Forensic Medicine and Toxicology*
*D.M.C.*

THE term asphyxia has been applied to the conditions in which the supply of Oxygen to the blood and the tissues has been reduced sufficiently below the normal working level by some interference with respiration, in death from asphyxia it has fallen below the minimum necessary for the continuance of life.

Supply of oxygen and its successful utilisation are primary requirements of every cell in the body, those things which cause mal functioning or death of the cell operate by interfering with some part of the oxidation-reduction process. The scope of oxygen lack as a cause of death is without limits.

Asphyxia is a Greek word means "pulselessness" and this cannot be considered as a primary feature of Asphyxia. The terms anoxaemia, anoxia and suboxia have all been suggested to replace the older term aspbyxia but there are reasonable objections to each of them.

States of suboxia may develop as a result of disease, especially of the circulatory or respiratory systems and also in consequence of a deficiency of haemoglobin. Oxygen lack may also ensue from certain forms of interferance with respiration; it may be caused by:—

1. Breathing a rarefied or vitiated atmosphere deficient in oxygen as in high altitude climbing or flying or near intense conflagrations.

2. Inhaling a gas which interferes with the normal oxygen carrying capacity of haemoglobin (e.g. CO or $CO_2$) or prevents the normal working of the cell oxidation enzyme system (e.g. HCN) or absorbing a poison like nitro benzene or aniline which form methaemoglobin.

3. Direct interference with respiration; as by narcotic or anaesthetic poisons.

4. Mechanical interference with respiration, which we are mainly concerned as these are the Medico-legal cases. They are:—

(a) *Hanging :*

(*b*) *Strangulation:*—It is called Throttling, when constriction of neck is by pressure of fingers on throat, or by foot or knees.

*Bansdola*: is compression of the throat, by one lathe or bamboo placed in front and the other behind and causing death.

(c) *Suffocation :* Causes are:—

(1) *Smothering*—due to closure of mouth and notsc by hand or other material like bed sheet,handkerchief or pillow. This is the commonest method of killing infants and children.

(2) *Over laying*—an infant by its mother during sleep or intoxication.

(3) *Burking:*—a method adopted by Burke and his associate hare for killing their victim. They used to throw the victims down on the ground, and kneeling on the chest, used to close the mouth and nostils with one hand and firmly hold the lower and upper jaws together with the other hand. Thus effectively blocking the air passages.

(4) *Gagging*—Stuffing the mouth and nose with any material e.g. rags, mud etc.

(5) *Chocking*—Blocking of larynx and trachea from within e.g. due to rigurgitation of vomit, blood, clotted milk or a fruit pieces etc. In these cases asphyxia is due to one or combination of i.e. (a) Mechanical block. (b) Spasn of glottis. (c) Ocdema produced by irritation due to foreign body.

(6) *Traumatic asphyxia*—due to pressure in chest as being crushd in a crowd or fall of a heavy wall etc.

(7) *Diseases*—as tumours, false membrane as in diphtheria, ocdema of glottis, or blood from haemoptysis, epistaxis, or wound on throat or pus from an abscess.

(8) *Inhalation of irrespirable gases* e.g. CO, $CO_2$, carbon disulphide ($CS_2$), Hydrogen sulphide $H_2S$, Nitrogen mono-oxide or nitro-oxide $N_2O$ $SO_2$, and war gases with.:

(a) Vesicants or blistering gases, Mustard gas.
(b) Asphyxiants—Phosgine.
(c) Tear Gas.
(d) Nasal irritants like AD, DC.,
(e) Paralysents—HCN., $H_2S$.

The following are the examples of the two very rare cases of asphyxial deaths brought to me at Civil Hospital Karachi for post-mortem examination.

1. Three persons in a petrol pump at Karachi were jocking each other on 4th October 1949. One of them caught hold of a middle aged man named Malik Aman, aged 45 years and another man standing near the air pumping machine used for filling tubes of vehicles wheels brought air nozle at his anal region and pushed the air through his pant inside the anus for a few seconds. This made the man feel very uncomfortable. He had pain in the tummy and became dyspnoic within few minutes. He was at once taken to Civil Hospital but he died on way to hospital at 4 p.m. on 4-10-1949. Post mortem examination was advised. The following were the findings.

*External Examination* :-



The whole body was bloated except extrimities and showed signs of surgical emphysema at bloated portions. Eye lids and conjunctiva were much swollen and air crepitus was found at these place. Minute pin point scattered ecchynomosis (Tardieus spots) were present in conjunctivale.

The air had not entered in the tissues of extrimities, posterior side and top of skull.

Face looked congested and cyanosed. Lips and the nails were bluish. Cadeveric lividity was marked.

There was prolapse of rectum and internal piles which were inflammed. Air crepitus could be felt around anal region. There was little fresh blood and blood mixed faecal mattero ozzing out at anal region. There was no trauma at or near anal region, nor on any other part of the body outside.

*Internal Examination*

On internal examination I found the following :—

*Head :*

Little old inflamatory changes and adhesions were present in dura-mater at segital suture of brain on top.

Brain was slightly congested.

**Thorax :**

Mediastinal structures were pushed to the left side and the lungs on both sides were found partly collapsed, more on right side.

The mucous membrane of trachea and bronchi were found congested.

A hole measuring 1"x1" was found in the right diaphragm 1-1/2" lateral to midline and 3-1/2" from anterior marginal attachment of diaphragm. The margins of the hole were turned towards the chest.

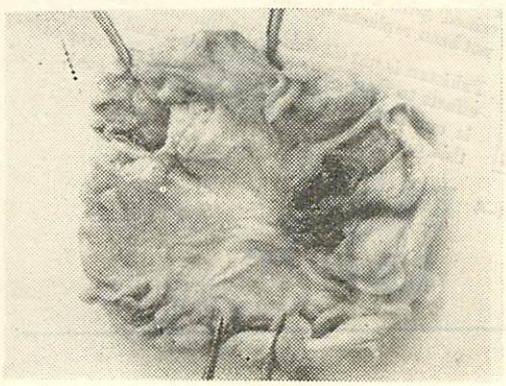
*Heart:* was found normal. Right side contained little dark coloured liquid blood and left was practically empty.

**Abdomen** Sufficient gas (air) came out after abdominal incision. All the abdominal organs were found congested.

*Stomach:* contained half digested food.

*Small Intestines:* were distended.

*Large Intestines:* were distended from caecum upto transverse. colon. The desending colon was not much distended and the pebrec colon and rectum were found collapsed. A hole was found in the pelvic colon 8 inches above the anal region measuring 1-1/2" in diameter as shown in picture below. The



margins were ragged and were turned inside the gut. Little blood, was also present inside the pelvic colon and rectum. The area around the hole was congested, inflamed and had haematoma.

*Cause of Death:* was quite apparent in asphyxia due to pressure over the lungs causing collapse due to forceful entry of air in the body by rupturing Pelvic colon and right diaphragm. This is a type of traumatic asphyxia.

**Case No. 2 :**

Dead body of an unknown young man aged about 30 years was brought by Korangi police from the jungle on 15th December 1970, for Post mortam examination. The following were my findings.

*External Examination:*

The body was naked and soiled with sand. Mouth and nose were stuffed (gagged) with sand and grass pieces. The tongue was pressed upwards and backwards. The mouth was opened . Blood mixed with sand particles was oozing out from right nostril.

There were two incised wounds in front of the neck which were not sharply cut and were not very deep. One wound was 1-1/2"x 3/4" muscle deep and another was 1"x1/3" Skin deep.

There were two more superficial cuts in front of the neck.

Multiple superficial cuts (8 or 9) were found at umblical region and a deep incised wound was present over the umblicus measuring 3"x1" cavity deep. The margins of the cut were not sharply defined.

*Internal Examination*

On internal examination I found the following:—

*Head*: There was no subcutaneus haematoma cranial bones were not fractured.

*Brains* was found deeply congested. CSF was found more than normal.

*Thorax:* Lungs were bulby oedematous ballooned and congested. Patches of subpleural ecchymosis were present (known as Tardius

spots named after French Police surgeon in 1866). These patches were varying in size from pin head to 1/4" in diameter. (They are caused by blood stasis, suboxia and capillary permeability). Many of the air vesicles were burst and fine frothy blood was found in the bronclioles and the bronchi.

Trachea and both the bronchi were fully choked with sand. Some of the sand particles had even reached smaller bronchioles. The mucous membrance of trachea and bronchi were cherry red and congested.

Larynx and upper part of oesophegus were also congested and stuffed with sand.

*Abdoman* :

All the abdominal organs were found congested.

Stomach was completely empty and no sand particles were present.

*Cause of death:* was Asphyxia due to gagging (Stuffing) with sand.

*Comment:*—This is a rare type of murder in a grown up person. Gagging with sand was tried after the stabbing was not successful because of non sharpness of the weapon. This could occur by more than one person or the person is very weak or intoxicated. His clothes were removed for the purpose of destroying the identity.





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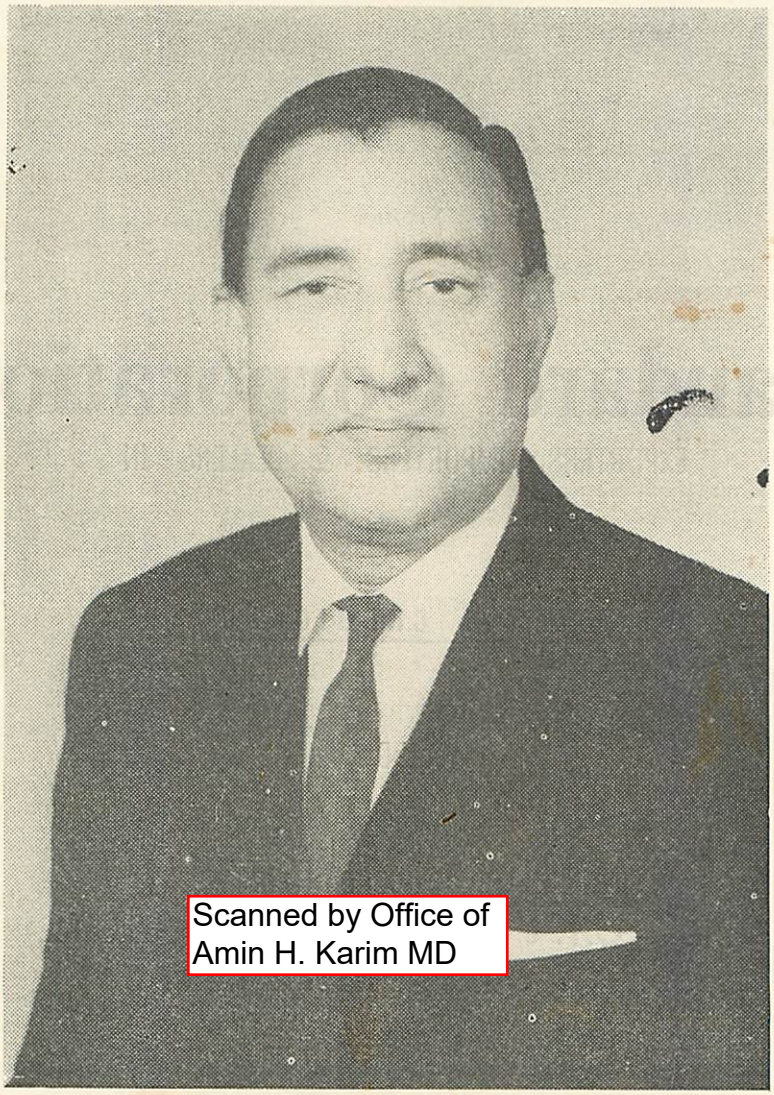
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# FAREWELL


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*Professor Mahmud Ali Shah*

M.B.,B.S. M.S., F.A.C.S., F.I.C.S.F.C.P.S.,

PROF. M.A. SHAH, the pride of Dow Medical College, who would always be remembered for his merritorious services.

As a man Prof. Shah, beside being very kind and sympathetic in nature, he is a man of great personality and dignity not too ready with words except when needed.

As a teacher having an intensive knowledge on his subject of ophthalmology, had a very systematic approach of the subject to the students and thereby would make the subject as simple as possible, and thus engrave it in the students minds. In other words, there are very few of his examples as a teacher.

As an administrator and patron of the students' Union: The Dow Medical College Students Union is proud to have had him as its administrator and a patron for about a decade and a half. He is a man of principles and absolute intellectual integrity. In any students' problem, as the patron, would go all out in trying to solve their problems peacefully.

As a doctor: Prof. Shah has helped to recover the sight of thousands of people.

## BIO DATA

Prof. Mahmud Ali Shah, born in 1911 in Punjab from where he did his early education and then he passed his M.B.B.S. from King Edward Medical College Lahore in 1935. Did his post graduation in M.S. (ophthalmology) from Punjab in 1943. Later on, he was honoured with fellow of American College of Surgery in 1954; Fellow of International College of Surgery and Fellow of College of Physician and Surgery (Pakistan).

## PROFESSION AND TEACHING

Worked as a house surgeon—Mayo Hospital as a casualty M.O.; as P.C.M.S.; as a demonstrator in Anatomy-King Edward Medical College; Part time M.O. Eye O.P.D. Mayo Hospital; and part time ophthalmic Surgeon Civil Hospital, Karachi. Assit. Prof. of Anatomy, Dow Medical College and later on from 46-49 Prof. of Anatomy and finally till retirement Prof. Eye Diseases, Dow Medical College, His contribution in making the Anatomy Museum was an instrumental in getting the Department and the college recognised by the then Bombay University.

**Administrator :**

Vice Principal, Dow Medical College, 48-54; Medical Superintendent, Civil Hospital Karachi 54-55; Director of Heaoth Services Karachi 56-57; Principal. Dow Medical College 55-70 and Administrator. Dow Medical College and Civil Hospital, Karachi 64-66.

**Academic :**

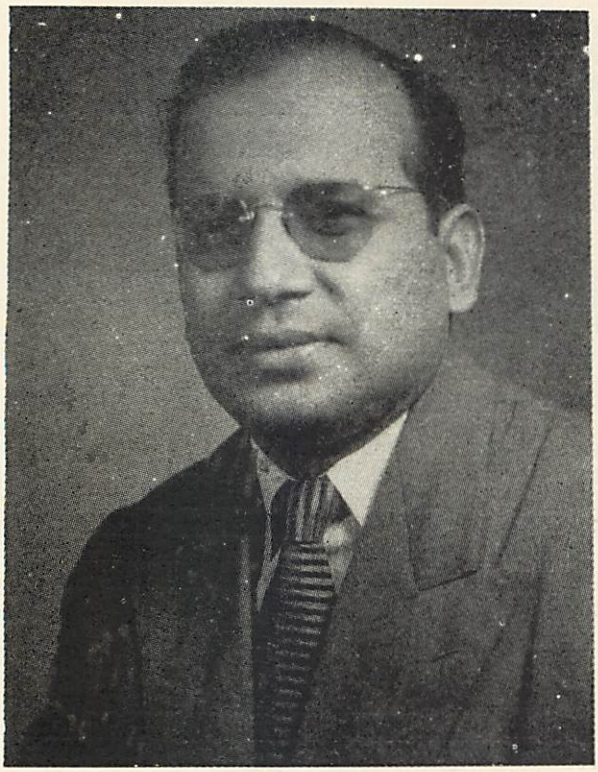
Member Medical Facility, University of Sind 47-52; Member Board of Studies for Medicine, University of Sind; member academic Council and of Senate, University of Karachi; 55-62; examiner of ophthal mology in 1947; Member scientific advisory Board, Pakistan Medical Research Fund Association. Member Pakistan Research Council 63-66; Member Council for Post Graduate medical education. West Pakistan. Member Pakistan Medical Council, Member Advisory Panel of Health Sector Family Commission. Govt. of Pakistan; founder Fellow Pakistan College of Physicians and surgeons.

**Travel Abroad :**

Lead Pakistan delegation to the W. H. O. M...diterranean Conference on Trochoma at Tunis in 1959. Visited U.S.A. 1965; U.K. 52 and 65&; Morocco, Spain, Yougosalavia 1959. Leader Pakistan Delegation to W.H.O. Mediterranean Conference on Medical Education at Tehran in 1962 where he was elected as the vice President of the Conference. Member special group W.H.O. on Medical education Alexanderia; Vice-President third World Conference on Medical education New York 1965.

**Research Work :**

Author of 45 papers on iffe rent aspects of Eye Diseases. Of his large number of contribution to literature, a few may be mentioned here. Prof. and Mrs. Shah's work on aterial supply of the vermiform appendix published in the anatomical record and thereafter included in Grant's Textbook of Anatomy—his contribution to ostelogy—his...corneal stitch published in the Journal of Ophthalmology , London and Epidermoloysis Bullosa of Conjunctive also reported in the same journal. His contribution to Geographic Ophthalmology and authoritative work of reference of Eye Diseases has met with in varius parts of the world, edited by Holmes and pubiished in Spring field, U.S.A.



# FAREWELL

## Professor
## TAFAZZUL HUSSAIN

M.B.,B.S. (London),
D.T.M. and H. (Eng.)
V.D.O. and V.D.P. (Liv.)

*Head of the Department of Pathology*
*Dow Medical College, Civil Hospital*
*Karachi.*

PROF. TAFAZZUL HUSAIN, after obtaining the M.B.B.S., degree worked as a house physian and then as a Medical Officer in Hyderabad Deccan for 2 years. He then, left for England for his past-graduation in 1947. He specialized in tropical medicine and Hygiene and obtained D.T.M.H. from the Conjoint Board of England. Then working at the Liverpool University and the Royal Infirmary with Dr. A.O. Ross M.D., and Dr. D. T. Robinson, Director City Pathological Laboratory, obtained the certificates of Venereal Diseases officer and pathologist of the Liverpool University. He worked as a research scholar at the Pathological Laboratory Derbyshire Royal Infirmory with Dr. G.R. Osborn, the Director of the Laboratory.

Prof. Taffazzul was very forminate in getting the guidance in the study of Pathology of a world famous scholar—a leading experimental pathologist—the author of the book "Pathology of Cell"—Prof. G. R. Cumeron. He worked with him and obtained his Ph. D. (Lon.) degree in Pathology. His paper on "The Effect of Pressure on the structure, function, and susceptibility to bacterial Infection on Voluntary Muscle with special reference to the Bed Sore Problem." was published in the journal of Pathology and Bacteriology to the M.B., Ch. B., students of the University, College Hospital, Medical School Lon London, for 2-1/2 years. He has visited Germany. The Marbonrg Aschoff House. He has also visited Venice Rome, Switzerland, Paris, Belgium, and Holland.

Dr. Tufazzul Husain joined the Department of Pathology of this institution in 1953 by succeeding Prof. G.T. Stewart, and retired in June 1970. During his Professorship in D.M.C. he has brought about the extension in the Department like Haematology, Bacteriology, clinical Pathology and Microbiology.

He brought up the Museum which previously had only 500 specimens, to about 1700 specimens.

In 1968, he was awarded fellowship of College of Physician and Surgeon of Pakistan (F,C.P.S.). From 1953 to date he has been an examiner of the subject of various Universities.



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# FAREWELL

## Dr. Mrs. Mubarika Shah

M.B.B.S. D.C.H. (London), Asstt. Physician (Paed),
*Civil Hospital, Asstt: Professor of Medicine (Paed)*
*Dow Medical College, Karachi.*

BORN in June 1915 in Punjab. Belongs to a respectable muslim family from Punjab. Did her early education from Punjab with several merits during her education carrier. Graduated M.B.,B.S. from King Edward Medical College in 1938, In her First, Second and Third Professional--Distinction in Hygiene and in Final M.B.,B.S. First in Eye, Ear, Nose and Throat.

In 1947 left for abroad to England for her Post Graduation. In 1948 she did her Post graduation from Great Ormond street Hospital, University of Edinburgh.

Dr. Mr Shah had the previlage of visiting children hospitals in Moscow, Sweden, Boston, Viana, etc.

In 1938-39 worked in a capacity of House Physician Lady Aithison Hospital, Lahore. From 1945 to 1951 as Demonstrator in Anatomy Dow Medical College. Became a Lecturer in Diseases of Children, Dow Medical College from 1951 to 1953, after which she was appointed as Associate Physician (Paed) Civil Hospital and also as Assistant Professor of Medicine (Paed) Dow Medical College. Dr. Mrs. Shah's hard laboour and personal efforts in completing the Anatomy Museum would never be forgotten. In her research work with rof. Shah on arterial Supply of the Vermiform appendix published in the Anatomiel report and thereafter included in Grants Text Book of anatomy.

Civil Hospital in general and the Paeiatric ward in particular would never forget load of personal effort and contribution that Dr. Mrs. Shah has offered to this institution,

# FAREWELLS



Farewell to Dr. Mrs. Nusrat
Deptt. of Physiology



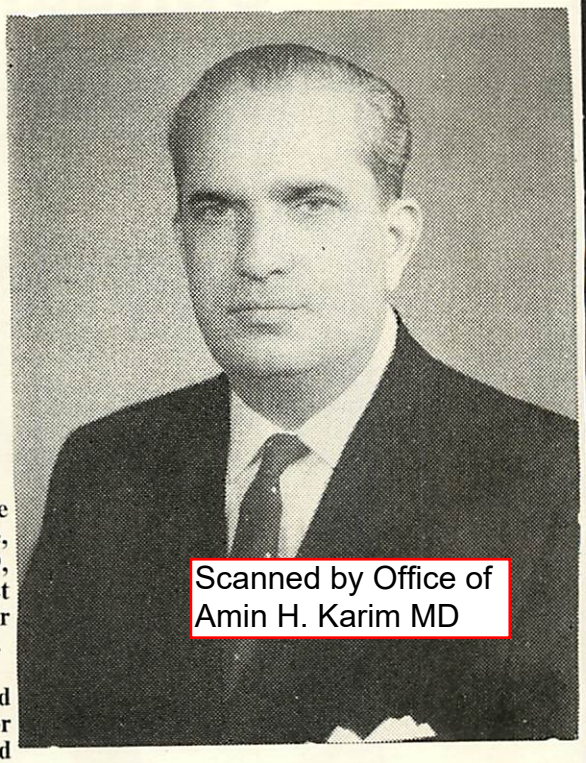
3rd Year Students Farewell to
Dr. M. A. Ansari



Farewell to Dr. M. F. Khan
Deptt. of Becteriology

# Obituary

*"Life is real; life is earnest,*
*And the grave is not its goal,*
*"Dust thou art, to dust returnest"*
*Was not spoken of the soul!"*



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**The most unforgetable day in the history of Dow Medical College, was the 12th of October 1969, when the medicos lost their most beloved and respected Professor of E.N.T. Prof. Shafiuddin Khan.**

**He would always be remembered with respect and appreciation for his meritorious services we rendered to our mother institution.**

**Prof. Shafiuddin Khan, was born on 21st June 1917 in Hyderabad Daccan. Graduated M.B.B.S., from Osmania Medical College in 1939, and Postgraduation, L.R.C.S. [Edinburgh] 1947; F.R.C.S. [Edinburgh] 1948; D.L.O. [London] 1948, F.A.C.S.; F.C.P.S.; F.I.C.S.**

**During his graduation in Osmania Medical College had distinguished record throughout by getting first place in all the Professional Examinations, and was awarded Gold Medale for General efficiency.**

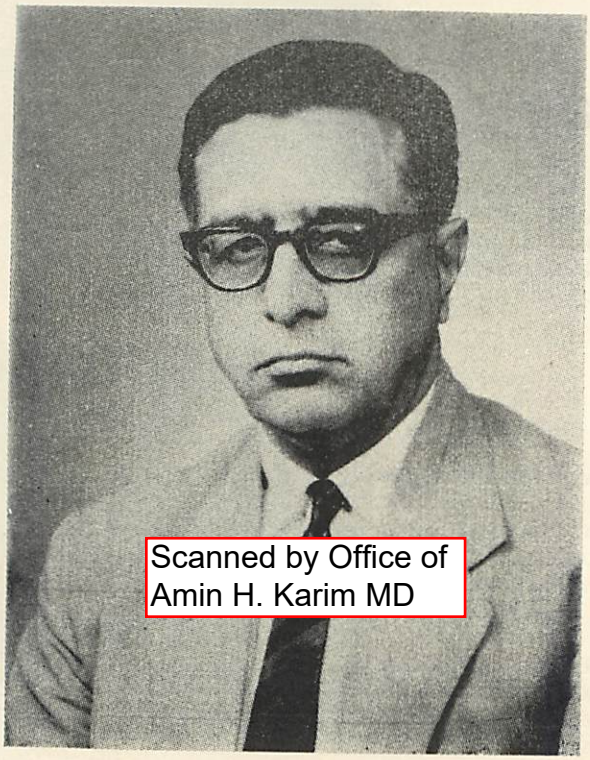
**In 1940 got Commissioned in the Army. In 1945 became graded specialist in E.N.T. from 1948 to 1949 worked as consultant to the army and attached to the Civil Hospital and Medical College. In 1949 relieved from the army as Senior Major. In July 1949 came to Karachi and was appointed as Professor of E.N.T. Dow Medical College, Civil Hospital, Karachi. In 1960 was awarded Honouary Fellowship from American College of Surgeons.**

**Prof. Shafiuddin contributed general papers in the speciality and attended most of the international congresses and seminars.**

**May the departed sant rest in in Peace "*Aameen*".**

**We extend our heart felt sympathies to the members of the bereaved family.**

# Obituary



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*"How Shocking must thy summons be,*
*O! death, to him, that is at ease in his Passessions?*
*Who Counting on long years of pleasure*
*Here is quite unfurnished for the world to come*

"ELAIR"

**It was the 8th of January 1971 when the Country in general and Dow Medical College and Civil Hospital in particular lost a cardiologist, who was loved and respected by all his colleagues friends and students alike.**

**Prof. Piracha beside having a sound knowledge of medicine, had great interest in literature, both in English and Urdu. His last publication was on Heart Transplantation, which he contributed to the College Annual Urdu Magazine "*Namood-e-Sehar*". (Silver Jubilee Edition)**

**Born on 4th July 1908, was a domicle of Makbad of distric Attock, West Pakistan. Graduated from K.E. Medical College Lahore in 1933. Obtained his M.R.C.P. in 1948 from London and again in 1949 from Edinburgh.**

**In 1933 to 1934 was a house Surgeon in Mayo Hospital Lahore and was later on assistant Civil Surgeon in Punjab Medical Service from 1955-59.**

**Prof. Priracha joined Dow Medical College in 1949 as honourary Professor of Cardiology. He had a very fatherly and a Sympathetic approach to the students.**

**May his life be beacon light for all of us and inspire and guide us to dedicate ourselves to selfless devotion and service to humanity.**

**May the departed soul rest in peace *Aameen.***

**We extend our heart felt sympathies to the-members of bereaved family.**

# Obituary

The untimely death of Dr. Ashfaq Hussain Siddiqui in the Prime of his life was really shoking and heart breaking. In him we not only lost a teacher demonstrator but also a most kind and loveable brother.

Born on 5 July 1942, Graduated M.B.,B.S. from Dow Medical College in 1966. Did his junior and senior House Physicine in Civil Hospital Karachi. Being a domicile of Karachi Joined Dow Medical College on 27th April 1968 as a demonstrator in Anatomy.

Expired on 29th May 1970 of Cerabral Embolis. We extend our heart felt sympathies to the members of the bereaved family.

May Allah grant peace and rest to the departed saul.

*—Aameen.*

# Obituary



## Golam Hussain Dolly

BORN on 21st of March 1942 at Transwal in South Africa. Graduated in Mathematics and Political Science in 1961. Started working voluntarily as a teacher in a school where only those coloured children studied who were deharred from studying in other schools by the racial regime. Had to leave his country in 1963 due to political reasons. Three years after arrival in Pakistan his father, a member of congress, was hanged in South Africa for political reasons. After the death of his father Dolly decided to do medicine. After passing his F.Sc., Pre-medical he got admission in King Edward Medical College in 1968. Migrated to Dow Medical College in March 1970. Took a very active part in activities of College. Went to Lahore in first week of July to see his friends. Developed infective hepatitis and died on 13th of July after remaining in Hospital for three days. He was burried in Lahore.

May the Departed soul rest in peace.

Aameen.




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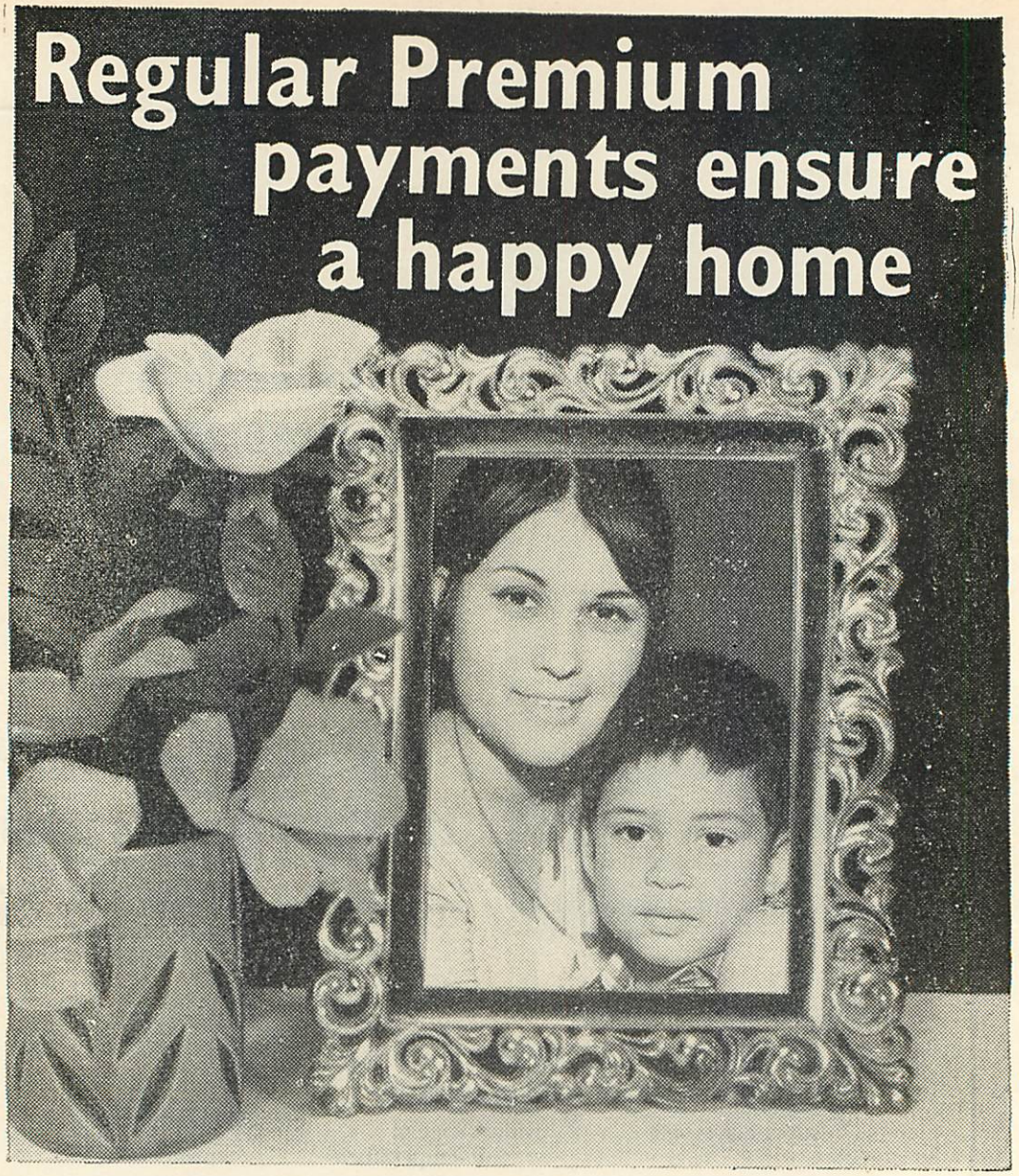
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# SIR HUGH DOW



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SIR HUGH DOW of 1947 (CIE 1932); KCSI, of 1940 (CSI 1937); KSTJ; b 8 May 1886; s of Alfred Dow; m 1913, Ann (CHE 1947, CStJ m K-iH Gold Medal) (d 1956), d of J. Sheffield; one as one d. Educ: Aske's Hatcham Sch; University College, London, Entered ICS, 1909; Secretary, Finance Dept. Bombay, 1923; Financial Adviser, Public Works in Sind, 1925; Financial Adviser, Public Works and Development, Bombay, 1926; Revenue Officer, Lloyd (Sukkur) Barrage, 1927; Member of the Sind Conference, 1932; Chairman of Sind Administrative Cttee, 1933-34; Joint Secretary, Commerce Dpett. 1934; Secretary to the Government of India, Commerce Deptt, 1936-39; Director-General of Supply, and President of the War Supply Board, India, 1939-41; Governor of Sind, 1941-46; Governor of Bihar, 1946-47; Consul-General, Jerusalem, 1948-51m Chairman, Ordination Funds Commission, 1952; Chairman Royal Commission on East Africa, 1952-54; Chairman of Council, Royal Central Asian Society, 1947-58. Address: 6 Charles Street W.1.
Clubs: Athensaeum, Lansdowne.

# Sir Hugh Dow's Speech at the Dow Medical College Foundation-Stone Laying Ceremony

HIS Excellency the Governor said:

"THE Hon'ble Minister has given you a full account of the steps which have led to the foundation of this college, and I will not go again over the same ground. I have always held the view very strongly that, once it was decided that there was a case for erecting Sind into a separate province, a decision which whatever its merits is not likely to be easily reversed, there was exactly the same case for deciding that Sind should have all the educational institutions which it needed within its own borders and that it should have complete control of them.

"I shall say nothing on the highly controversial questions of the form that a Sind University should take, or of the relationship between a Sind University and the Sind Government. But it is obvious that neither a Sind University nor a Sind Government can expect to have any effective control over educational institutions in other provinces; and, therefore, Sind cannot decide on what pattern its educated population (which I hope will soon include all its population) shall be turned out so long as Sind continues to depend on outside schools and colleges for educating its own sons. In the present state of Sind, I regard the expansion of educational facilities, whether primary, secondary or collegiate, which is the business of Government, as a more urgent question than the control of curricula and the conferment of degrees, which are the business of a University.

"These remarks are, perhaps, more applicable to medical education than to any other branch. There is a great dearth of qualified doctors and nurses throughout Sind, and over large areas of the mofussil medical assistance of any kind is practically non-existent. The training of Sindhi men and women in extra provincial medical colleges is not only expensive, but even at any price, a sufficient, number of places for Sindhi students cannot be obtained. It was, therefore, urgent that our own facilities should be expanded and our own medical college should be opened at as early a date as possible.

"I fully endorse the tribute which has been paid by the Hon'ble Minister to his predecessor. Dr. Hemandas Wadhwani. His efforts were untiring he would accept no discouragement and it is certain that this scheme would not have been brought to the stage which we see today had it not been for his enthusiastic and devoted work. I have done my best to second his efforts, but in my opinion the college might have been more appropriately named after him than after me; and indeed it would not bear my name if the existing constitution had permitted me to come to a decision otherwise than in accordance with the advice of my Ministers, of whom Dr. Hemandas was then one.

**Civil Hospital Beds :**

"It was recognised from the beginning that the opening of this college at Hyderabad was a stop-gap arrangement, and that the proper location of the

college would be at Karachi. The inadequacy of be accommodation and facilities at the Civil Hospital, Karachi, has long been a trying scandal: I need only mention the act that the population of Karachi has trebled since it was built. The decision to have a medical college here has made it absolutely urgent to expand the Civil Hospital, and as you now see something has been done. It is still in my opinion not nearly enough, and the next few years ought to see a still further great increase of hospital accommodation, together with institutions and hostels for the training of large number of nurses.

"The nursing staff in the Civil Hospital here is deplorably insufficient for even the present number of patients, and up-country the position is still worse. I was shocked to find in my recent visit to Hyderabad that there was only one resident sister and one non-resident nurse to attend to the wants of over 180 in patients, and that even this one nurse was expected in addition to attend to the wants of outside patients of private practitioners, who considered that they had a demand on her services. Such state of affairs is really scandalous, and I hope public opinion in Sind will soon be caused to demand that it shall cease.

"Another thing that is immediately and urgently required here in Karachi is the provision of proper hostel accommodation for the students of this college. I understand that at the moment it is proposed to divert part of the new hospital bed accommodation to the purposes of a hostel for the students. I look out this proposal with the gravest concern."

"I had hoped that this function would have given me the opportunity of addressing a few words by way of encouragement to the students of the new college but I understand that all or most of them are still at Hyderabad and are not likely to be here for some weeks. From the local press I learn that at my recent visit to the Civil Hospital there I was greeted with cries of "*Jai Hind*," I am sorry I did not hear them, for I know no reason why I should not myself have joined in a slogan for the helping forward of which I have already worked in the country for thirty-five years.

"If, as I hope, they have this slogan not only on their lips but in their heart they may rest assured that they have chosen a profession the quiet diligent and orderly pursuit of which will do far more to secure the health and prosperity and even the victory and independence of Hind than any amount of shouting of slogans, making of speeches, and taking out of processions. Nor do I suggest that their interest in the progress of their fellowmen should be postponed till their student days are over.

"There is in Hyderabad a flourishing Blood Bank, which has been instrumentnl in saving the lives of fifty Hyderabadi during the last year. It was rather blow to me to find that in spite of much propaganda, this bank has to rely almost entirely for its blood on holding out inducements to criminals in the local jail; and that not a single drop of it came from any medical practioner in Hyderabad or from any student in the medical college or medical school. This is a reproach which might well be removed.

"On looking back over old friendships I am struck by how large a proportion of the finest men I have known have been medical men. Something of this is perhaps due to the fact that there is no profession which offers more obvious scope for the constant exercise of the best instincts of human nature. And, in looking forward, instead of looking back, it is clear that Sind offers unlimited scope for good doctors who are at the same time good men. I hope that this institution which I am now inaugurating will attract to itself a large proportion of young men and women, whose lure is not merely personal ambition or the hope of gain, but a strong, desire to use all the opportunities which their profession affords for the alleviation of pain and suffering among the poor in the rural as well as in the urban, areas, of this province."

# MESSAGE

*Dear Mr. Shariat,*

It is very kind of you to think of putting a photograph and message from my beloved father, Late Dr. K.T. Ramchandani, who was the first Principal (Pre-Partition) of the Dow Medical College, in your annual publication "DOWLITE INTERFATIONAL".

My father expired on 18th of April 1968. He used to talk about Dow Medical College, which started in Hyderabad (Sind) quite often. He used to teach the subject of Medicine in the same College and was one of the most respected and popular teachers there I am sorry I am not able to send his photograph, as we have got only one copy at our home.

Please do accept my sincere good wishes on the auspicious occasion of the Silver Jubilee celebrations of your institution. May your institution grow bigger and bigger in the field of Medical research and medical relief to the suffering humanity. I wish you and your institution all success and prosperity.

*Best Wishes,*

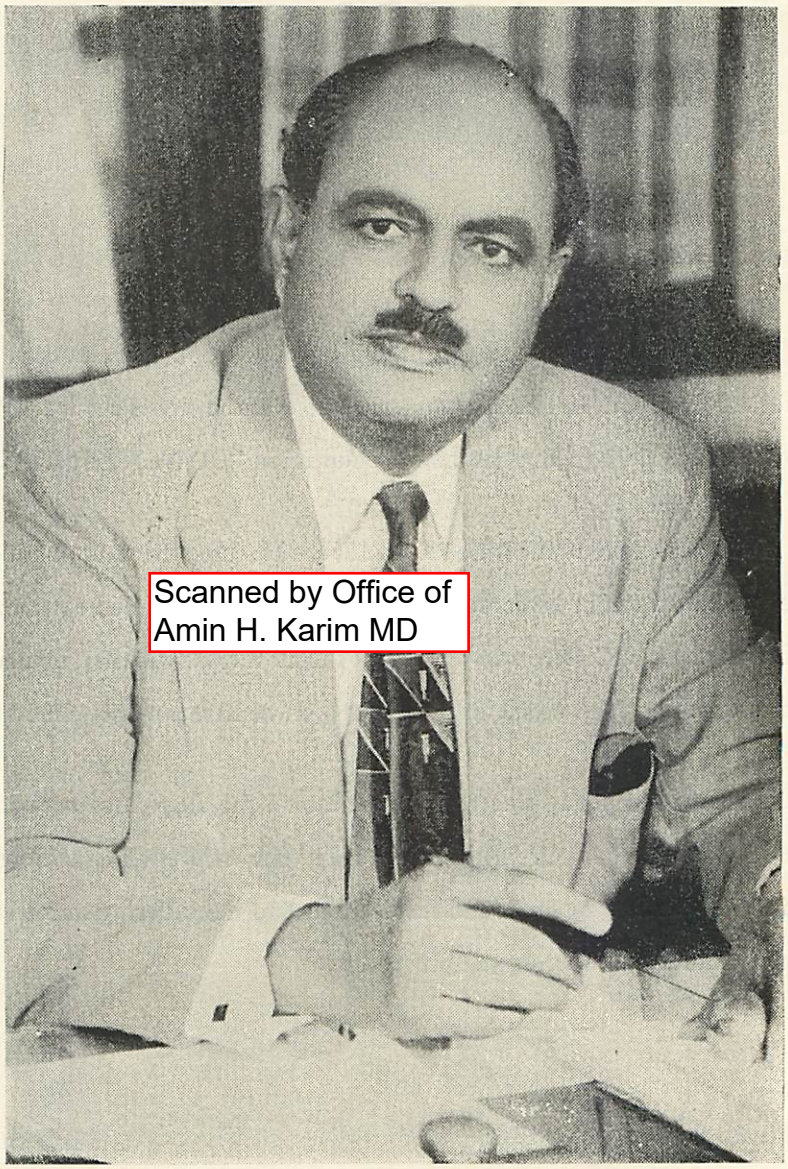
*Yours Sincrely,*

S/d.....

I.K. RAMCHANDANI,
M.D.

*Professor, and Head of the Deptt., of Physiology,*
*Seth G. S. Medical College,*
*Parel, Bombay,* 12-D.

# FIRST PRINCIPAL



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Lt. Col. AZIZ K. M. KHAN

I. M. S. (Retd) F.R.C.S.

# MESSAGE

Col. AZIZ KHAN, I.M.S. (*Retd.*)
F.R.C.S.,

IN 1945 on return from active service during World War II, I was appointed officiating Inspector General, Civil Hospitals, Sind and was assigned the responsibilities to start a Medical College at Karachi.

On 10th December 1945, foundation stone of the college was laid in the old N.J.V. High School, at its present site, by the then Governor of Sind, Sir Hugh Dow and the college was named Dow Medical College, under the University of Bombay.

In July 1946 I was appointed the First Principal and Professor of Surgery in addition to my duties as Inspector General Civil Hospitals. The University of Bombay granted temporary recognition for the pre-clinical courses and gave one year time to develop the pre-clinical departments of Anatomy and Physiology. You can well imagine the gigantic up-hill task. The N.J.V. High School had to be demolished and new departments and lecture halls had to be constructed. Anatomy museum with dissected specimens had to be prepared. I am most grateful to the absolute minimum nucleus of staff on my disposal, who whole heartedly co-operated with me and shouldered this heavy responsibility.

I wish to place on record the services—practically round the clock—rendered by Dr. Mahmood Ali Shah, M.S., and his wife Dr. Mubarika Ali Shah, who were Demonstrators of Anatomy and prepared Anatomy Museum which the Bombay University Inspection Committee remarked. "We cannot belive our eyes that this could have been achieved in such a short time."

From pin-cushions, to Laboratory Equipments, microscopes, Jars and furnitures had to be built. The World War II had just finished and there was world shortage of Laboratory Equipments and we had to run wild trying to buy these from where ever we could. A God sent opportunity came to our luck. At the Malir Cantonment, the American had built a hugh base hospital and supply depot. The Americans were leaving, taking away the equipment, but the Government of Sind authorised me to buy up this American Base Hospital and all the equipments of the depot.

In 1947, Pakistan came into being and the Government of Pakistan had no promises. The Ministry of Health, Government of Pakistan was housed on the premises of Dow Medical College and we gave the Director General Health, Government of Pakistan all facilities.

In 1948, the Hindu Staff of the College and Civil Hospital, doctors, nurses, ward-boys, sweepers etc., gave us a surprise of our life. During night, they all migrated to India. Ships were kept ready for them at Karachi Harbour and we were kept unaware. This "closed door" scheme was worked out by Hinre political Heads to collapse Pakistan, some even told us while leaving," We aud returning as conquerors withen 15 days."

Merciliesly mutilated and penniless refugees from Delhi ane other places started pouring in Karachi because of mass killing of Muslims in India and Pakistan was really on the brink of collapse but Allah saved us because of future events, the killings of Muslims in Katiyawar, Hyderabad Daccan, etc etc.

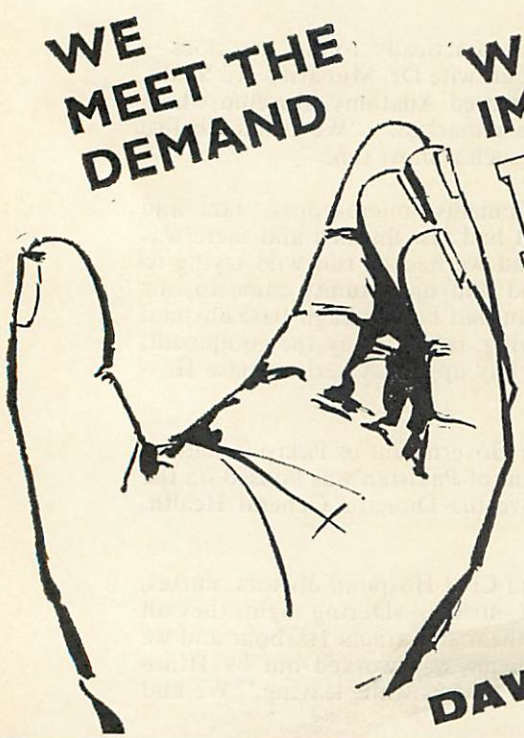
Muslim Professors and Doctors started coming to Karahi from India and they were blessings from Allah and they saved the situation and the chrished dreams of the Hindus to return to Pakistan as conquerors died for ever.

I could naturally write volumes on the history but it would be out of occasion. I am happy to Dow Medical College blooming and blossing. Out Muslim youths are comihg from other Islamic Countries for Medioal Education here. Our Dow Graduates are spread all over the world and have won place of honour and prestige even in U.K. and U.S.A. and are on great demand.

I pray to allah that he may shower his choicests' blessing on ourAlma Mater, I am happy to see Dow Medical College has come back to the Govvernment of Sind as this Institution was their cherisad first born child for which they had taken greal pleasure ane pride and I trust they would double their love and affeetion for this Institutein.

*Pakistan Paindabad*



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*Professor Mahmud Ali Shah*

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# Message

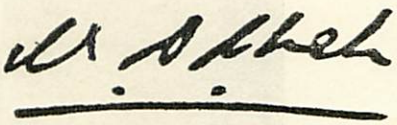
ON this occasion of the Silver Jubilee of Dow Medical College, Karachi, I send my greetings to the Dow Medical College Students' Union.

These greetings are from one who has had a long association with this College, indeed from its very inception, as a teacher (1945-69), Vice-Principal (1948-55)and Principal for a record period of over 14 years (1955-59)6.

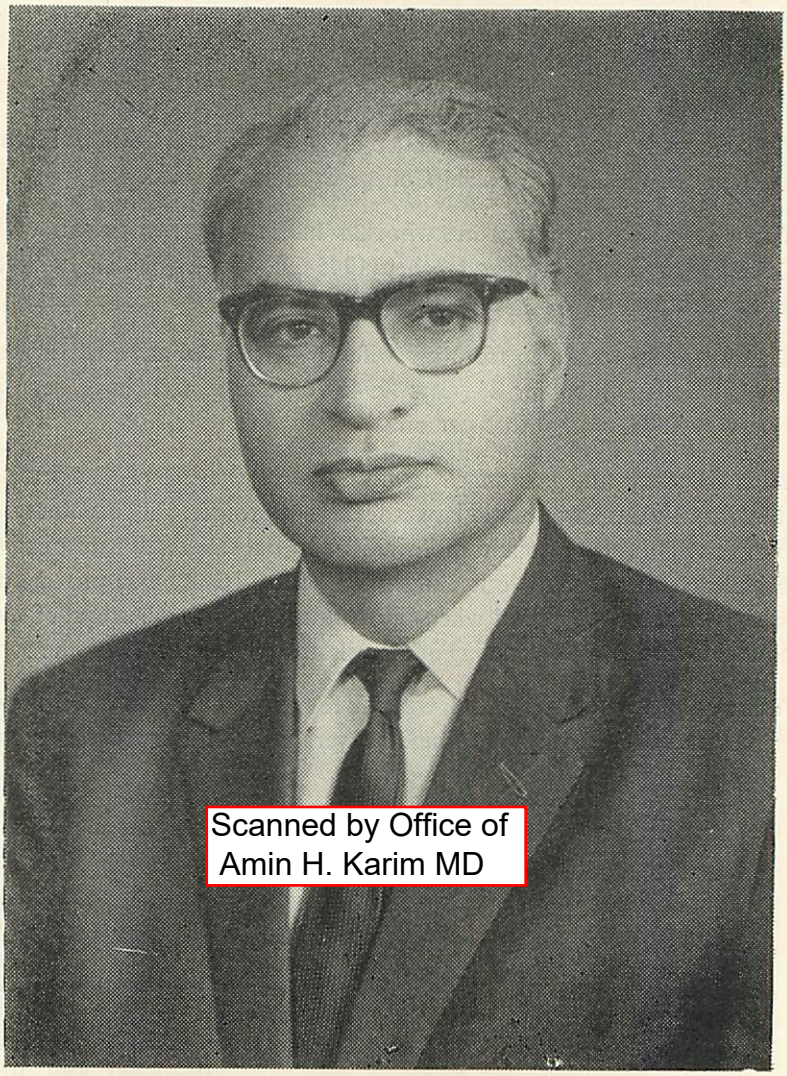
These greetings are also from my wife Dr. Mrs. Mubarika Shah who has been a teacher in his College for over 25 years (1945-70), and in that has, therefore, the longest association with it than any other person.

With the deep and prolonged involvement in the life of this Institution it is but natural that, at this time, we should have a feeling of profound thankfulness to the Almighty for enabling us to discharge our responsibilities to the satisfaction of our conscience, even as we discharge them towards our children. We are happy and proud on this occasion, even as we are happy and proud when our children cross a milestone of their life successfully, and look forward to its crossing other milestones in the future even more successfully.

As in the past, as in the future, we look forward to its growth with confidence, which we will continue to follow with profound prayers and keen personel interest.



Prof. M. A. SHAH,
Principal and Professor
Dow Medical College, Karachi, (Retd.),
Vice-President 3rd World Conference
on Medical Education.



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Professor MUSHTAQ HASSAN
M. D., F. R. C. P. Ed.

# Message

TO be asked to write a message for DOWLITE on the occasion of the Silver Jubilee of Dow Medical College is at once a unique pleasure as well as an occa:ion for serious stock taking with a view to energise all concerned towards further effort and attainment.

As one who has served this College for the best part of these 25 years since 1948 when most of the staff and opted to go away across the border after Independence and when many departmments were left unmanned, when a young man like me as I then was, who was primarily selected by the Sind Public Service Commission to teach Therapeutics and Clinical Medicine in a Lecturer's post, had in addition found himself required to head the Departments of Pathology and Pharmacology *et. seq.*, when all that work gave one unique pleasure, and a sense of contribution, however humble, it is a matter of joy and thanks giving that one has been spared by Providence and back in this Institution after serving others for some time, to celebrate this occasion with many of one old colleagues and alumni and, of course, one's present day students. That one is looked upon with respect and affection by so many of one's students is the principal pleasure and privilege of a teacher, which few in other walks of life are fortunate enough to enjoy.

Old memories of happy associations are a treasure to live with and on this occasion one remembers the many colleagues and a huge number of students one has enjoyed the company of, seniors one has enjoyed serving under and juniors whom it was and is invigonating to have in one's team and a pleasure to train.

But a Silver Jubilee is the celebration of a HAPPENING, the mere passage of 25 years in the life of and institution, like people celebrating their birthdays and silver anniversaries of the weddings of happy couples.

The Silver Jubilee of an institution is a milestone where one pauses to think of its attainments as a whole and of its principal constituents: the staff and students and the administration that helps it to run along desired lines and towards the desired goal.

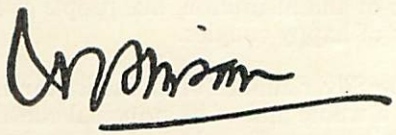
In the context of the administration, the institution has passed through many hands. From the original Government of Sind, it went to the Central Government, thence to West Pakistan Government and finally to the new Sind Government again. Too many changes in the administration are liable to bring certain set backs with them at times. Now that it has come back to the Government of Sind, good administration, better financial allocation and its better utilisation is likely to help it come up at a faster pace than hithertofore. The staff and students have to ask themselves the big question: Could we have done better? The answer is certainly YES. The difficulties of the former do not end themselves to discussion here but those of the students do merit consideration. Lur students have to ask themselves: Are we making full use of the educational facilities offered in this insititution or are we dissipating our energies along other channels or detours that lead us away from the straight path orginally chosen by us? The answer, in large measure, is: NO. One has only to remember that the shortest distance between two points is a straight line and anything longer than this is a detour which claims uncessary time and effort. Life is short while science and art are long and need whole hearted attention. Continued harmony and good will among all is a pre-requisite in a teaching institution and I am confident that it will be maintained.

Apart from these base-line considerations, with their energetic and fertile minds, the better among our students, who are an easy match with the best anywhere in the world, can think along more academic lines on their own initiative like some students of Edinburgh who in 1737 decided to found a student medical society to meet weekly in a tavern to hear dissertations on some medical subject from one of their members. This Society received the Royal Charter in 1779 from George III and came to be known as the Royal Medical Society of Edinburgh. It is the oldest student society in Great Britain and has cultivated a truly distinguished tradition. No wonder that great men like Lord Lister (of Antiseptic Surgery fame), Sir James Simpson (Scottish Obstetrician whose forcaps are well known), Sir Charles Bell (palsy etc), and Charles Darwin (Theory-of Evolution) are some or its distinguished past members.

Muslims too have a great tradition of learning and contribution. Can't they in this era enliven it rather than be content with memories of days long past? Surely they can. Then why not the students of Dow Medical College which already produced some very able alumni? Many of our students surely have that extra energy and initiative and talent which can be harnessed in this attractive direction rather than in some others, some of which can lead us nowhere except intellectually and professionally barren wastelands.

The College alumni have now attained a very large number. Competition is growing tougher and fiercer as time is ticking by. Now more than ever do they have to stick to the rules of fair competition and traditional values of life that make it worth living here and worth fighting for. They have to guard against letting the whole thing acquire the completion and odour of a rat race. I am sure most of them are far and away from this kind of possibility and I know that their approach to life and their deeds are wholesome and small sweet.

That this historic occasion should be celebrated by the students of this College on their own initiative without help from the Government and without self interest is a token of their unbounden love for their Alma Mater. I congratulate the President and office bearers of the Students' Union for this, and Mr. Hashem Shariat, the Magazine Secretary for the personal and painstaking effort he has put in to dig out the early history of the College with the help of the relevant authorities and reaching the original sources of information in the manner of a scholar of history and also the general effort he has put in to produce this year's "Silver Jubilee Edition" of DOWLITE INTERNATIONAL which I hope will be an unprecedented success.



(PROF. MUSHTAQ HASAN)
M.D., F.R.C.P.Ed.
*Professor of Medicine, Dow Medical, College,*
*Head of the Deptt of Medicine, Karachi University.*
*and*
*Ex,Chairman Magazine Section*
*Dow Medical Colloge Students, Union*

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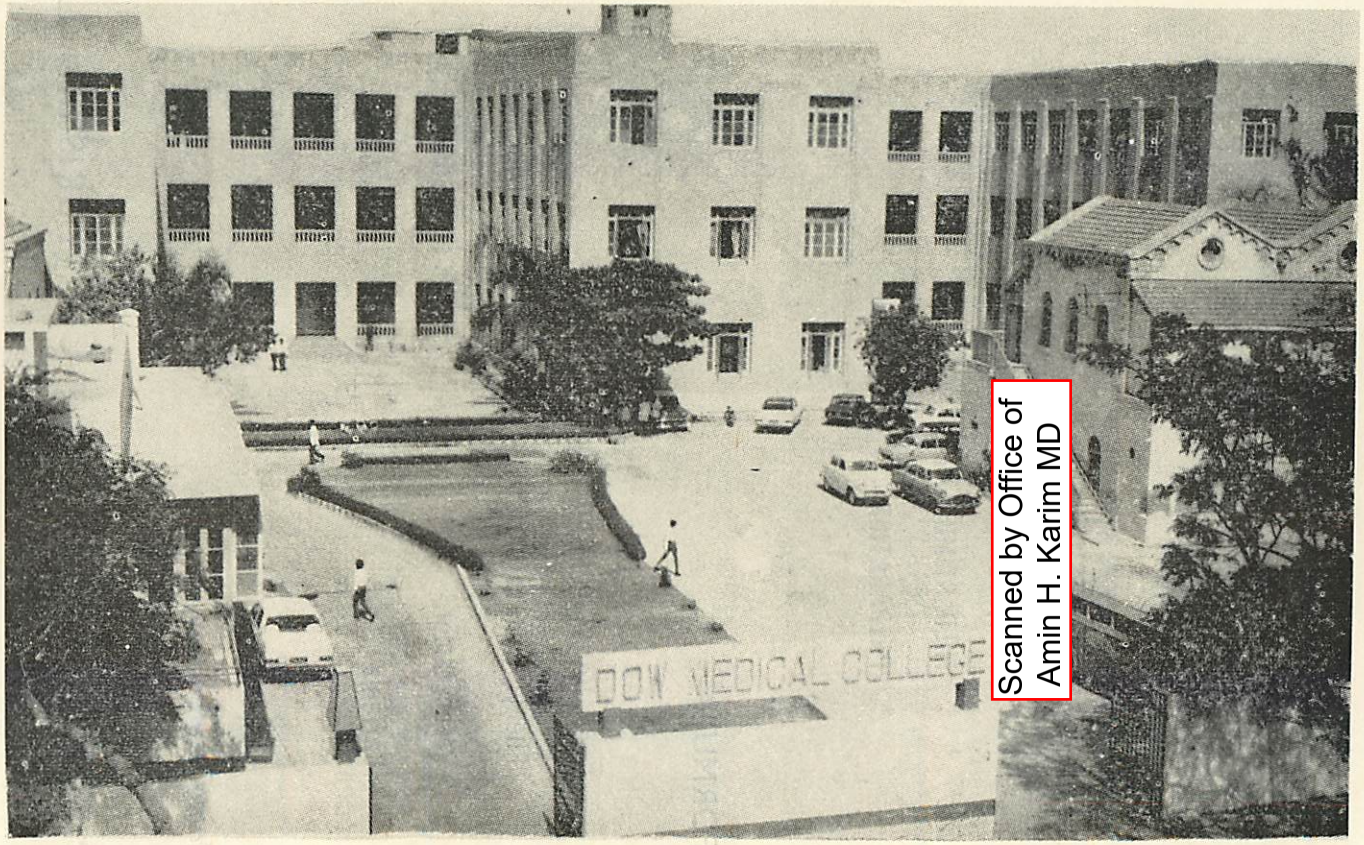
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(Photo by Editor)

# Birth of Dow Medical College Karachi

By
**HASHEM SHARIAT**
EDITOR & MAGAZINE SECRETARY
Dow Medical College Students' Union

THE necessity of raising the Medical School at Hyderabad established in the year 1881 which was as a result of personal efforts of Dr. Holmisted, to the status of a full fledged degree college, was keenly felt by the former Government of sind in the year 1941, when the Indian Medical Council recommended the introduction of a Uniform Standard of Medical Education throughout the sub-continent, by either abolishing Medical Schools for Licentiates or by raising them to University Standard.

In pursuit of these recommendations the late Government of Sind constituted a committee consisting of the Inspector General of Civil Hospitals, Sind, the Civil Surgeon Karachi and the Executive Engineer, Karachi Building Division in the year 1941, to give the recommendation of the Indian Medical Council practical shape, *and also explore the possibility of shifting the Medical School from Hyderabad Sind to Karachi* and its subsequent conversion into a Degree College. The Committee submitted its report to the Government of Sind but the proposal made no head-way owing to heavy financial stringenoy at that time.

The proposal was hower resuscitated in 1943 by Dr. Hemandas R. Wandhwani the *then Minister* Incharge, Medical and Public Health Portfolio. The then inspector General of Civil Hospitals, Col., J.E. Gray took keen personal interest in the initial development of college. He along with Mr. Abhichand (P.W.D.) went all over India to see the design of various medical colleges and on return the plans of Dow Medical College was a result of this study.

Col., Gray used to visit the building under construction and also the Anatomy museum *under preparation* very frequently and by his personal efforts tried to remove any bottle-neck or inpediment in progress. During his absence abroad on leave during that period the officiating Inspector General Civil Hospital, Major (Later Lt. Col.,) Aziz K.M. Khan continued to take the same interest so that the project should be completed within the shortest time. He subsequently became the Principal and the head of the department of Surgery.

The new building when was ready was inaugerated by Governor Mudie, of Sind with colourful ceremoney attended by high civil officials. The first Batch of 45 students for the proposed M.B.,B.S. Class among whom there was only one Muslim girl student named Miss Fahmeeda Shaikh was admitted in June, 1945, in Hyderabad Sind Medical School redesignated Medical College. Thus the Medical College ultimately was called to life.

In 1944 University of Bombay granted temporary affiliation but when a team of 3 inspectors (Dr. Molgonkar, Dr. Yodh, & Col., Jalal M. Shah, but Col., Jalal Shah could not come) visited the college later in that year they disaffiliated the institution for, interalia, lack of Anatomy museum, dissected specimen, library, etc., They further said that the Anatomy museum should have 500 exhibits and that sufficient number of dissected part should be made available to the students for the purpose of revision. They further suggested as the clinical material was not likely to be enough in Hyderabad for training 40 Doctors, the institution should be shifted to Karachi. For all this they gave the Government 9 months after which the inspection committee proposed to revisit the college and then on the recommendation of this committee the college was affiliated to University of Bombay for a period of 2 years from 1945 to 1946 for the courses of studies leading upto the First M.B.,B.S. Examination, on the understanding that the college would be shifted to Karachi before the end of first year. The 1st batch of 20 students appeared in their 1st Professional M.B.,B.S., examination in October 1947, Prof. Motvani from Bombay University was the external examinar, and result was 100%.

The college was transferred to Karachi from Hyderabad on 31st December, 1945 and was temporarily housed in N.J.V. High School Building, where the Medical College Office, Library and students' common rooms are housed at present.

Mr. P. W. Abhichandani, Executive Engineer, Sind P.W.D., proposed the design for the new College building after seeing on the spot the Medical College at Bombay, Lucknow, Delhi and Amritsar. He was accompanied, during the tour by Lt. Col. J.E. Gray, the then inspector General of Civil Hospitals. Sind. The foundation stone of the new college Building was laid on 10 December, 1945 by Sir Hugh Dow, the then Governor of Sind, after whom the Medical College is named. It started functioning in a portion of the ground floor of the new building in November, 1946.

The Bombay University Inspection Committee which again inspected the college in December, 1946 recommended that the affiliation of this college should be continued for the preclinical subjects of the M.B.,B.S., Degree and conditionally recommended affiliation for the clinical and allied subjects. Recognition of the Anatomy Department came about as a result of marathon sessions of hard work put in by Professor and Dr. Mrs. M.A. Shah, to get the Anatomy Museum ready within a year of their appointment in this college.

On the emergence of Pakistan the Inspection Committee appointed by the University of Sind visited the Dow Medical College on 22nd & 223rd December, 1947 and recommended the affiliation of the college for teaching courses in Medicine leading upto 3rd M.B.B.S. Degree Examination (equivalent to existing Final Professional M.B.B.S., Examination).

Since its inception, the college remained under the administrative control of the former Sind Government upto 7th July, 1951. The Central Government took over this Institution and its attached Hospital on 8th July, 1951, from the Government of Sind as a natural consequence of the former having taken over the administration of Karachi from Sind. Since then the College made much headway and the pace of progress accelerated. However no one can fail to be impressed by the magnitude of problems which initially had to be faced and overcame. From 7th March, 1962 the administration of this college was taken over by the West Pakistan Government from the Central Government. With the dismemberment of "One Unit" on 30th June, 1970, the Institution has automatically returned to Sind Government.

The College is affiliated to the University of Karachi since 1951. The Pakistal Medical Council accorded recognition to the College in the year 1953. The Genera Medical Council of Britain also accepted the recognition of those Medical graduates who qualified in May, 1955 and onwards.

It is not super-fluous to point out that this college started functioning in the year 1945-46 with 44 students on its roll. Skeleton staff was provided in order to meet initial requirements and was augmented in subsequent years with the addition of senior classes. Thus we were having 3rd M.B.B.S. Class in the year 1948-49. The number of admissions were also increased simultaneously as soon as better facilities for teaching etc. were provided by the former Government of Sind. 92 students were admitted to the 1st year M.B.-B.S., Class in the year 1948-49. as compared with 44 students in the year 1945-46 lead-upto 130 students in 1953. With the passage of time the number of admission to the College increased further. By 1957 it had reached 158 and this year (1970-71) the number has increased to 224 students. (In 1951 reorganisation of teaching post in Dow Medical College and attached Civil Hospital and Jinnah Central Hospital was done on recommendation of Col., Jalal M. Shah who suggested creation of number of specifilists units in both the hospitals).

In August, 1952 a course of Diploma in Pharmacy started functioning. This course extended over a period of two academic years. The students were required to complete the following courses of study during these two years.

(1) Pharmaceutics. .. (2) Forensic Pharmacy.
(3) Pharmaceutical Chemistry. .. (4) Physiology, Pharmaceology & Toxicology,
(5) Pharmacognosy.

In July 1954 the condensed M. B. B. S., course was started for the medical Licentiates when 14 students were admitted. These Licentiates were required to undergo a course of at least 2 years duration. The 1st 6 months were devoted to the study of Anatomy, Physiology and Pharmacology, whereas the remaining period of 18 months was devoted to:—

(i) A course in Medical Jurisprudence & Hygiene.
(ii) A full course in Pathology.
(iii) Hospital Practice (Medical & Surgical) for the entire period of clinical studies.
(iv) Compliance of Pakistan Medical Council's requirements in Midwifery & Gynaecology.
(v) All other subjects and courses as laid down for the Final Professional M.B.B.S. Examination.

The College was still in embryonic stage with difficulties in staffing upto the year 1948-49 with its students raised upto only III year, M.B.B.S. By 1950 the institution was complete when the first batch of 9 students left the portals of the college after passing the final year M.B.B.S., Examination of the University of Sind.

Dr. Hamidali M. Khan then the only Assistant Professor of medicine had to hold additional charge of the department of Pharmacology after Professor Bose migrated to India on partition. Dr. Mushtaq Hasan Lecturer in Therapeutics in the department of medicine had to work as Professor of Pathology and later of Pharmacology as well when Dr. Khan left on a Fellowship Overseas. The Pathology and Pharmacology Departments were kept going by these means.

The College after being affiliated to the University of Karachi in the year 1951 it affords instructions for:—

(i) M. B. B. S., Degree of the University of Karachi (which is recognised by the Medical Council of Pakistan and Royal College of nahPscsiiA Edinburgh. (extending a period of five years.)
(ii) Provides facilities for condensed M. B. B. S. Course (extending a period of two years.)
(iii) Provides course of instruction for F.C.P.S., (extending over a period of 2 years.)

## DEPARTMENTS

The college is organised in the following major departments for teaching purposes, each headed by a professor.

| | | |
|---|---|---|
| BASIC: | (i) Anatomy (ii) Physiology (iii) Pharmacology & Therapeutics. (iv) Pathology. | |
| CLINICAL: | (i) Ophthal mology | One Unit. |
| | (ii) Ear, Nose & Throat Departments | Two Units. |
| | (iii) Medicine. .. | Three General Medical units. |
| | (iv) Surgery .. | Three General Surgical units and an orthopaedic unit, |
| | (v) Obstetrics & Gynaecology .. | Two units, each headed by a Professor. |

In addition to the above departments, there are a number of more specialised units in the Civil Hospital, Karachi.

The Clinical departments are now located in the attached Civil Hospital only, unlike previously when the Jinnah Central Hospital Karachi was also attached to the college and had various clinical departments functioning there as well. The main college building houses all the basic departments.

All the Professors and Departmental Heads refer their academic and personal problems to the office of the Administrator Dow Medical College, which sends all its proposals and correspondence etc. through the Secretary of Health, Sind Secretariat, Tughlaq House Karachi for obtaining sanction of the Government before execution.

This institution caters for the training of undergraduate Medical students and prepares the students for M.B.B.S., degree of the University of Karachi, the ultimate aim of which is to secure adequate distribution and utilisation of trained personnel in relation in the needs of the entire population and thereby providing medical services to the individual and community. The courses of study for M.B.B.S., extend over a period of 5 academic years between the date of commencement of study of the subjects comprising the medical curriculum and the date of final qualifying examination; provided that the last three years of the period must have been spent in the study of the clinical group of subjects.

In put in a nut shell the 1st and 2nd years of studies are devoted to the subject of Anatomy and Physiology.

In 3rd and 4th year the students are required to complete, Pharmacalogy, Forensic Medicine & Texicology, Hygiene, Pathology, Bacteriology and Parasitology respectively. In the final year they are required to complete (i) Medicine and Diseases of Children (2) Midwifery and Gynaecology (3) Surgery (4) Diseases of the Eye and (5) Diseases of Ear, Nose and Throat, etc. During the 3rd, 4th and Final years, the students are divided into small groups for practical work (e.g. Hospital practice, Indoor and Outdoor etc.) in the vaious clinics. Besides, the students also attend Lectures, tuitorial and demons trations in the subject(s) to be completed in the Final year during the aforesaid period.

This Institution is committed not only to conduct teaching of heighest order but also to studyd iseases and science underlying medicine in order to add to Medical knowledge.

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1. Dr. Kewalram Tarasingh Ramchandani M.B.B.S. , (Bombay) S.M.S.I. — From 1st June, 1945 to 30th Dec. 1945.

2. Lt. Col. Aziz Khan Mohammad Khan, I.M.S. (Rtd.) F.R.C.S., F.C.P.S., F.A.C.S. F.I.C.S., M.B.B.S,, L.R.C.P., M.R.C.S., D.L.O. R.C.S., D.M.R.E., R.C.S. .. From 31st Dec. 1945 to 25th Jan. 1953.

3. Lt Col. Sher Muhammed Khan Malik, M..D.,F.R.C.P., D.P.H., .. From 26th Jan. 1953 to 31 Aug. 1954.

4. Lt. Col. Aziz Khan Mohammad Khan, I.M.S., (Rtd.) F.R.C.S., F. A. C. S., F.I.C.S. M.B., B.S., L.R.C.P., M.R.C.S., D.L.O. R.C.S., D.M.R.E., R.C.S., .. From 1st Sep., 1954 to 25th May, 1955. A.N.)

5. Pofes.sor Mahmud Ali Shah, M.S., F.C.P.S,,F.I.C.S., F.A.C.S., .. From 26th May, 1955 (A.N.) to 29th .. September, 1969.

6. Professor A. Wahid, M.S.(Surg) (Luck) M.S. (Anat) (Luck), F.I.C.S., .. From 30th September, 1969 tc date.

The post of Principal has redesignated Chairman, College Academic Council with effect from 9th March, 1960.

## BASIC DEPARTMENT HEADS IN SEQUENCE

(1) ANATOMY:

| | | | |
|---|---|---|---|
| | Dr. A. Guha, M.Sc. .. | Professor .. | 1944 to 1946 |
| (2) | Dr. M. A. Shah, .. MS., F.C.P.S., F ACS, FICS, | Professor | 19-6-46 to 26-1- 49 |
| (3) | A. Wahid .. | Professor | Acting |
| | | Professor | 27-1-49 to 30-12-49 |
| | | Professor | 31-12-12-49 to date |

(2) PHYSIOLOGY :

| | | | |
|---|---|---|---|
| (1) | Dr. Inderjit Singh Ph. D. (Cautah) | | 1944 to 1948 |
| (2) | Dr. M. A. Basir., M.B.B.S., Ph. D., | Professor | 11-12-48 to to1949 |
| (3) | Dr. S.H. Zaidi, .. M.B.B.S. M.D., | Offtg. Prof. | 14-5-51 to 1-7-51 |
| | | Professor. | 2-7-51 to 7-7-52 |
| | Dr. Charles Reid, .. M. A., D.Sc., M.D., D.P.H. | Professor .. | 30-4-52 to 24-4-57 |
| (5) | Dr. S. Afaq Ahmed. B.Sc., (Med). | Professor .. | 1-3-63 to 3-1-66 |
| (6) | Dr. Gulzar Ahmed. Ph. D., | Professor | 4-1-66 to 19-4-66 |
| (7) | Dr. S.H. Zaidi, M.D., .. | Professor. .. | 8-9-66 to date. |

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(3) PHARMACOLOGY :

| | | | |
|---|---|---|---|
| (1) | Dr. B.C. Bose, M.D., D.Sc., .. | Professor | 20-4-44 to 14-4-48 |
| (2) | Dr. Mazharul Haq, M.B.B.S., M.D. | Professor | 2-2-49 to 29-2-68 |
| (3) | Dr. S. M. Yousuf, M.B.B.S., Ph. D., | Professor | 1-8-68 to date |

(4) PATHOLOGY :

| | | | |
|---|---|---|---|
| (1) | Dr. J. Mordacai. M.D. | Offtg. Prof. | 1944 to 31-12-45 |
| (2) | Dr. D. Golakery Ph. D. | Professor .. | 31-12-45 to Aug. 1948 |
| (3) | Dr. Mohammad Ali Mistry M.D., (Lond.) MRCP (Eng.) | Hony. Part-Professor | 16-9-48 to 31-1- 49 |
| (9) | Dr. Mushtaq Hasan, M.D. | Professor. | Feb. 49 to June, 1949 |
| (5) | Dr. M. A. Husain Ph. D., .. | Professor. (a) (b) | 15-7-49 to 28-7-50 20-11-50 to 4-3-53 |
| (6) | Dr. G.T. Stewart, B.Sc., M.D., DTM & H. | W. H. O. Professor. | 4-3-53 to 21-12-53 |
| (7) | Dr. Tafazzul Hussain, .. M.B.B.S., DTM & H. Ph. D. | Professor .. | 27-1-54 to 6-6-70 |

(5) HYGIENE & PREVENTIVE MEDICINE:

| | | | |
|---|---|---|---|
| (1) | Dr. Habibur Rahman .. | Part-time Professor .. | 1-7-50 to June, 51 |
| (2) | Major Shamsuddin, B.Sc., M.B.B.S., B.S.Sc., D.P.H. (Lond.) | Part time Professor. | 30-8-51 to 5-9-54 |
| (3) | Dr. Mohammad Iliyas .. B.Sc., M.B.,B.S. DPH., M.P.H., (Harward) | -do- | (a) 6-9-54 to 1-5-55 |
| (4) | Major G.H.K. Niazi, M.B.B.S., DPH., | -do- | 2-5-55 to 7-3-67 |
| (5) | Dr. M. Iliyas M.B.,B.S. D.P.H., MRH., | -do: | 8-3-57 to 2-2-64 |
| (6) | Dr. M.A. Ansari M.B.,B.S. D.P.H. (Lon. | -do- | 3-2-64 to date |

(6) FORESNIC MEDICINE & TOXICOLOGY :

| | | | |
|---|---|---|---|
| (1) | Dr. S.M. Ataur Rahman, M.B.B.S. | Part-time Professor. | 25-8-51 to Sept, 54 |
| (2) | Dr. A.J. Khan, M.B.B.S., | -do- | 127-9-54 to 30-1-54 |
| (3) | Major Anwarul Hasan, M.B.,B.S. | -do- | 1-12-54 to 10-8-68 |
| (4) | Dr. Mohammad Umer Khan; M.B.,B.S. | Police Surgeon | May, 68 to date. |

## CLINICAL DEPARTMENTS

| | | | | |
|---|---|---|---|---|
| (1) SURGERY : | (1) | Lt. Col. Aziz K. M. Khan, IMS. FRCS. FACS., FICS., DCO., DMRE., LRCP., | Professor & head of the deptt of Surgery. | 31-12-45 to 25-5-55 |
| | (2) | Dr. Munawar Ali, F.R.C.S. | Hony. Prof. | 28-3-49 to 15-7-55 |
| | (3) | Lt. Col. Said Ahmed, M.B.B.S., FRCS., FICS., | Professor. | 30-4-54 to 18-2-65 from 1955 continued as head of the deptt of Surgery and also Director of Cancer Institute in Jinnah Central Hospital till1960 |
| | (4) | Dr. M. A. H. Siddiqui .. T.Pk, M.A., M.S., F.R.C.S., | Professor | 5-1-53 to 12-7-57 |
| | (5) | Dr. S.A.H. Razvi, .. M.B.,B.S. C.H.M., F.R.C.S., F.C.P.S., | Professor | 4-8-65 to date. |
| | (6) | Dr. Fazal Elahi., .. M.B.B.S., DTM&H (Eng.) F.R.C.S. (Edin) FACS. FICS | Professor. | 18-2-65 to date. |
| | (7) | Dr. Naseer Shaikh., M.B.,B.S. F.R.C.S., .. | Professor. | 1968 to 21-1-69 |
| | (8) | Ismail A. Agjee., M.B.,B.S.; F.R.C.S. | Professor. | 22-1-69—Nov. 70 |
| | (9) | Dr. Naseer Shaikh- ... M.B.,B.S. F.R.C.S., | Professa- | Nov. 70 to date |
| (2) MEDICINE : | (1) | Dr. Mohd. Ali Mistry .. MD (Lond) MRCP (Eng.) | Hony. Professor. | June, 48 to 31-3-51 |
| | (2) | Major S.A. Hasan, .. M.B.B.S., FRCP., | Professor. | 13-8-47 to 30-11-66 |
| | (3) | Lt. Col. M.H. Shah, MRCP. D.PM. | Professor of Clinical Medicine. | 22-8-51 to 1954 |
| | (4) | Lt. Col. S.M.K. Mallick M.D. F.R.C.P., | Professor | 26-1-53 to 31-8-54 |
| | (5) | Dr. Mushtaq Hasan M.D., F.R.C.P., | Professor | 17-5-63 to date |
| | (6) | Lt. Col. Najib Khan., T. Pk. MD. (Durhan) F.A.C.C.P. | Professor | 13-9-66 to date. |
| | (7) | Dr. A. M. Kassim .. MBBS., M.R.C.P., F.R.C.P. | Professor .. | 15-1-57 to 1-9-63 |

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|---|---|---|---|
| (8) | Dr. Iftikhar Ahmed., MBBS., M.R.C.P., D.T. M&H .. | Professor. | (i) 6-2-65 to 9-9-56<br>(ii) 30-11-66 to 24-4-69 |
| (9) | Dr. M. Hayat Zafar, M.R.C.P., D.T.M. & H., D.M.R.E., .. | Professor | 3-5-69 to 3-7-70 |
| (10) | Dr. Kh. Muin Ahmed, MBBS., D.T. M&H. M.R.C.P. | Professor | 14-7-70 to date. |

(3) EYE :

| | | | |
|---|---|---|---|
| (1) | Dr. M.A. Shah M.B.B.S., M.S., (Pb) PCPS., FACS., F.I.C.S. .. | Professor, | 15-12-48 to 29-9-69 |
| (2) | Dr. A.D. Minhas, MBBS., L.M.S., D.L.O., D.O.M.S., F.I.C.S., .. | Eye Surg. | 16-5-53 to 1962. |
| (3) | Dr. M.M. Hasan M.B,B.S.; D.O.M.S.; F.R.C.S. | Professor | 13-7-70 to date |

(4) EAR NOSE & THROAT.

| | | | |
|---|---|---|---|
| (1) | Dr. A. Rahman. M.B.B.S. (Luck) Ph.D. Luck) DMRE., | Part-time. | 12-9-58 to 13-7-49 |
| (2) | Dr. Shafiuddin Khan, D.L.O., FRCS. (Edin). .. | Professor | 14-7-49 to 12-10-69 |
| (3) | Dr. Asghar Nizami, MBBS., FRCS., (Eng.,) D.L.O. (Eng.) F.I.C.S., | Professor. | 7-9-59 to 2-9-63 |
| (4) | Dr. M.A. Qayyum, FRCS., D.L.O. D.O., | Professor | 22-11-69 to date. |
| (5) | Dr. I.H. Jafri, MBBS. D.L.O., (RCP & RCS), FRCS. (Eng.) | -do- | 18-6-70 to date. |

(5) OBSTETRICS & GYNAECOLOGY :

| | | | |
|---|---|---|---|
| (1) | Dr. A.P.R., Pinto, M.D., FRCS., (Edin), M.S., F.R.C.S. (Eng.) | Professor | 1-8-47 to 31-1-51 |
| (2) | Dr. Miss. S.A.A. Siddique, M.B.B.S., D.G.O., MRCOG., FRCOG., | Professor | 3-4-51 to 19-9-66 |
| (3) | Dr. Mrs. Zubaida Aziz, MBBS., (Pb.) FRCS (Edin) FRFPS, (Glasgow) FRCOG. | Professor | 5-1-54 to date. |

| | | | |
|---|---|---|---|
| (4) | Dr. Abdus Samad Chowdhri, M.B., MRCOG., FRCOG., (Lond.) | Professor. | 2-3-54 to 1-9-63 |
| (5) | Dr. Salar Akhtar Aziz, MBBS., D.G.O., (Dublin) L.M., (Totunda) MRCOG., FRCOG. | Professor | 28-3-67 to date. |

(6) ORTHOPAEDICS:

| | | | |
|---|---|---|---|
| (1) | Col. Ronald Simcox, F.R.C.S., .. | Honorary Professor. | 24-2-49 to 1952 |
| (2) | Dr. A. Rahim, T.Q.A., M.B.B.S., M.Ch. (Orth) (Liv) FRCS.? (London) | (1) Associate Surgeon & Assistant Prof. | 27-4-53 to 11-10-62 |
| | | (2) Prof. | 12-10-62 to date. |

(7) PAEDIATRICS:

| | | | |
|---|---|---|---|
| (1) | Mrs. Mubaraka Shah M.B.,B.S.; DCH. (Lon.) .. | Asstt. Physician and Asstt. Professor. | 1951— to June 1970. |
| | Dr. A. Gaffar Billoo M.B.,B.S. D.T.M. & H. D.C.H. M.R.C.P. (Edin.) | Asstt. Professor 23-12-69 to date | |

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# General Strength of the College Year-Wise

| YEAR | Male | Female | Total |
|---|---|---|---|
| 1945-46 .. .. | — | — | 44 |
| 1946-47 .. .. | — | — | 47 |
| 1947-48 .. .. | 140 | 17 | 157 |
| 1948-49 .. .. | 182 | 34 | 216 |
| 1949-50 .. .. | 232 | 76 | 308 |
| 1950-51 .. | 307 | 109 | 416 |
| 1951-52 .. .. | 446 | 113 | 559 |
| 1952-53 .. .. | 525 | 137 | 662 |
| 1953-54 .. .. | 628 | 182 | 810 |
| 1954-55 .. .. | 598 | 190 | 788 |
| 1955-56 .. .. | 600 | 195 | 795 |
| 1956-57 .. .. | 654 | 211 | 865 |
| 1957-58 .. .. | 687 | 195 | 882 |
| 1958-59 .. .. | 687 | 195 | 882 |
| 1959-60 .. .. | 631 | 182 | 813 |
| 1960-61 .. .. | 609 | 170 | 779 |
| 1961-62 .. .. | 616 | 174 | 790 |
| 1962-63 .. .. | 602 | 194 | 796 |
| 1963-64 .. .. | 626 | 200 | 826 |
| 1964-65 .. .. | 641 | 187 | 828 |
| 1965-66 .. .. | 651 | 206 | 857 |
| 1966-67 .. .. | 673 | 220 | 893 |
| 1967-68 .. .. | 702 | 249 | 951 |
| 1968-69 .. .. | 795 | 243 | 1,038 |
| 1969-70 .. .. | 846 | 272 | 1,118 |
| 1970-71 .. .. | 815 | 285 | 1,100 |

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# Roll of Admission to 1st Year M.B.,B.S. Class

| YEAR | Male | Female | Total |
|---|---|---|---|
| 1945-46 .. .. | — | — | 44 |
| 1946-47 .. .. | — | — | 47 |
| 1947-48 .. .. | 77 | 5 | 82 |
| 1948-49 .. .. | 76 | 16 | 92 |
| 1949-50 .. .. | 107 | 18 | 125 |
| 1950-51 .. .. | 83 | 24 | 107 |
| 1951-52 .. .. | 100 | 30 | 130 |
| 1952-53 .. .. | 100 | 30 | 130 |
| 1953-54 .. .. | 103 | 30 | 133 |
| 1954-55 .. .. | 100 | 30 | 130 |
| 1955-56 .. .. | 100 | 30 | 130 |
| 1956-57 .. .. | 102 | 30 | 132 |
| 1957-58 .. .. | 100 | 30 | 130 |
| 1958-59 .. .. | 100 | 30 | 130 |
| 1959-60 .. .. | 100 | 30 | 130 |
| 1960-61 .. .. | 100 | 30 | 130 |
| 1961-62 .. .. | 96 | 30 | 126 |
| 1962-63 .. .. | 102 | 30 | 132 |
| 1963-64 .. .. | 94 | 40 | 134 |
| 1964-65 .. .. | 111 | 39 | 150 |
| 1965-66 .. .. | 112 | 41 | 153 |
| 1966-67 .. .. | 116 | 42 | 158 |
| 1967-68 .. .. | 121 | 37 | 158 |
| 1968-69 .. .. | 142 | 53 | 195 |
| 1969-70 .. .. | 154 | 50 | 204 |
| 1970-71 .. .. | 163 | 60 | 223 |

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# Roll of Foreign Students Year-Wise

| Year | Country | Ist Year | | IInd Year | | IIIrd Year | | IV Year | | Vth Year | | Total | | Grand Total | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | M. | F. | M. | F. | M. | F. | M. | F | M. | F. | M. | F. | M. | F. |
| 47-48 | | | | | | | | | | | | | | | |
| 48-49 | E. Africa | 1 | — | — | — | — | — | — | — | — | — | 1 | — | 1 | — |
| 49-50 | E. Africa | — | — | 1 | — | — | — | — | — | — | — | 1 | — | 1 | — |
| 50-51 | E. Africa | — | — | — | — | 1 | — | — | — | — | — | 1 | — | 1 | — |
| 51-52 | E. Africa | 1 | — | — | — | — | — | 1 | — | — | — | 2 | — | 2 | — |
| 52-53 | E. Africa | 1 | — | 1 | — | — | — | — | — | 1 | — | 3 | — | | |
| | Ceylon | 1 | 1 | — | — | — | — | — | — | — | — | 1 | 1 | 5 | 1 |
| | Iran | 1 | — | — | — | — | — | — | — | — | — | 1 | — | | |
| 53-54 | E. Africa | — | — | 1 | — | 1 | — | — | — | — | — | 2 | — | | |
| | Ceylon | — | 1 | 1 | 1 | — | — | — | — | — | — | 1 | 2 | 5 | 2 |
| | Iran | — | — | 1 | — | — | — | — | — | — | — | 1 | — | | |
| | India | 1 | — | — | — | — | — | — | — | — | — | 1 | — | | |
| 54-55 | E. Africa | — | — | — | — | 1 | — | 1 | — | — | — | 2 | — | | |
| | Ceylon | — | 1 | — | 1 | 1 | 1 | — | — | — | — | 1 | 3 | 6 | 3 |
| | Iran | — | — | — | — | 1 | — | — | — | — | — | 1 | — | | |
| | India | 1 | — | 1 | — | — | — | — | — | — | — | 1 | — | | |
| 55-56 | E. Africa | — | — | — | — | — | — | 1 | — | 1 | — | 2 | — | | |
| | Ceylon | — | — | — | — | — | 1 | 1 | 1 | — | — | 1 | 3 | 6 | 3 |
| | Iran | — | — | — | 1 | — | — | 1 | — | — | — | 1 | — | | |
| | India | — | — | 1 | — | 1 | — | — | — | — | — | 2 | — | | |
| 56-57 | E. Africa | 1 | — | — | — | — | — | — | — | 1 | — | 2 | — | | |
| | Ceylon | — | — | — | — | — | 1 | — | 1 | 1 | 1 | 1 | 3 | 7 | 3 |
| | Iran | — | — | — | — | — | — | — | — | 1 | — | 1 | — | | |
| | India | 1 | — | — | — | 1 | — | 1 | — | — | — | 3 | — | | |
| 57-58 | E. Africa | — | — | 1 | — | — | — | — | — | — | — | 1 | — | | |
| | Ceylon | — | — | — | — | — | — | — | 1 | — | 1 | — | 2 | 6 | 2 |
| — | Iran | — | — | — | — | — | — | — | — | 1 | — | 1 | — | | |
| - | India | — | — | 1 | 1 | — | — | 1 | — | 1 | — | 3 | — | | |
| | China | 1 | | — | — | — | — | — | — | — | — | 1 | — | | |
| 58-59 | E. Africa | — | — | — | — | 1 | — | — | — | — | — | 1 | — | | |
| | Ceylon | — | — | — | — | — | — | — | — | — | 1 | — | 1 | | |
| | Iran | — | — | — | — | — | — | — | — | 1 | — | 1 | — | 6 | 1 |
| | India | — | — | — | — | — | — | 1 | — | 2 | — | 3 | — | | |
| | China | — | — | 1 | — | — | — | — | — | — | — | 1 | — | | |

Scanned by Office of
Amin H. Karim MD

| YEAR | Country | Ist Year | | IInd Year | | IIIrd Year | | IVth Year | | Vth Year | | Total | | Grand Totai | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | M. | F. | M. | F. | M. | F. | M. | F. | M. | F. | M. | F. | M. | F. |
| 59-60 | E. Africa | 1 | 1 | — | — | — | — | 1 | — | — | — | 2 | 1 | | |
| | India | 3 | — | — | — | — | — | 1 | — | — | — | 4 | — | | |
| | China | — | — | — | — | 1 | — | — | — | — | — | 1 | — | 8 | 2 |
| | Iran | — | 1 | — | — | — | — | — | — | — | — | — | 1 | | |
| | S. Africa | 1 | — | — | — | — | — | — | — | — | — | 1 | — | | |
| 60-61 | E. Africa | 3 | 1 | 1 | 1 | — | — | — | — | 1 | — | 5 | 2 | | |
| | India | — | — | 3 | — | — | — | — | — | 1 | — | 4 | — | | |
| | China | — | — | — | — | — | — | 1 | — | | — | 1 | — | | |
| | Iran | — | 2 | — | 1 | — | — | — | — | — | — | — | 3 | | |
| | S. Africa | 1 | — | — | — | — | — | — | — | — | — | 1 | — | 13 | 6 |
| | U. K. Br. Guina | 1 | — | — | — | — | — | — | — | — | — | 1 | — | | |
| | U.K.Nayas-aland | 1 | — | — | — | — | — | — | — | — | — | 1 | — | | |
| | Burma | — | — | — | — | — | 1 | — | — | — | — | — | 1 | | |
| 61-62 | E. Africa | 2 | — | 3 | 1 | 1 | 1 | — | — | 1 | — | 7 | 2 | | |
| | India | — | — | 2 | — | 1 | — | — | — | 1 | — | 4 | — | | |
| | China | — | — | — | — | — | — | — | — | 1 | — | 1 | — | | |
| | Iran | 1 | — | — | 2 | — | 1 | — | — | — | — | 1 | 3 | | |
| | S. Africa | 1 | — | 1 | — | — | — | — | — | — | — | 2 | — | 24 | 6 |
| | UKBG | — | — | 1 | — | — | — | — | — | — | — | 1 | — | | |
| | UKNL | — | — | 1 | — | — | — | — | — | — | — | 1 | — | | |
| | Burma | — | — | — | — | — | — | — | 1 | — | — | — | 1 | | |
| | Jordan | 1 | — | — | — | — | — | — | — | — | — | 1 | — | | |
| | S. Arabia | 4 | — | — | — | — | — | — | — | — | — | 4 | — | | |
| | Ethopia | — | — | 2 | — | — | — | — | — | — | — | 2 | — | | |
| 62-63 | E. Africa | 2 | — | 2 | — | 3 | 1 | 1 | 1 | — | — | 8 | 2 | | |
| | India | — | — | 2 | — | — | — | 1 | — | 1 | — | 4 | — | | |
| | China | — | — | — | — | — | — | — | — | 1 | — | 1 | — | | |
| | Iran | 2 | — | 1 | — | — | 2 | — | 1 | — | — | 3 | 3 | | |
| | S. Africa | — | — | 1 | — | 1 | — | — | — | — | — | 2 | — | 35 | 6 |
| | UKBG | — | — | — | — | 1 | — | — | — | — | — | 1 | — | | |
| | UKNL | — | — | — | — | 1 | — | — | — | — | — | 1 | — | | |
| | Burma | — | — | — | — | — | — | — | — | — | 1 | — | 1 | | |
| | Jordan | 3 | — | 1 | — | — | — | — | — | — | — | 4 | — | | |
| | S. Arabia | 7 | — | — | — | — | — | — | — | — | — | 7 | — | | |
| | Ethopia | — | — | — | — | 2 | — | — | — | — | — | 2 | — | | |
| | Malaya | 2 | — | — | — | — | — | — | — | — | — | 2 | — | | |

| YEAR | Country | Ist Year | | IInd Year | | IIIrd Year | | IVth Year | | Vth Year | | Total | | Grand Total | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | M. | F. | M. | F. | M. | F. | M. | F. | M. | F. | M. | F. | M. | F. |
| 63-64 | E. Africa | — | — | 2 | — | 2 | — | 3 | 1 | 1 | 1 | 8 | 2 | | |
| | India | — | — | — | — | 2 | | — | — | 2 | — | 4 | — | | |
| | China | — | — | — | — | — | — | — | — | 1 | — | 1 | — | | |
| | Iran | 1 | — | 2 | — | 1 | — | — | 2 | 1 | — | 4 | 3 | | |
| | S. Africa | 3 | — | — | — | 1 | 1 | 1 | — | — | — | 5 | 1 | 49-7 | |
| | UKBG | — | — | — | — | — | — | 1 | — | — | — | 1 | — | | |
| | UKNL | — | — | — | — | — | — | 1 | — | — | — | 1 | — | | |
| | Jordan | 1 | — | 3 | — | 1 | — | 1 | — | — | — | 6 | — | | |
| | S. Arabia | 7 | 1 | 8 | — | — | — | — | — | — | — | 15 | 1 | | |
| | Ethopia | — | — | — | — | — | — | 2 | — | — | — | 2 | — | | |
| | Malayasia | — | — | 2 | — | — | — | — | — | — | — | 2 | — | | |
| 64-65 | S. Africa | 2 | — | 3 | — | 1 | — | 2 | — | 1 | — | 9 | — | | |
| | Iran | 1 | 1 | 3 | — | — | — | 1 | 1 | — | 1 | 5 | 3 | | |
| | UKNL | 1 | — | — | — | — | — | — | — | 1 | — | 2 | — | | |
| | Jordan | 2 | — | — | — | 3 | — | 1 | — | — | — | 6 | — | | |
| | S. Arabia | 6 | — | 7 | 1 | 2 | — | — | — | — | — | 15 | 1 | | |
| | Aden | 1 | — | — | 1 | — | — | — | — | — | — | 1 | 1 | | |
| | Kenya | 1 | — | — | — | — | — | — | — | — | — | 1 | — | 51-6 | |
| | E. Africa | — | — | — | — | — | — | 4 | — | 1 | 1 | 5 | 1 | | |
| | India | — | — | — | — | — | — | 1 | — | 1 | — | 2 | — | | |
| | Ethopia | — | — | — | — | — | — | — | — | 2 | — | 2 | — | | |
| | Malayasia | — | — | — | — | 2 | — | — | — | — | — | 2 | — | | |
| | UKBG | — | — | — | — | — | — | 1 | — | — | — | 1 | — | | |
| 65-66 | S. Arabia | 1 | — | 9 | — | 3 | 1 | 2 | — | — | — | 15 | 1 | | |
| | Iran | 8 | — | — | 1 | 1 | — | — | — | 1 | 1 | 10 | 2 | | |
| | Jordan | 4 | — | 4 | — | — | — | 3 | — | 1 | — | 12 | — | | |
| | S. Africa | 5 | 1 | 1 | — | 4 | — | 2 | — | 1 | 1 | 13 | 2 | | |
| | E. Africa | 1 | — | 1 | — | — | — | 3 | — | 2 | — | 7 | — | | |
| | Kenya | — | — | 2 | — | — | — | — | — | — | — | 2 | — | | |
| | Uganda | 1 | — | — | — | — | — | — | — | — | — | 1 | — | 69-7 | |
| | UKNL | — | — | 1 | — | — | — | — | — | — | — | 1 | — | | |
| | Aden | — | — | 1 | — | — | 1 | 1 | — | — | — | 1 | 1 | | |
| | Malayasia | — | — | — | — | 1 | — | 2 | — | — | — | 3 | — | | |
| | Tanzania | — | 1 | — | — | — | — | — | — | — | — | — | 1 | | |
| | India | — | — | — | — | — | — | 1 | — | 1 | — | 2 | — | | |
| | Iraq | 2 | — | — | — | — | — | — | — | — | — | 2 | — | | |
| 66-67 | S. Arabia | 3 | — | 2 | — | 8 | — | 2 | 1 | 1 | — | 16 | 1 | | |
| | Iran | 5 | — | 7 | — | 2 | 1 | 1 | — | — | — | 15 | 1 | | |
| | Jordan | 9 | — | 2 | — | 2 | — | — | — | 3 | — | 16 | — | | |
| | S. Africa | 2 | — | 4 | 1 | 3 | — | 6 | — | 2 | — | 17 | 1 | | |
| | E. Africa | — | — | — | — | 1 | — | 1 | — | 1 | 1 | 3 | 1 | | |

| YEAR | COUNTRY | 1st Year | | II Year | | III Year | | IV Year | | Vth Year | | Total | | Grand Total | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | M. | F. | M. | F. | M. | F. | M. | F. | M. | F. | M. | F. | M. | F. |
| 66-67 (contd.) | Kenya | — | 1 | — | — | 2 | — | — | — | — | — | 2 | 1 | | |
| | Uganda | 1 | — | — | — | — | — | — | — | — | — | 1 | — | | |
| | Nayasaland; | — | — | — | — | 1 | — | — | — | — | — | 1 | — | 83 | 8 |
| | Aden | — | — | 1 | — | — | — | — | 1 | — | — | 1 | 1 | | |
| | Malaysia | — | — | — | — | — | — | 1 | — | 2 | — | 3 | — | | |
| | Tanzania | — | 1 | — | 1 | — | — | — | — | — | — | — | 2 | | |
| | Iraq | 2 | — | 1 | — | — | — | — | — | — | — | 3 | — | | |
| | Sudan | 1 | — | — | — | 1 | — | — | — | — | — | 2 | — | | |
| | Syria | 1 | — | | — | — | — | — | — | — | — | 1 | — | | |
| | Nigeria | — | — | 1 | — | — | — | — | — | — | — | 1 | — | | |
| | Ceylon | 1 | — | — | — | — | — | — | — | — | — | 1 | — | | |
| 67-68 | S. Arabia | 14 | — | 1 | — | 3 | — | 5 | — | 2 | 1 | 25 | 1 | | |
| | Iran | 2 | — | 9 | — | 2 | — | 2 | 1 | 1 | — | 16 | 1 | | |
| | Jordan | 7 | — | 8 | — | 3 | — | 2 | — | — | — | 20 | — | | |
| | S. Africa | 1 | — | 3 | — | 3 | 1 | 3 | — | 6 | — | 16 | 1 | | |
| | E. Africa | — | — | — | — | — | — | 1 | — | 2 | — | 3 | — | | |
| | Kenya | — | — | | 1 | — | — | 2 | — | — | — | 2 | 1 | | |
| | Uganda | — | — | 1 | — | — | — | — | — | — | — | 1 | — | | |
| | Nayasal'd | — | — | — | — | — | — | 1 | — | — | — | 1 | — | | |
| | Aden | — | — | — | — | 1 | — | — | — | — | — | 1 | — | 98 | 7 |
| | Malayasia | — | — | — | — | — | — | — | — | 1 | — | 1 | — | | |
| | Tanzania | — | — | — | 1 | — | 1 | — | — | — | — | — | 2 | | |
| | Iraq | 2 | — | 3 | — | — | — | | — | — | — | 5 | — | | |
| | Suddan | — | — | 1 | — | — | — | 1 | — | — | — | 2 | — | | |
| | Syria | 2 | — | — | — | — | — | — | — | — | — | 2 | — | | |
| | Nigeria | — | — | | — | 1 | — | | — | — | — | 1 | — | | |
| | Lebonan | 1 | — | — | — | — | — | — | — | — | — | 1 | — | | |
| | Ceylon | 1 | — | — | — | — | — | — | — | — | — | 1 | — | | |
| 68-69 | Guyana | — | 1 | — | — | — | — | — | — | — | — | — | 1 | | |
| | S. Yamen | — | 1 | — | — | — | — | — | — | — | — | — | 1 | | |
| | S. Arabia | 9 | 2 | 13 | — | 1 | — | 3 | — | 6 | — | 30 | 2 | | |
| | Iran | 5 | 1 | 3 | — | 8 | — | 2 | — | 2 | 1 | 20 | 2 | | |
| | Jordan | — | — | 7 | — | 7 | — | 3 | — | 2 | — | 19 | — | | |
| | S. Africa | 2 | — | 1 | — | 3 | — | 3 | 1 | 4 | — | 13 | 1 | | |
| | E. Africa | — | — | — | — | — | — | — | — | 1 | — | 1 | — | | |
| | Kenya | — | 1 | — | — | — | 1 | — | — | 2 | — | 2 | 2 | | |
| | Uganda | — | — | — | — | 1 | — | — | — | — | — | 1 | — | | |
| | Nayasaland (Malavi) | — | — | — | — | — | — | — | — | 1 | — | 1 | — | | |
| | Aden | — | — | — | — | — | — | 1 | — | — | — | 1 | — | 105 | 12 |
| | Malaysia | — | — | — | — | — | — | — | — | 1 | — | 1 | — | | |
| | Tanzania | — | 1 | — | — | — | 1 | — | 1 | — | — | — | 3 | | |
| | Iraq | 3 | — | 2 | — | 1 | — | — | — | — | — | 6 | — | | |
| | Sudan | 1 | — | — | — | 1 | — | — | — | 1 | — | 3 | — | | |
| | Syria | — | — | 2 | — | — | — | — | — | — | — | 2 | — | | |
| | Nigeria | — | — | — | — | — | — | 1 | — | — | — | 1 | — | | |
| | Lebonan | 1 | — | 1 | — | — | — | — | — | — | — | 2 | — | | |
| | Ceylon | — | — | 1 | — | — | — | — | — | — | — | 1 | — | | |

| Year | Name of the Country | I Year | | II Year | | III Year | | IV Year | | V Year | | Total. | | Grand Total | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | M. | F. | M. | F. | M. | F. | M. | F. | M. | F. | M. | F. | M. | F. |
| | Saudi Arabia .. | 14 | 1 | 10 | 2 | 11 | — | — | — | 4 | 1 | 39 | 3 | | |
| | Iran .. .. | 5 | 2 | 4 | — | 5 | — | 6 | — | 2 | — | 22 | 2 | | |
| | Jordan (including Kuwait) | 3 | — | 2 | — | 8 | — | 4 | — | 3 | — | 21 | — | | |
| | South Africa .. | — | — | 4 | — | 2 | — | 1 | — | 3 | 1 | 10 | 1 | | |
| | East Africa .. .. | — | 1 | 1 | — | — | — | — | — | 1 | — | 2 | 1 | | |
| | Kenya .. .. | — | — | — | — | — | — | — | 1 | — | — | — | 1 | | |
| | Uganda .. .. | — | 1 | — | — | — | — | 1 | — | — | — | 1 | 1 | | |
| 69-70 | Aden .. .. | — | — | — | — | — | — | — | — | 1 | — | 1 | — | 119-14 | |
| | Malayasia .. .. | — | — | — | — | — | — | — | — | 1 | — | 1 | — | | |
| | Tanzania .. .. | — | — | — | 1 | — | — | 1 | 1 | — | 1 | 1 | 3 | | |
| | Iraq .. .. | 2 | — | 5 | — | — | — | 1 | — | — | — | 8 | 1 | | |
| | Sudan .. .. | — | — | 1 | — | — | — | 1 | — | — | — | 2 | — | | |
| | Syria .. .. | 2 | — | 1 | — | 1 | — | — | — | — | — | 4 | — | | |
| | Nigria .. .. | — | — | — | — | — | — | — | — | 1 | — | 1 | — | | |
| | Lebanon .. .. | 1 | — | 1 | — | 1 | — | — | — | — | — | 3 | — | | |
| | Ceylon .. .. | — | — | — | — | 1 | — | — | — | — | — | 1 | — | | |
| | U. A. R. .. .. | 1 | — | 1 | — | — | — | — | — | — | — | 2 | — | | |
| | Guyana .. .. | — | — | — | 1 | — | — | — | — | — | — | — | 1 | | |
| | South Yamen .. | — | — | — | 1 | — | — | — | — | — | — | — | 1 | | |

Scanned by Office of
Amin H. Karim MD

| Year | Name of the Country | I Year | | II Year | | III Year | | IV Year | | V Year. | | Total | | Grand Total | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | M. | F. | M. | F. | M. | F. | M. | F. | M. | F. | M. | F. | M. | F. |
| | Saudi Arabia .. | 17 | 2 | 22 | 2 | 8 | 1 | 5 | — | 4 | — | 56 | 5 | | |
| | Iran .. .. | 4 | — | 8 | 2 | 5 | — | 1 | — | 8 | — | 26 | 2 | | |
| | Jordan (including Kuwait) | 3 | — | 5 | 1 | 6 | — | 4 | — | 9 | — | 27 | 1 | | |
| | South Africa .. | — | — | 1 | — | 2 | — | 2 | — | 4 | 1 | 9 | 1 | | |
| | E. Africa .. .. | — | — | 1 | 1 | — | — | — | — | 1 | — | 2 | 1 | | |
| | Central Africa .. | — | — | — | — | — | — | — | — | 1 | — | 1 | — | | |
| | Kenya .. .. | — | — | — | — | — | — | — | — | — | 1 | — | 1 | | |
| | Uganda .. .. | — | — | — | 1 | — | — | — | — | 1 | — | 1 | 1 | | |
| 70-71 | Aden .. .. | — | — | — | — | — | — | — | — | 1 | — | 1 | — | | |
| | Malayasia .. .. | — | — | — | — | — | — | — | — | 1 | — | 1 | — | 155-18 | |
| | Tanzania .. .. | — | — | — | — | — | 1 | — | — | 1 | 2 | 1 | 3 | | |
| | Iraq .. .. | — | — | 7 | — | — | — | — | — | 1 | — | 8 | — | | |
| | Sudan .. .. | 1 | — | 1 | — | — | — | — | — | 1 | — | 3 | — | | |
| | Syria .. .. | — | — | 3 | — | 1 | — | — | — | — | — | 4 | — | | |
| | Nigeria .. .. | — | — | — | — | — | — | — | — | 1 | — | 1 | — | | |
| | *Lebanon* .. .. | — | — | 2 | — | 1 | — | — | — | — | — | 3 | — | | |
| | Ceylon .. .. | — | — | — | — | — | — | 1 | — | — | — | 1 | — | | |
| | U. A. R. .. .. | — | — | 2 | — | — | — | — | — | — | — | 2 | — | | |
| | Guyana .. | — | — | — | 1 | — | — | — | — | — | — | — | 1 | | |
| | South Yamen .. | — | — | — | — | — | — | — | 1 | — | — | — | 1 | | |
| | Mauritious .. | 5 | — | — | — | — | — | — | — | — | — | 5 | — | | |
| | Abu Dhabi .. .. | 1 | — | — | — | — | — | — | — | — | — | 1 | — | | |
| | *Bahrain* .. .. | 1 | 1 | — | — | — | — | — | — | — | — | 1 | 1 | | |
| | Nepal .. .. | 1 | — | — | — | — | — | — | — | — | — | 1 | — | | |

# Number of Annual College Graduates

| YEAR | Male | Faemale | Total |
|---|---|---|---|
| 1950 .. .. .. | 9 | 3 | 12 (Ist Batch of Graduates) |
| 1951 .. .. .. | 8 | 3 | 11 |
| 1952 .. .. .. | 30 | 5 | 35 |
| 1953 .. .. | 59 | 14 | 73 |
| 1954 .. .. .. | 27 | 7 | 34 |
| 1955 .. .. .. | 51 | 22 | 73 |
| 1956 .. .. .. | 90 | 18 | 108 |
| 1957 .. .. .. | 85 | 25 | 110 |
| 1958 .. .. .. | 101 | 35 | 136 |
| 1959 .. .. .. | 98 | 28 | 126 |
| 1960 .. .. .. | 120 | 34 | 154 |
| 1961 .. .. .. | 118 | 40 | 158 |
| 1962 .. .. .. | 125 | 21 | 146 |
| 1963 .. .. .. | 118 | 37 | 155 |
| 1964 .. .. .. | 107 | 33 | 140 |
| 1965 .. .. .. | 124 | 40 | 164 |
| 1966 .. .. .. | 111 | 37 | 148 |
| 1967 .. .. | 92 | 32 | 124 |
| 1968 .. .. .. | 132 | 48 | 180 |
| 1969 .. .. .. | 157 | 45 | 202 |
| 1970 .. .. ... | 64 | 32 | 96 |
| **Total :** | 1826 | 559 | 2385 |

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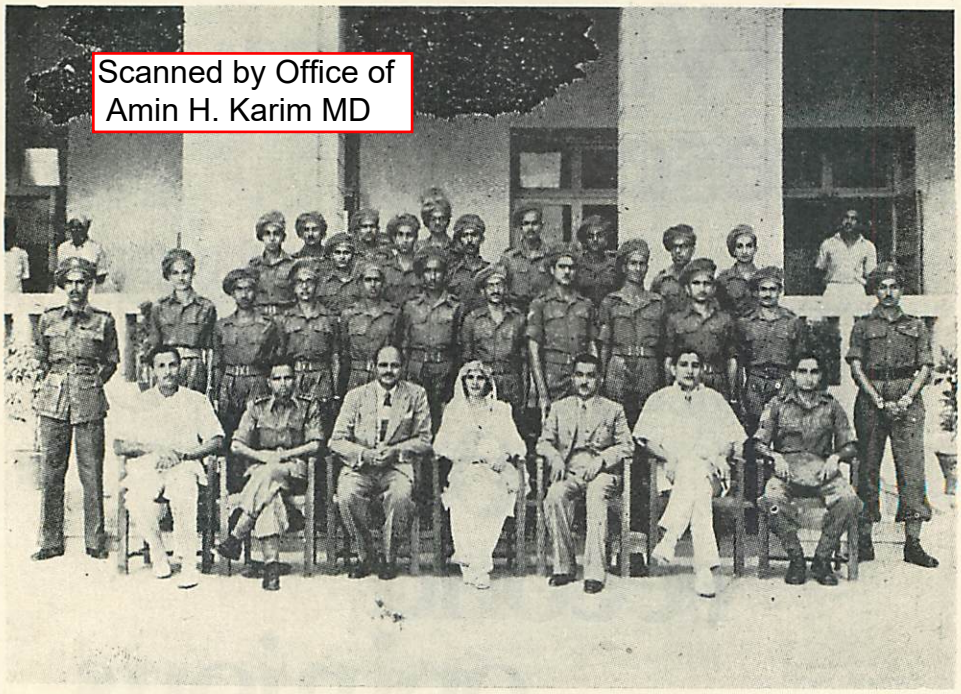
*regd.

P/PAK/P/3/70

ASIATIC

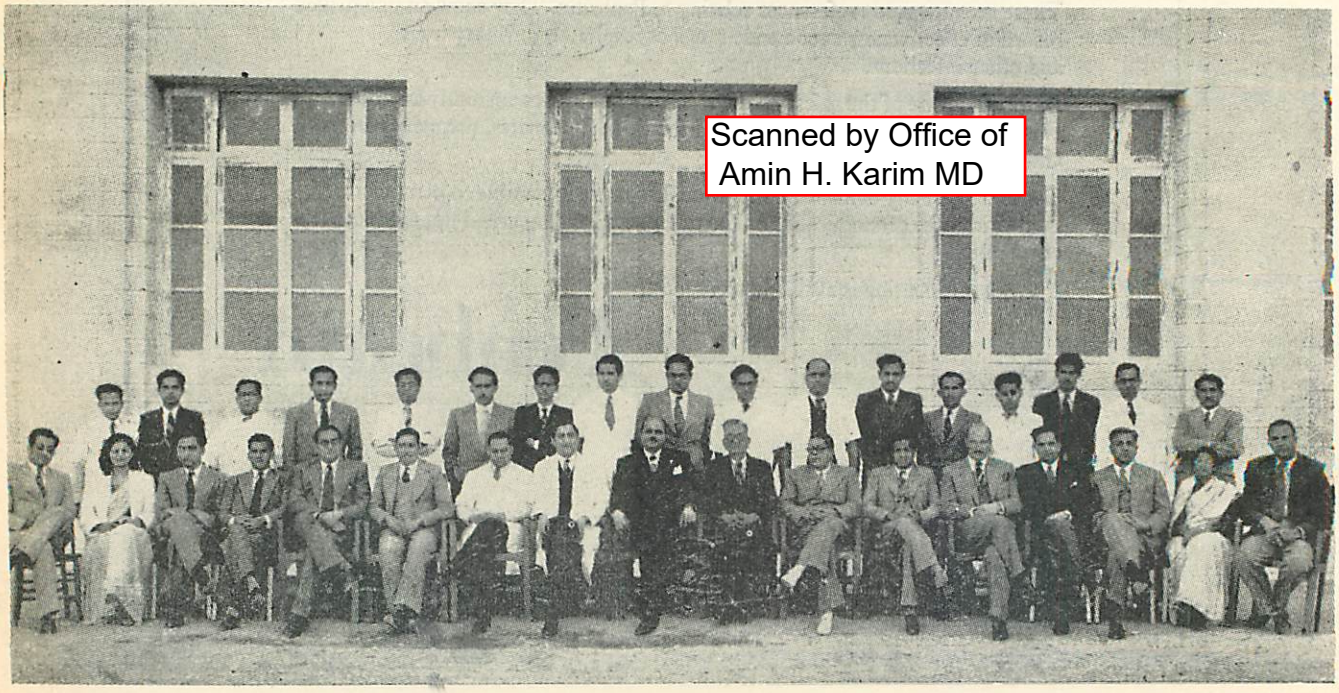
# The Dow Medical College Detachment of U.O.T.C.—1948-49

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*Photographed with Late Miss Fatima Jinnah.*

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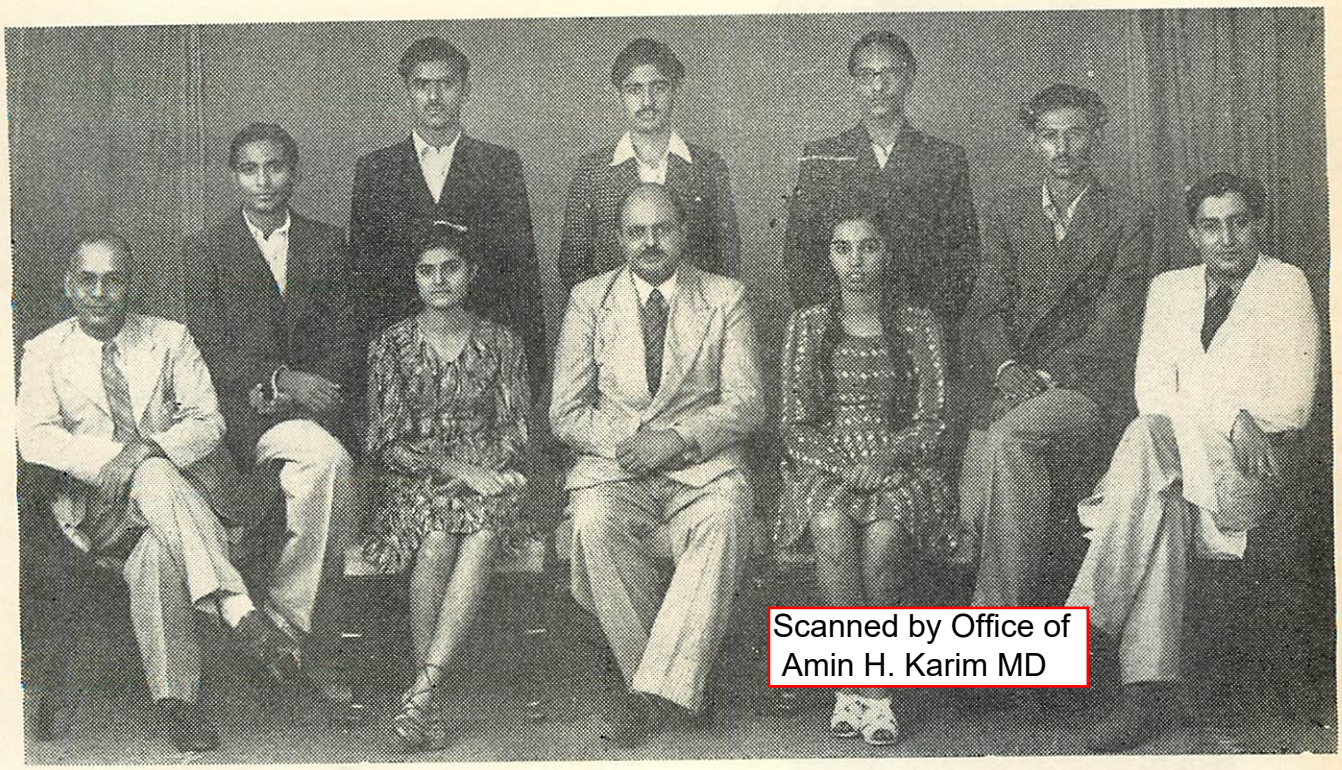


*First Batch of Teaching Staff after Partition.*

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# PIONEER

## Dow Medical College Students' Union 1945




**(Sitting L to R:]** *Dr. B.C. Bose,* (*V. President*) *Mr. G.J. Thekur,* (*Gen. Secretary*) *Miss. S.H. Shahani,* (*Secy. Badminton*) *Maj. A.K.M. Khan* (*President*)
*Miss S.W. Alimchaudani.* (*Secy. Indoor*). *Mr. R.D. Kewalramani,* (*Secy Hockey*) *Dr. M.A. Shah* (*Treasurer*)

**(Standing L to R]** *Mr. J.C. Tethami,* (*Secy. Tennis*) *Mr. D.L. Keswani,* (*Secy. Cricket*) *Mr. N.D. Murzein* (*Secy. Football*).

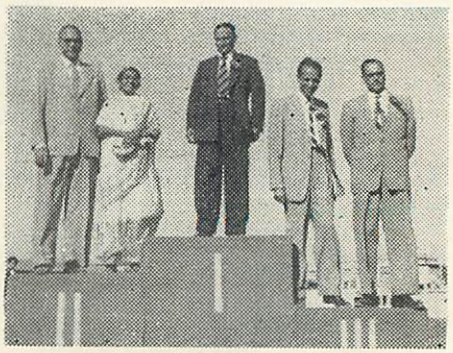
INAUGURATION



*Col. Jalal M. Shah Inspector General of Medical College.*

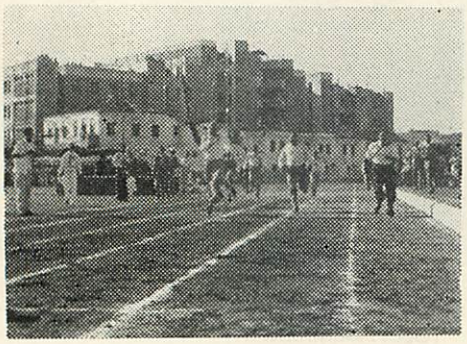
# STAFF SPORT

VICTORY



*Administrator, Prof. A. Waheed on Top followed by Prof. Miss Siddiqui, and Surgeon Amanullah Khan.*

TRACK:



*Prof. Wahid on lead!*

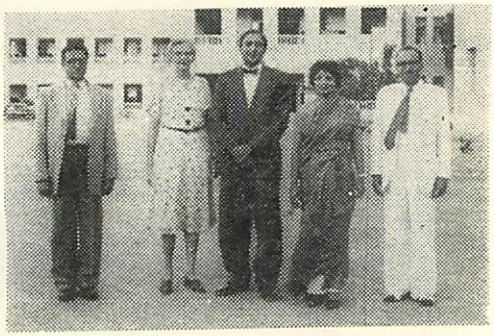
TUG OF WAR



*Every action, has an equal and opposit reaction.*

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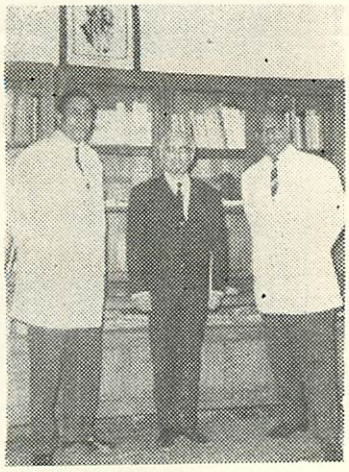
# PANORAMIC VISITOR'S BOOK



*Dr. Helen Taussing, Cardiologist U.S.A.* (1956)



*Madam Li. Teh Chuan, Minister of health V. President All China Democratic Woman's Federation* (1955)



*Prof. K. Dana Haeri, Dean of Faculty of Medicine, IRAN (1966)*



*Dr. Kao Shu Yi, Minister of Health China* (1964

**(L to R.)** *Prof. Jones Sir, T.E. For, Editor Lancet Prof. MaCgraith, Dean of School of Tropical Medicine Liverpool.*



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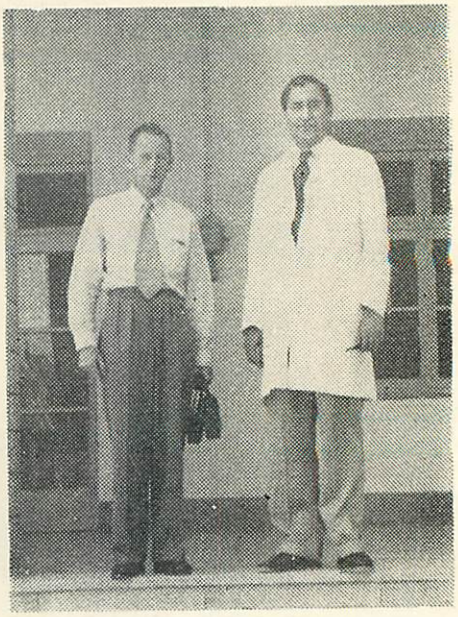


Prof. Shah with H. R. H. Shahanshah of Iran, at Tehran W. H. O. Conference

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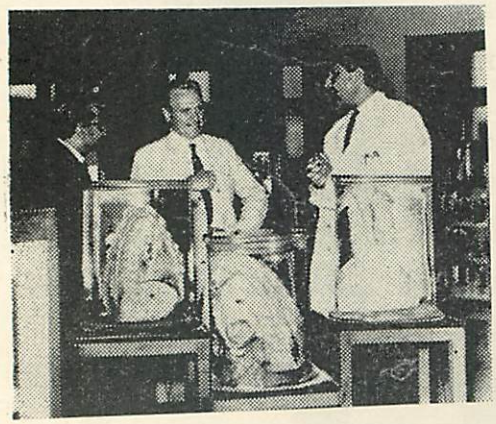
Prof. Beris Dumbeids of Hungary., —



Mr. Freci, member of Parliamentary Health Committee New Zealand (1955)—



Prof. Wilder Panfield, Canada's famous Neuro Surgeon.



Prof. Edward Grzegorzewski, Head of the Medical Education Div. W.H.O. of Geneva.

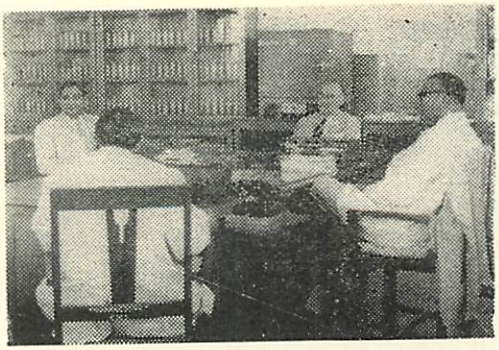


Prof. Jaffcoate, Sir Rowan Boland, Prof. Lawdon, visited the college to get it recognised by Gen. Medical Council, Great Britain 1965.

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*Dr. J. Weatherall, W.H.O. consultant University of Liverpool* (1967)

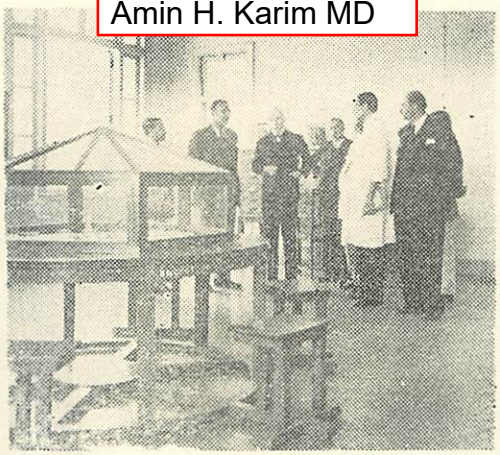


*Prof. Charles Wells of Surgery* (1957)

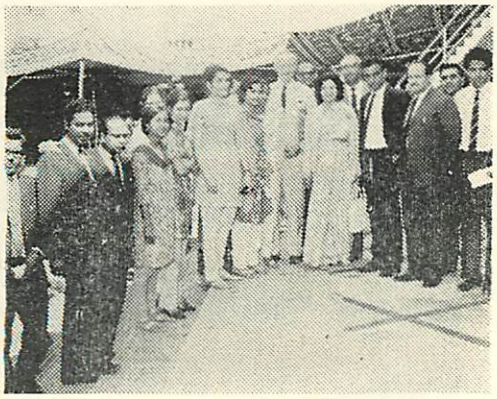
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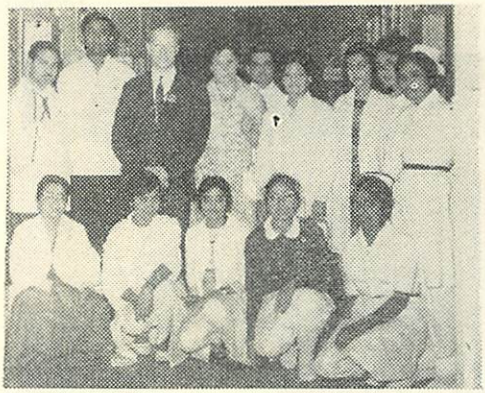
*Prof. Souidan and Prof. Haseeb of Sudan* (1966)



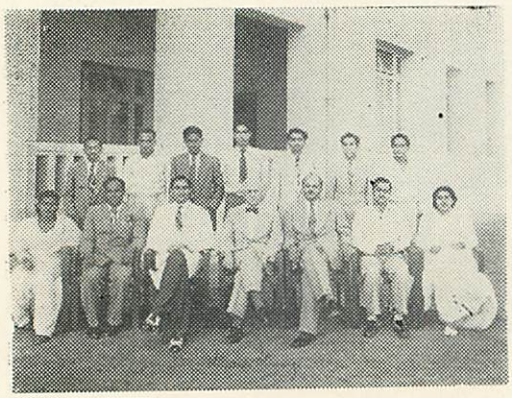
*Sir Gerdon Taylor, British famous Surgeon* (1951)



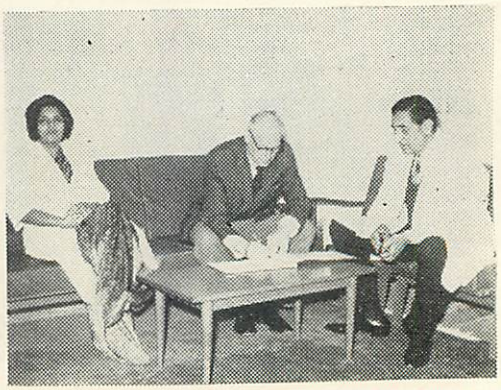
*Sir Wilfid Sheldon. Author of Book on paediatric.*



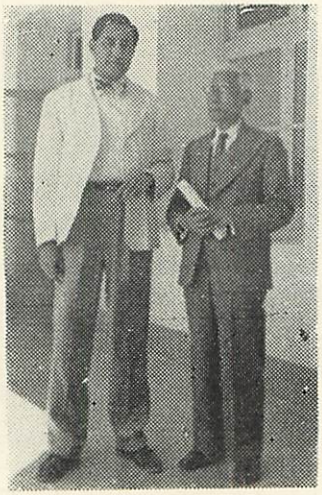
*Minister of health U.S.S.R. 4th from left* 1968.



*Sir Alexander Flaming Discover of Pencillin* (1951)



*Prof. Wilfrid Gaisford-University of Glassgow.*



*Prof. Sardjito, Dean of Medical Faculties Indonesia* (1955)

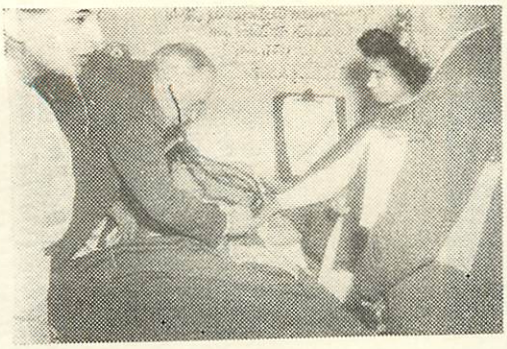
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*Dr. D. Hunter Author of "Hutechison s Clinical Method."*



*Mrs. Johnson in Paediatic ward* (1961)



*Prof. Paul White, World famous cardiologist of Bostan U.S.A.* (1952)



*Lord Rosenhien. President of the Royal College of Physicians* (1960)

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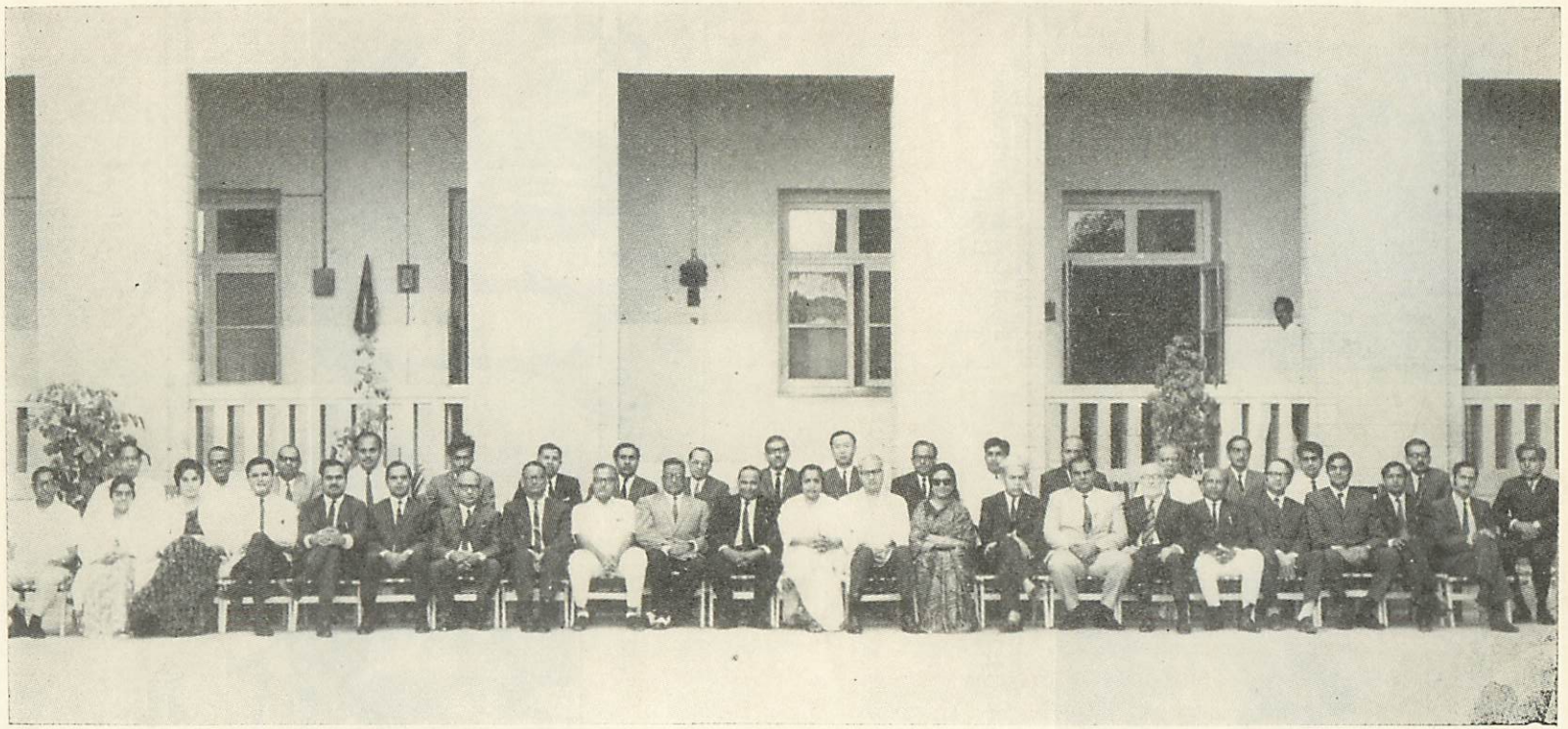


*Dr. Douesh Ananda Vabia, Director of Health Services Nepal* (1965)



*Dinner by Staff to W.H.O. Chief Dr. Canadian and Regional Director Dr. Taba of Iran* (1960)

# Respected Staff – Silver Jubilee Batch



**Front Row (L to R]**

(1) *Dr. Izhar ul Hasan Bhutta* (2) *Dr. Mrs. Bilqees* (3) *Dr. Mrs. K.M. Mahmood* (4) *Prof: Kh. Moin Ahmad* (5) *Prof: Nasir Shaikh* (6) *Prof: Fazal Elahi* (7) *Prof: I.H. Jaffery* (8) *Prof: S.M. Yousuf* (9) *Prof: Lt. Col. Najib Khan*, (10) *Prof: S.H. Zaidi* (11) *Prof: A. Wahid, Administrator* (12) *Prof. Mrs. Zubaida Aziz* (13) *Prof: Mushtaq Hasan* (14) *Dr. Mrs. Parvin Zafar* (15) *Prof: S.A.H. Razvi* ((16) *Prof: Salar A. Aziz* (17) *Surg: M.R. Shirazi* (18) *Dr. Omar Khan* (19) *Dr. Ahmed Hassan* (20) *Dr. Irshad Wahid* (21) *Dr. Abdur Rahim* (22) *Dr. Aziz Shoukat Hassan* (23) *Dr. Adeebul Hasan Rizvi.*

**Back Row [L to R]**

(1) *Dr. Moazam Ali Khan* (2) *Dr. Kashfudooja.* (3) *Dr. Afaq Ahmed* (4) *Dr. Muneer Siddiqui* (5) *Dr. I.H. Bhatti* (6) *Dr. M. Sharif* (7) *Dr. Abdul Khaliq* (8) *Dr. K.M. Durani* (9) *Dr. S. Akmal Farooqui* (10) *Dr. Mohd. Ali Wang* (11) *Dr. Hashm Ali Kazmi* (12) *Dr. Hasnain* (13) *Dr. Zafar Ahmad* (14) *Dr. M.A. Ansari* (15) *Dr. Syed Akhtar* (16) *Dr. A. Hamid* (17) *Dr. S. Rahimtoola.*

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# Dow Medical College Karachi

## Staff of Silver Jubilee

*Administrator and Chairman, College Academic Council,*

*Professor A. Wahid, M. S. (Surg.), M.S. (Anat), F.I.C.S.*

TEACHING STAFF

### ANATOMY

| | | |
|---|---|---|
| Prof. and Head of the Department | .. | Prof. A. Wahid, MBBS (Luck), M.S. (*Surg*) (Luck.) M.S. (*Anat*) (Luck), F.I.C.S. |
| Assistant Professors | .. | 1. Dr. Kashfuddoja, MBBS (Kar), M. Phil. (Anat). |
| | | 2. Dr. Moazzam Ali Khan MBBS. (Kar) M. Phil. (Anat). |
| | | 3. Dr..... |
| Assistant Prof. of Histsology : | | Dr. Mrs. Bilquess Afazal, M.B.B.S., (Kar), M. Phil. (Anat). |
| Asstt. Prof. of Applied Surgical Anat. (Part-time) | | Dr.———————————— |
| Demonstrators). | .. | 1. Dr. Mehdi Bux Juma, MBBS (Kar) M. Phil (Anat) (Kar), )(on higher training in Canada). |
| | | 2. Dr. Muhammad Rafiq Khan, MBBS. (Pb), (on training in U.K.) |
| | | 3. Dr. Miss Rashida Aryne, MBBS (Kar). |
| | | 4. Dr. Nasim Ahmed, MBBS. (Kar.) |
| | | 5. Dr. Saleem Haque, MBBS (Kar) (under training at J.P.M.C.) |
| | | 6. Dr. Samad Ali, MBBS. (Kar.) |

### PHYSIOLOGY

| | | |
|---|---|---|
| Professor. | .. | Professor S. H. Zaidi, MBBS., M.D. |
| Assistant Professor | .. | Dr. S. Afaq Ahmed, M.B.B.S., (Agra), B.Sc. Med. (Toronto) |
| Asstt. Prof. of Biochemistry. | | Dr. Shakir Ali Jaffery, M.B.B.S., M. Phil, (Biochemistry). |
| Demonstrators: | .. | 1. Dr. S. Ghazanfer Ali, MBBS. (Kar.) |
| | | 2. Dr. Noor Muhammad Rabbani, MBBS. (Kar.) |
| | | 3. Dr. Syed Akhtar, MBBS. (Kar.) |

4. Dr. Mrs. Kausar Bano Rasul, MBBS (Kar)
5. Dr. Mrs. Nazra Shakir, MBBS.,
6. Dr. Miss Fakhar Jehan Farooqi, MBBS.
7. Dr. Mrs. Salim Masud Zaidi, MBBS.
8. Dr. Mrs. Shamim Mahmood, MBBS.

### OBSTETRICS AND GYNAECOLOGY

Professors .. 1. Prof. Zubaida Aziz, MBBS (Pb) FRCS. (Edin), FREPS. Glasgow), MRCOG, FRCOG.
2. Prof. Salar Akhtar Aziz, MBBS., DGO (Sublin), MRCOG (Lond), FRCOG.

Assistant Professors .. 1. Dr. A. Majid Memon, MRCOG, FRCS.,
2. Dr. Mrs. Nasim Bano Haque, MBBS, FRCS

### OPHTHALMOLOGY

Professor .. Prof. M.M. Hassan, DOMS, FRCS, FCPS.,

Assistant Professor .. Dr. Taj Muhammad Soomro, D.O.,

### MEDICINE

Professors .. 1. Professor Mushtaq Hasan, MBBS, (Pb), M.D. (Pb), F.R.C.P. (Edin).
2. Professor Lt. Col. Najib Khan, T. Pk., MBBS (Durham), M.D. (Durham).
3. Prof. Kh: Moin Ahmed, DTM & H., MRCP.

Assistant Professors .. 1. Dr. Shamsuddin Rahimtoola, MRCP,
2. Dr. Abdul Khaliq Khan, MRCP (Glasgow) M.R.C.P. (Lond.)
3. Dr. Malik Ali Shaikh M.R.B.S., M.R.C.P. (G) M.R.C.P. (E) Ph. D.

### SURGERY

Professors .. 1. Professor S.A. H. Razvi, MBBS. (Osman). Ch. M. (Liv), FRCS, (Eng), F.C.P.S.,
2. Prof. Fazal Elahi, MBBS (Luck), DTM & H. (Eng.) FRCS (Edin) FICS., FACS.,
3. Prof. Nasir B. Shaikh (FRCS)

Assistant Professors. .. 1. Dr. Mrs. Kishwar Nazli Mahmood, F.R.C.S. (Eng.), F.R.C.S. (Edin.)
2. Dr. Aziz Shoukat Hasan, F.R.C.S.,
3. Dr. Irshad Wahid, M.B.B.S., F.R.C.S., (Edin).

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## OTO-RHINOLARYNGOLOGY

| | | |
|---|---|---|
| Professors | .. | 1. Prof. I.H. Jaffri, DLO (Lond.) FRCS (Eng.) |
| | | 2. Prof. M.A. Qayyum, MBBS. (Pb), FRCS, (Edin. DO DIO (Eng.), FICS, FACS., |
| Asstt. Prof. | .. | Dr. Ahmad Hassan M.B.B.S., FRCS. (Eng.) D.L.O. |

## ORTHOPADIC SURGERY

| | | |
|---|---|---|
| Professor | .. | Prof. A. Rahim T.Q.A. M. Ch. (Orth), (Liv). F.R.C.S. (Lond.) F.C.P.S., |

## PHARMACOLOGY AND THERAPEUTICS

| | | |
|---|---|---|
| Professor. | .. | Professor Sh. Muhammad Yousuf, MBBS., M. Phil., (Kar.) Ph. D. (U.S.A.). |
| Assistant Professors : | | 1. Dr. A. S. Chohan, M.B.B.S., (Pb)., M. Phil., Pharm., (Kar.) |
| | | 2. Dr. Abdul Hameed, MBBS., Ph. D., |
| Demonstrators : | .. | 1. Dr. Muhammad Ahmed Khan, MBBS., |
| | | 2. Dr. Mrs. Quresha Moin, MBBS., |
| | | 3. Dr. Mrs. Shahnaz Hamid, MBBS., |
| | | 4. Dr. Sirajul Haque, MBBS., |
| | | 5. Dr. M.A. Majid, MBBS., |

## PATHOLOGY

| | | |
|---|---|---|
| Assistant Prof. of Chemical Path | | Dr. Izharul Hasan Bhutta, MBBS, (Kar) M. Phil (Biochemistry) try) (Karachi). |
| Asstt. Prof. of Haemotology | .. | Dr. Mrs. Perveen Zafar, M.B.B.S., (Pb.) |
| Asstt. Prof. of Pathology. Pathology. | | Dr. Azamatullah Khan, M.B.B.S. (Kar.) M. Phil (Path.) (Kar.) |
| Asstt. Prof. of Microbiology | .. .. | Dr. Hashim Ali Kazmi, M. Phil. |
| Curator of Museum | | |
| Demonstrators. | .. | 1. Dr. Mrs. Ijaz Habib Ahmed, MBBS (Kar.) |
| | | 2. Dr. Muhammad Mustafa, MBBS, (Kar.) D. Bact., (on deputation to Libya). |
| | | 3. Dr. Syed Shahid Ali, B. Sc., MBBS., M. Phil. Micro (Kar.) M.S. (Path) (USA). |
| | | 4. Dr. Badar Jehan Farooqui, MBBS (Sind) |
| | | 5. Dr. Mrs. Salma Akram, MBBS., (Kar). |
| | | 6. Dr. Anwar Ali Lanewala, MBBS., |
| | | 7. Dr. S. Zakir Husain Zaidi, M.B.B.S., |
| | | 8. Dr. Miss. Nusrat Banhir, M.B.B.S., |
| | | 9. Dr. Mrs. Zakia Zia, M.B.B.S., |
| | | 10. Dr. Miss Hasina N. Thawerani M.B.B.S.) |

## HONORARY PROFESSORS:

### CARDIOLOGY

Asstt. Prof. .. Dr. M. Sharif Choudhry, MBBS., (Pb) MRCP., (Glasgow), MRCP., (Edin).

### SURGERY

Honorary Professor .. Lt. Col Said Ahmed, F.R.C.S. F.C.P.S., F.I.C.S., F.A.C.S.,

## SPECIALISTS:

### THORACIC SURGERY

Assistant Professor: .. Dr. M.R. Shirazi, M.B. M.B. (Lond), MRCS (Eng.) L.R.C.P. F.R.C.S., (London).

### DERMATOLOGY

Asstt. Prof. .. Dr. Syed Zafar Ahmed, M.B.B.S., (Kar.) M.R.C.P. (Edin. D.T.M. & H, (Eng.)

### PLASTIC SURGERY

Asstt. Professor .. Dr. Khalid Mahmood Durrani, FRCS.,

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### UROLOGY

Asstt. Professor .. Dr. Fateh Khan Akhtar, MBBS., FRCS.

### NEURO-SURGERY

Asstt. Prof. .. Dr. Iqtidar Hamid Bhatti, MBBS., FRCS.,

### PAEDIATRICS

Asstt. Prof. .. Dr. A. Ghaffar Billoo, MBBS., DTM&H., DCH., MRCP. (E) MRCP.. (G.)

Asstt. Prof. .. Dr. Akhtar Ahma, MBBS., MRCP.,

## PART TIME PROFESSORS

### PREVENTI4E MEDICINE, HYGIENE AND SOCIAL MEDICINE:

Part-Time Professor .. Professor.

Asst. Prof. of Preventive Med. Dr. M.A. Ansari, M.B.B.S., (Pb)., D.P.H. (London).

Demonstrators: .. 1. Dr. Rafi Muhammad Khan, MBBS., DPPH.,
2. Dr. Khalid Habib Khan, MBBS.,

Health Educator

Med. Social Worker .. Mrs. Rifat Siddiqui

### FORENSIC MED: AND TOXICOLOGY

Police Surgeon Dr. Muhammad Umer Khan, MBBS, DTM & H.

Demonstrators: .. 1. Dr. M. Saeed Akmal Farooqui, MBBS., (Kar).
2. Dr. Muhammad Ali Wang, MBBS., (Kar.)

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| Thiamine HCI .. | 100 mg. | 100 mg. | 100 mg. |
| Riboflavin .. | 1 mg. | 1 mg. | 1 mg. |
| Nicotinamide .. | 100 mg. | 100 mg. | 100 mg. |
| Vitamin B-6 .. | 1 mg. | 1 mg. | 1 mg. |
| Rice Bran Concentrate .. | 10 mg. | 10 mg. | 10 mg. |
| Benzyl Alcohol .. | 2 % | 2 % | 2 % |
| Phenol .. | 0.5 % | 0.5 % | 0.5 % |
| Procaine HCI .. | 1 % | 1 % | 1 % |
| Sodium Chloride .. | 0.9 % | 0.9 % | 0.9 % |
| Vitamin B-12 .. | ——— | 250 mcg. | 1000 mcg. |



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INDICATION : Relieves hot flashes and associated symptoms, such as; cramps. pain, backache and similar distress, when not due to organic disease,

DOSE : one or two teaspoonfuls three times a day or as advised by Physician.

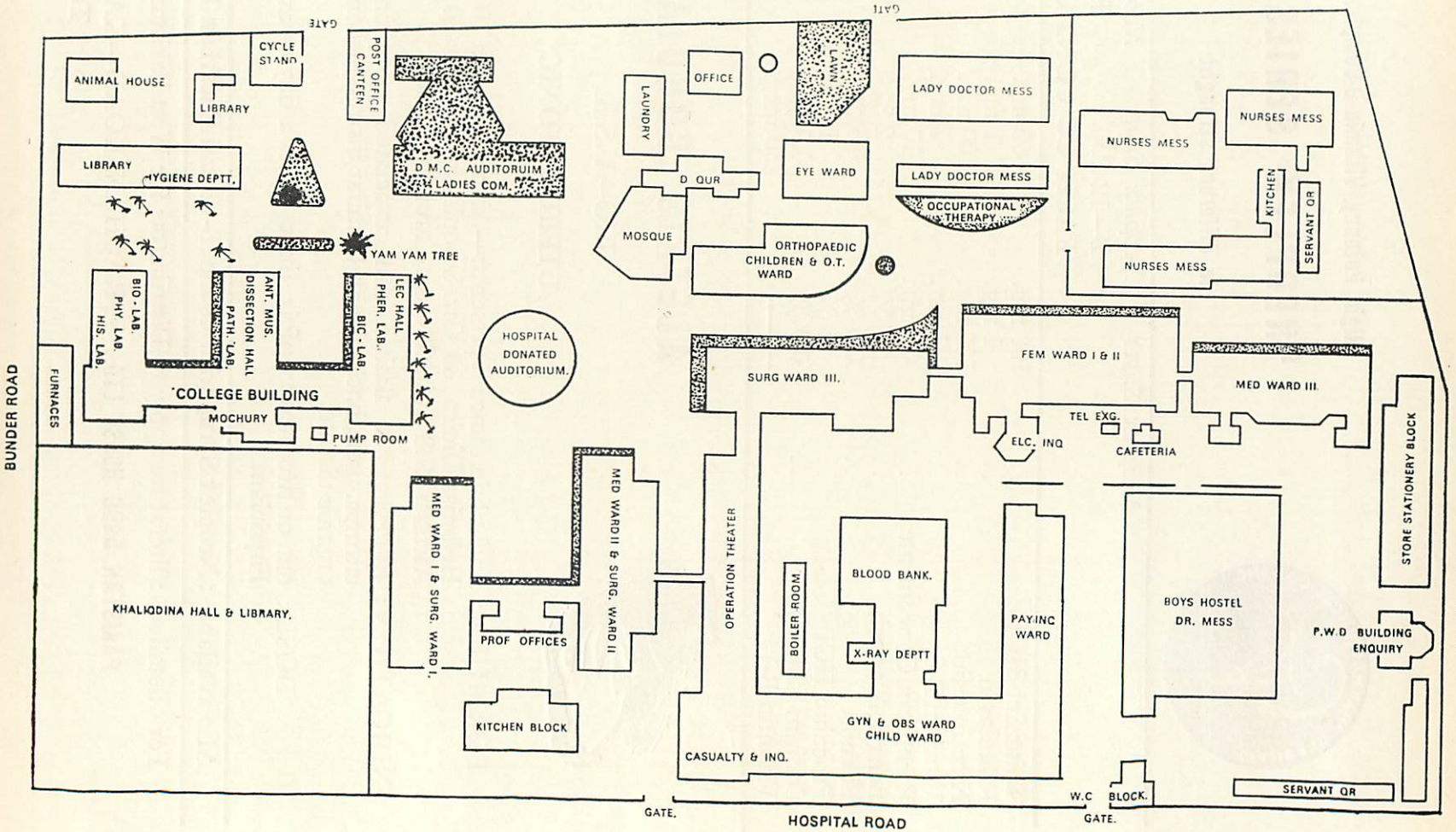
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# KEY PLAN OF
# CIVIL HOSPITAL & DOW MEDICAL COLLEGE

**AT KARACHI** **SCALE 20 FT. = 1 IN.**



# ORGANISATION CHART

## DOW MEDICAL COLLEGE KARACHI

ADMINISTRATOR
DOW MEDICAL COLLEGE
CHAIRMAN ACADEMIC CONCIL

ASSTT. ACCOUNTS OFFICER

ADMINISTRATIVE OFFICER

COLLEGE OFFICE

| ACCOUNT BRANCH | GENERAL BRANCH | ESTABLISHMENT BR. | STENOGRAPHER | STUDENTS BRANCH | STORES PURCHASE BR. |
|---|---|---|---|---|---|
| ACCOUNTANT ... 1 | U.D.C. ... 1 | U.D.C. ... 1 | | U.D.C. ... 2 | STORE KEEPER ... 1 |
| U.D.C. CUM-CASHIER 1 | L.D.C. ... 3 | L.D.C. ... 3 | | L.D.C. ... 2 | ASSTT. STORE KEEPER ... 1 |
| L.D.C. ... 2 | | | | | L.D.C. ... 2 |

DEPARTMENTS ETC.

### CLINICAL DEPARTMENTS

OTHER SPECIALITIES ETC

PROFESSORIAL UNITS

| OPHTALMOLOGY | EAR NOSE & THROAT | OBSTETRICS & GYNAECOLOGY | SURGERY |
|---|---|---|---|
| PROFESSOR ... 1 | PROFESSORS ... 2 | PROFESSORS ... 3 | PROFESSORS ... 3 |
| ASSTT. PROFESSOR ... 1 | ASSTT. PROFESSOR ... 1 | ASSTT. PROFESSOR ... 1 | HONY. PROFESSOR 1 |
| | | | ASSTT. PROFESSORS ... 3 |

| ORTHOPAEDIC | CARDIOLOGY | MEDICINE |
|---|---|---|
| PROFESSOR ... 1 | HONY. PROFESSOR ... 1 | PROFESSORS ... 3 |
| | ASSTT. PROFESSOR ... 1 | ASSTT. PROFESSORS ... 3 |

| NEUROLOGY | VENEREAL DISEASES | PLASTIC SURGERY | PAEDIATRICS | UROLOGY |
|---|---|---|---|---|
| ASSTT. PROFESSOR ... 1 | ASSTT. PROFESSOR ... 1 | ASSTT. PROFESSOR ... 1 | ASSTT. PROFESSOR ... 1 | ASSTT. PROFESSOR |

THORACIC SURGERY.
ASSTT. PROFESSOR ..... 1

| DERMATOLOGY | NEURO-SURGERY | TUBERCULOSIS |
|---|---|---|
| ASSTT. PROFESSOR ... 1 | ASSTT. PROFESSOR ... | PART-TIME ASSTT. PROF. 1 |
| PART-TIME ASSTT. PROF. ... 1 | | |

### BASIC DEPARTMENTS

| ANATOMY | | PHYSIOLOGY | |
|---|---|---|---|
| PROFESSOR | 1 | PROFESSOR | 1 |
| ASSISTANT PROFESSORS | 3 | ASSISTANT PROFESSOR | 1 |
| ASSITANT PROF. OF HISTOLOGY | 1 | ASSTT. PROF. OF EXPERIMENTAL PHY. | 1 |
| ASSTT. PROF. APPLIED SURGICAL ANAT. | 1 | ASSTT. PROF. OF BIOCHEMISTRY | 1 |
| DEMONSTRATORS | 12 | DEMONSTRATORS | 9 |
| ARTIST | 1 | ARTIST | 1 |
| TECHNICIANS | 5 | MEDICAL TECHNOLOGIST | 1 |
| MODELLER | 1 | TECHNICIANS | 5 |
| L.D.C. | 1 | L.D.C. | 1 |
| EMBALMER | 1 | GESTETNER OPERATIVE | 1 |
| LABORATORY ATTENDANTS | 7 | LABORATORY ATTENDANTS | 3 |
| MEDICAL TECHNOLOGIST | 1 | CLEANERS/SWEEPERS | 4 |
| CLEANERS/SWEEPERS | 8 | | |

ASSISTANT STORE KEEPER ... 1

| PHARMACOLOGY & THERAPEUTICS | | PATHOLOGY | |
|---|---|---|---|
| PROFESSOR | 1 | PROFESSOR | 1 |
| ASSISTANT PROFESSORS | 2 | ASSISTANT PROFESSOR | 1 |
| DEMONSTRATORS | 6 | ASSTT. PROF. BACTERIOLOGY | 1 |
| PHARMACEUTICAL CHEMIST | 1 | ASSTT. PROF. HAEMATOLOGY | 1 |
| ARTIST | 1 | ASSTT. PROF. CHEMICAL PATHOLOGY | 1 |
| TECHNICIANS | 4 | DEMONSTRATORS | 9 |
| L.D.C. | 1 | CURATOR OF MUSEUM | 1 |
| LABORATORY ATTENDANTS | 5 | ARTIST | 1 |
| CLEANERS/SWEEPERS | 2 | TECHNICIANS | 5 |
| | | L.D.C. | 1 |
| | | LABORATORY ATTENDANTS | 4 |
| | | CLEANERS/SWEEPERS | 7 |

ASSISTANT STORE KEEPER ... 1

| FORENSIC MEDICINE & TOXICOLOGY | | HYGIENE & PREV. MEDICINE | | PSYCHIATRY |
|---|---|---|---|---|
| PART-TIME PROFESSOR | 1 | PART-TIME PROFESSOR | 1 | PART-TIM PROFESSOR ... 1 |
| DEMONSTRATORS | 2 | ASSTT. PROF. OF FREQUENTLY MEETINGS | 1 | |
| PEON | 1 | DEMONSTRATOR | 2 | |
| | | MEDICAL SOCIAL WORKER | 1 | |
| | | HEALTH EDUCATOR | 1 | |
| | | STENOTYPIST | 1 | |
| | | PEON | 1 | |
| | | CLEANER | 1 | |

### OTHER ALL ED DEPARTMENTS ETC.

| LIBRARY | | MAIN OFFICE | | MAIN LECTURE HALLS | | BOYS COMMON ROOM | | GIRLS COMMON ROOM | | COLLEGE COMPOUND | | PHOTOGRAPHIC DEPARTMENT | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| LIBRARIAN | 1 | RECORD SECTION | 1 | PEON | 2 | PEON | 1 | PEON | 1 | CHOWKIDARS | 3 | MEDICAL PHOTOGRAPHER | 1 |
| L.D.C. | 1 | DAFTRI | 1 | SWEEPER | 1 | | | SWEEPRESS | 1 | RANGERS | 2 | PHOTOGRAPHIC TECHNICIAN | 1 |
| PEONS | 2 | GESTETNER OPERATOR | 1 | | | | | | | MALES | 2 | DARK ROOM ATTENDANT | 1 |
| | | PEONS | 9 | | | | | | | SWEEPERS | 4 | | |
| | | DHOBI | 1 | | | | | | | | | | |

| MOTOR GARAGES | | ANIMAL HOUSE | |
|---|---|---|---|
| MOTOR DRIVERS | 4 | ANIMAL ATTENDANTS | 2 |
| MOTOR CLEANERS | 4 | CLEANER | 1 |

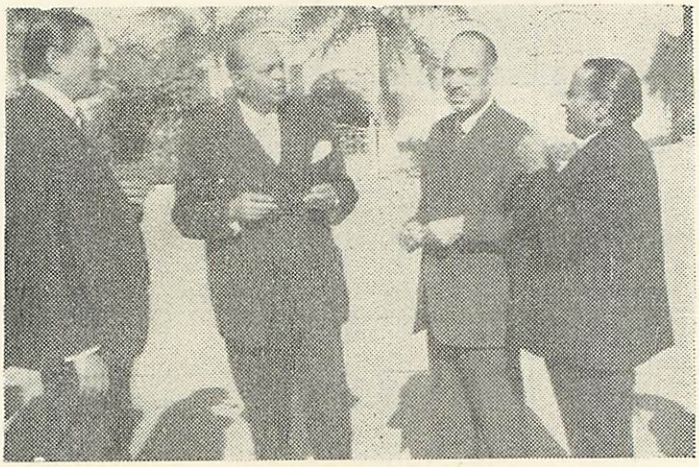
### HOSTELS

| BOYS NEW HOSTEL III | | BOYS NEW HOSTEL II | | GIRLS HOSTEL | | BOYS HOSTEL I | | BOYS NEW HOSTEL IV | |
|---|---|---|---|---|---|---|---|---|---|
| PART-TIME WARDEN | 1 | PART-TIME WARDEN | 1 | PART-TIME WARDEN | 1 | PART-TIME WARDEN | 1 | PART-TIME WARDEN | 1 |
| PART-TIME SUPERINTENDENT | 1 | | | PART-TIME SUPERINTENDENT | 1 | PART-TIME SUPERINTENDENT | 1 | PART-TIME SUPERINTENDENT | 1 |
| CHOWKIDARS | 2 | BUTLER | 1 | COOK | 2 | COOK | 1 | COOKS | 4 |
| LASCARS | 5 | COOK | 1 | CHOWKIDAR | 1 | CHOWKIDARS | 2 | ASSISTANT BUTLER | 1 |
| HOSTEL SERVANTS | 4 | ASSISTANT BUTLERS | 2 | SAMOSIAS | 2 | HAMMALS | 5 | LASCARS | 5 |
| SWEEPERS | 2 | LASCARS | 4 | ASSISTANT BUTLERS | 2 | CLEANER | 1 | CHOWKIDARS | 2 |
| | | CHOWKIDARS | 2 | LASCARS | 3 | SWEEPERS | 3 | MALES | 1 |
| | | MALES | 1 | PEON | 1 | | | HOSTEL SERVANTS | 4 |
| | | HOSTEL SERVANTS | 2 | HAMMAL | 1 | | | CLEANER | 1 |
| | | SWEEPERS/CLEANERS | 3 | MALES | 1 | | | SWEEPERS | 2 |
| | | | | SWEEPERS | 2 | | | | |

ASSISTANT STOREKEEPER ... 1

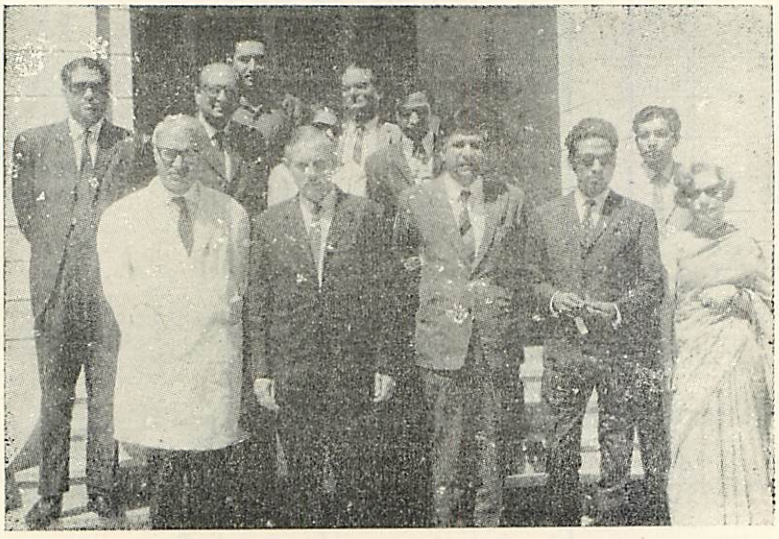
4574-2

# Visitars' Gallery



*Principals may come and Principals may go, but I'll go on for ever.*

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Amin H. Karim MD

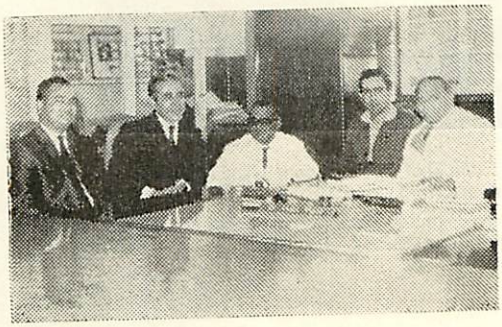


*Prof. Corstair, professor of Phyciatery and a leading Psychologist of U. K.*

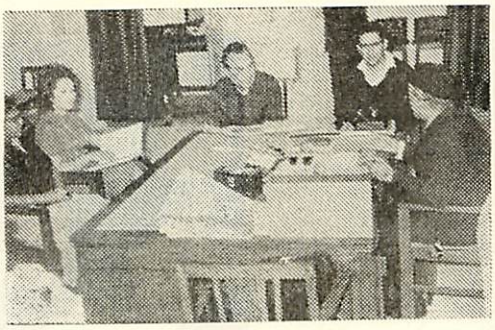
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*Mr. Manzoor Elahi, Chief Secretary, Govt. of Sind along with Staff and Students' Union.*



*Professor of Anatomy of Tehran University along with Prof. Wahid & Dr. Kashfuddoja*



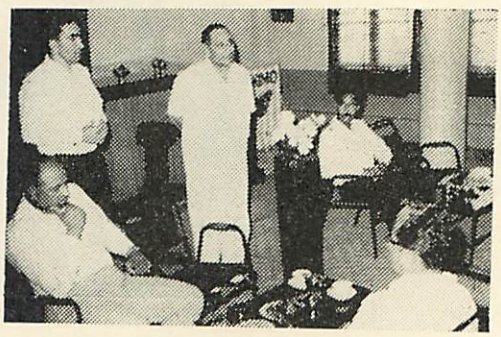
*Dr. & Mrs. Hadi Adham.*
*Director General Clinical Services Ministry of Health, Iran, with Prof. Ansari in the Hygiene deptt.*

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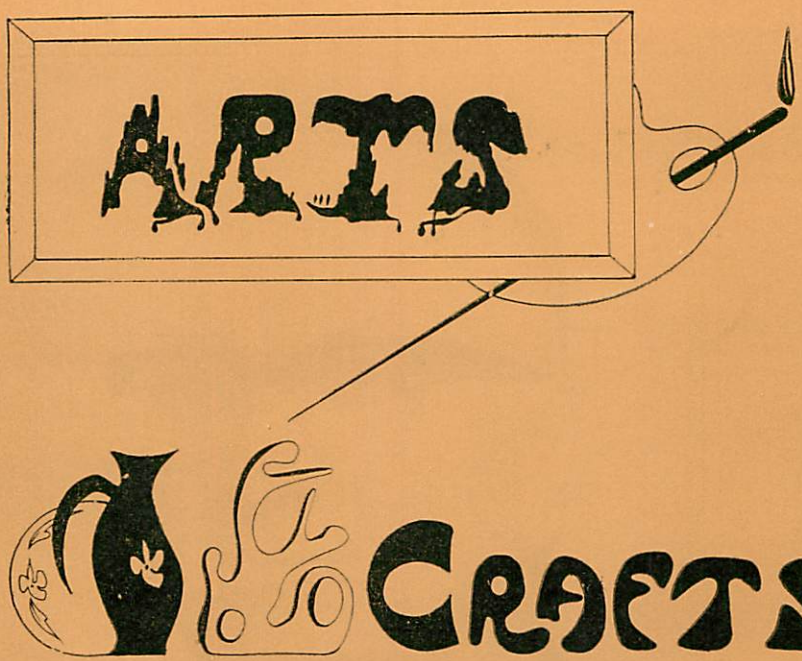
*Plenary Session of the IInd International World Health Education Conference.*
*From (R. to L.) Col. N. H. Qamar, Prof. A. Wahid, Prof. Saleh A. Memon Prof. Naziruddin Ahmed & Prof. Aziz Wine.*

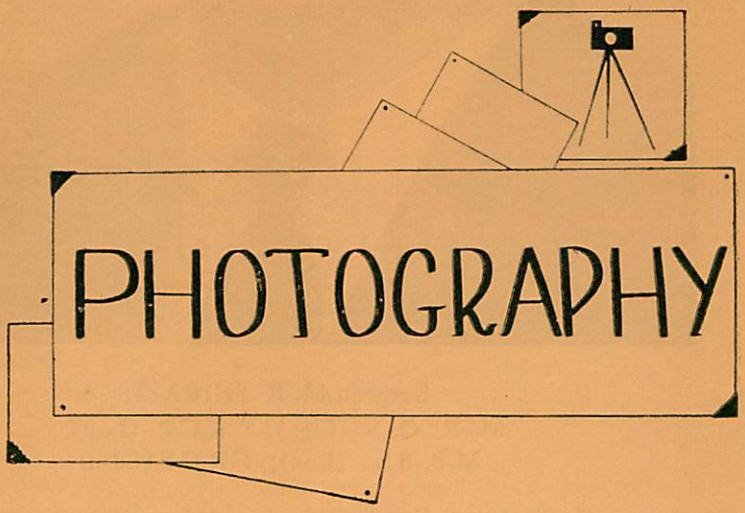
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*Prof. A. Wahid, Patran, inaugrating the Dow Medical College Student's Union Canteen.*

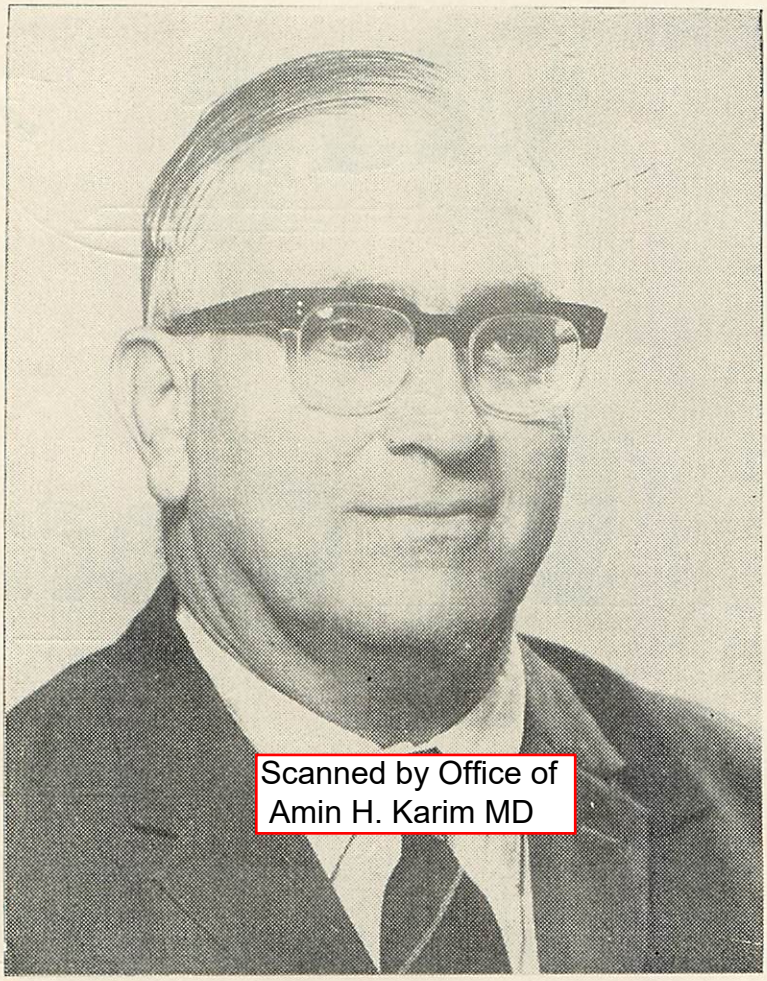
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# Chairman Writer's Forum



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Surgeon M. R. SHIRAZI,
M. R. C. S. (Eng.); L.R.C.P. (Lon);
M.B.,B.S., (Lon); F.R.C.S.(Edn.)

*Head of the Department of Thoracic Surgery,*
*Dow Medical College, and Civil Hospital.*
*Visiting Surgeon: Tubercolosis Training Centre*
*and*
*Ojha Sanatorium, Karachi.*

DR. M. R. Shirazi born in Madras in 1916, comes from a well known Iranian family. Did his early education from Madras Christian College and Intermediate from Govt. Mohammadan College with Logic Roman and Greecian histories as his subjects with distinctions and then within nine months did his Pre-Medical subjects topping his class. Coming from a conservative family he had his share of grinding in Persian, Theology and Caligraphy at the family "Maktab". No wonder he is a man of extensive general knowledge.

He joined the Madras Medical College in the year 1935—the centenary year of the college—and did his First Professional Examinations. Then he suddenly decided to do his Clinical training abroad and left for England in 1937. There as they recognise only the courses of studies, he had to take all the Examinations again viz. London Matric, Intermediate Science, 1st and 2nd Professionals, which he did all in one year successfully from the University College, London. He did his clinical training under some very able teachers from St. Bartholomew Hospital. London. He took the graduation examination of the Royal College and of the London University all at the same time in the thick of bombing in 1942.

Being war years he joined the Emergency Medical Service and worked at various hospitals in the very heart of London admist the historic bombing and has many a tale of his narrow escapes from the jaws of death. It was an opportune time for one with a surgical bend of mind and he gained considerable experience in dealing with war casualities and transfusions working two and three days at a stretch in the theatres.

War over, in 1946 he had to leave for home as abruptly as he went, due to his father's illness. Not finding any passage on passenger ships he managed a working passage on a low tonnage cargo boat as the Medical Officer of the ship, with all its authority and privileges. He cannot forget the improvised surgical techniques he had to employ enroute.

In 1948 he migrated to Pakistan, and joined the Jinnah Central Hospital as Resident Surgeon and after a year he was selected in open competition for training in Thoracic Surgery and obtaining his Fellowship. During 1950 to 1954 he did his training in Thoracic Surgery at the Brompton Hospital, and the Thoracic Surgical Unit of St. Bartholomew Hospital, his Fellowship of the Royal College of Surgeons, Edinburgh and two years of appointments at the London Regional Thoracic Unit, Manchester Regional Thoracic Unit and Grove Park chest Unit for tubercolosis. On return home he was appointed Asstt. Professor, Dow Medical College and attached as associate Surgeon to Jinnah Central Hospital. In 1958 he was transfered to Civil Hospital where he continues to date. He has been the first and only trainee in Thoracic Surgery in Pakistan and the first incumbent of the Thoracic Surgery speciality in Karachi. He heads the Thoracic Unit at the Civil Hospital and the Surgical Wing of the Ojah Sanatorium, Karachi. He has written many papers in his field which have been read at various Conferences and Semiars. He is Patron-in-Chief of one of our well circulated Medical Journals—The Medical Forum and also its Honorary Editor.

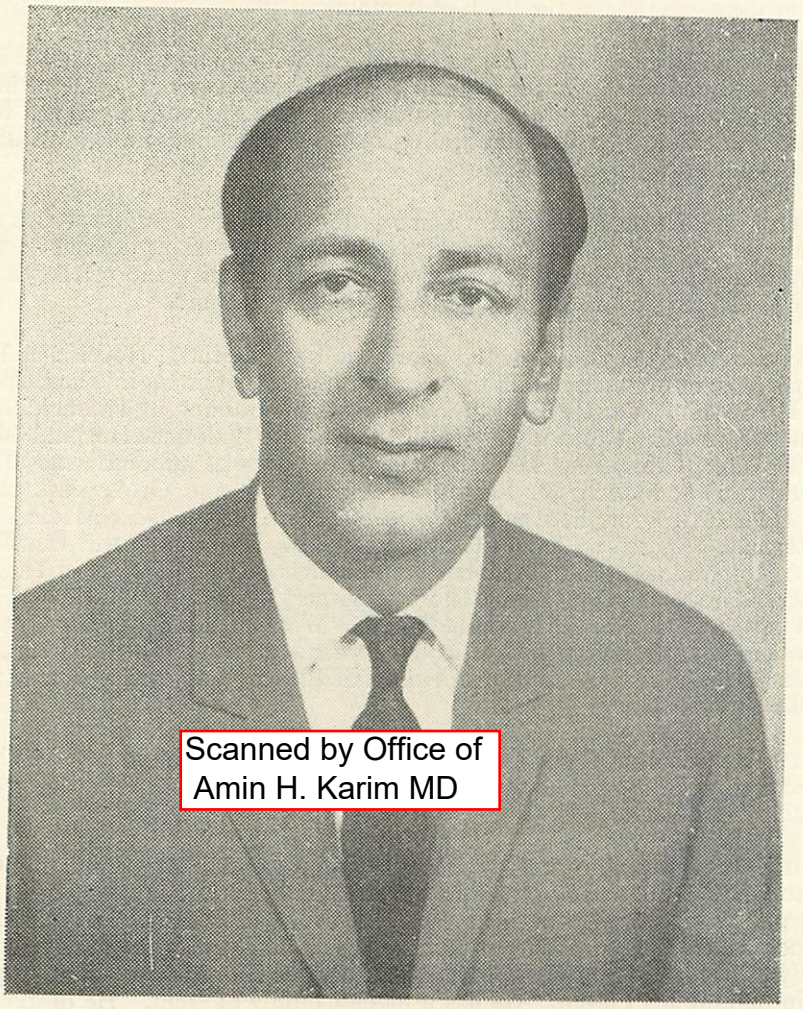
His special interest is in Oesophageal Surgery and Surgical Treatment of Asthma. Under the new administration he hopes to develop Cardiac Surgery which he has not been able to do so far, due to lack of facilities.

Surgeon Shirazi is an all rounder. He had his share of Military training in O.T.C. is not shy of sports and though not a front ranker he was in the college team in volley ball and hockey—his favourite games. As a teacher he has a nack of stressing basic principles and adopting a very informal attitude which makes one feel at home in his clinics. He loves poetry, enjoys qawwali and vehemently protests against Family Planning, in fact he is quite sore about his partner's non co-operation in making his Eleven. He has a modest family of eight. He dislikes cricket and thinks it is only good for the lazy Lords and their Govt. He feels that youth should have something that can build stamina.

In short Surgeon Shirazi is a pleasant character but does he also get angry! His latest acquisition is that he is now a Haji.

# Chairman

## Photography, Arts & Crafts Society



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Dr. NUSRAT ALI SHAIKH
M.B.,B. S.; F. R. C. P.

*Director, Skin & Social Hygiene Centre.*

BORN in Simla-India in the year. 1925, Did his early education from Simla and New Delhi and after Passing his matric went over to Lahore and joined F.C. College for his intermediate studies.

Graduated from K. E. Medical College in the year 1947 and subsequently having worked as a demonstrator in Physiology proceeded to U.K. for Post Graduation where he qualified M.R.C.P. with dermatology as his speciality. In 1969 was elected to the Fellowship of Royal College Edinburg.

Dr. Nusrat Shaikh had been an associat Physician and Asstt. Prof. of dermitology in J.P.M.C. in the Year 1957 and then subsequently with effect from December 1957 to date as director of skin and social hygeine centre. Within a short period he brought up the centre to a very high standard, where now, latest method and technique of investigation are used, X-Ray plant has been installed many important slides of cases have been made to facilitate the teaching of the subjects of the under graduate and post graduate medical students. General charts have been made in under to keep the record of the statistic of the disease of the country

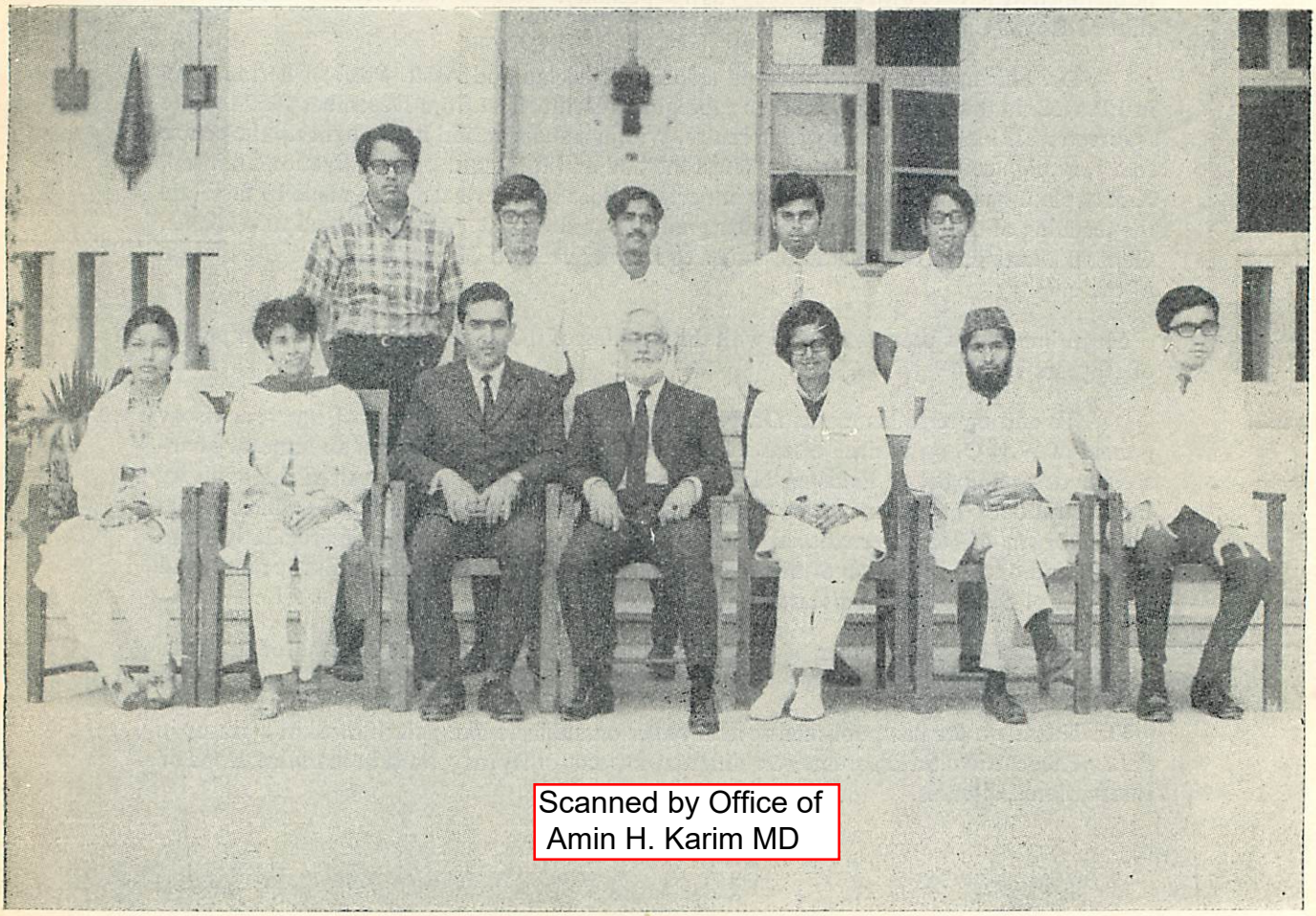
Meantime he has been associated with the teaching of the subject the D.M.C. far a period of 10 years 1960-70.

To add more to his merits Dr. Nusrat Shaikh has been a member of expert advisory pannel of W.H.O. on venirial diseases for the last 14 years and also been an honorary consultant dermatologist to Pakistan Navy since 1966. Has been a member of the advisory Editorial Board of the magazine "International Journal of Dermatology" which is the official organ of the International Society of Tropical Society, published regularly from U.S.A. and on the invitation of this society he has represented Pakistan to Europe and read his paper of patern of Skin diseases in Pakistan.

He has also been a member of the advisory Editorial Board of the Journal of the Pak. Medical Association.

Dr. Nusrat so far has published several paper on subjects like patern of Skin diseases in Pak. Paedeatric skin disorders, on different aspects of leprosy, on skin manifestations of International diseases.

# Writers Forum



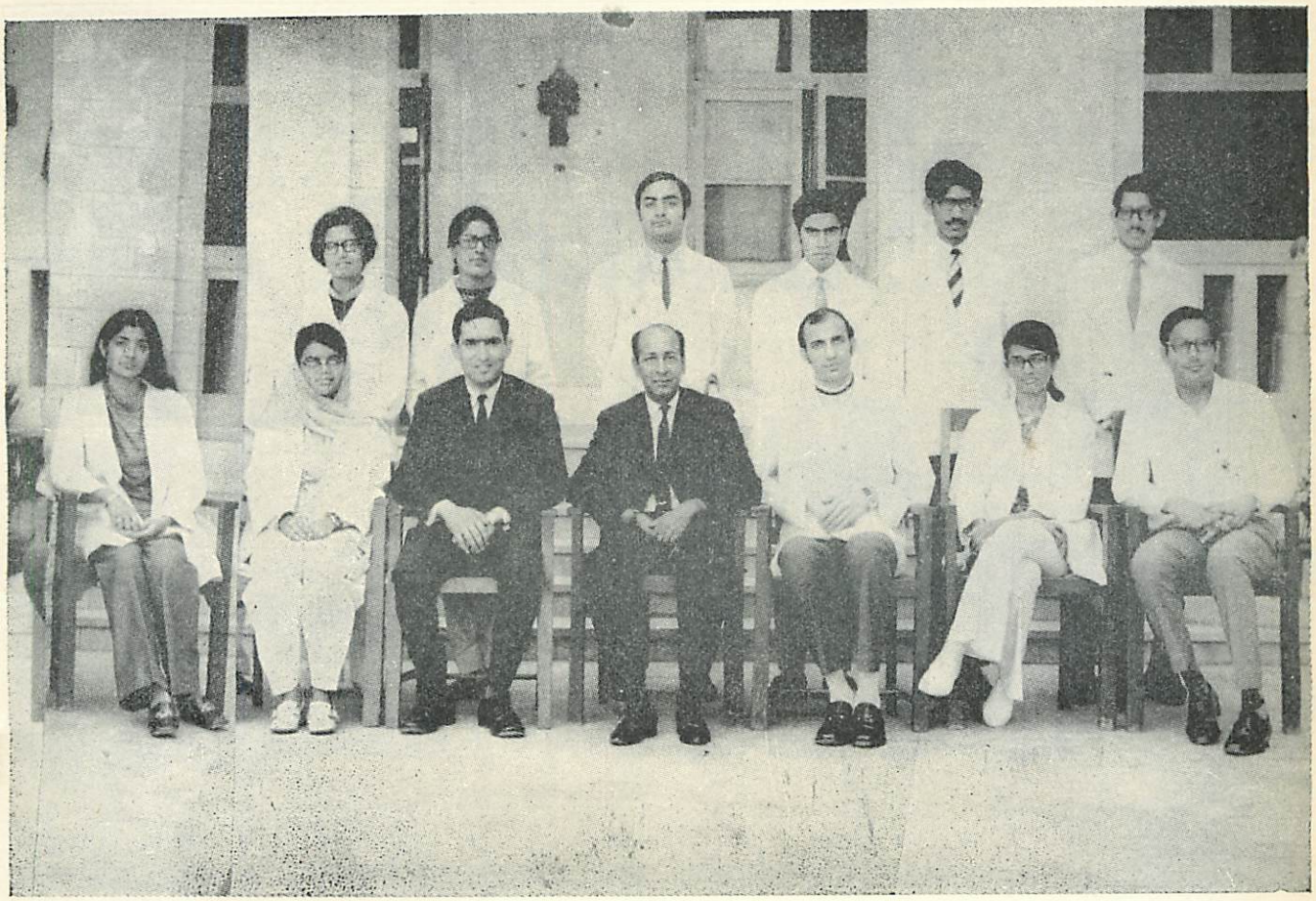
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**Chairs L. to R:**—*Atiya Sharif, Qamrunnisa, Hashem Shariat (President Surgeon M.A. Shirazi (Chairman), Fauzia, Abdul Hakeem, Zuhair.*

**Standing L. to R.-***Fazle, Peshimam, Iqbal, Jawed, Tariq.*

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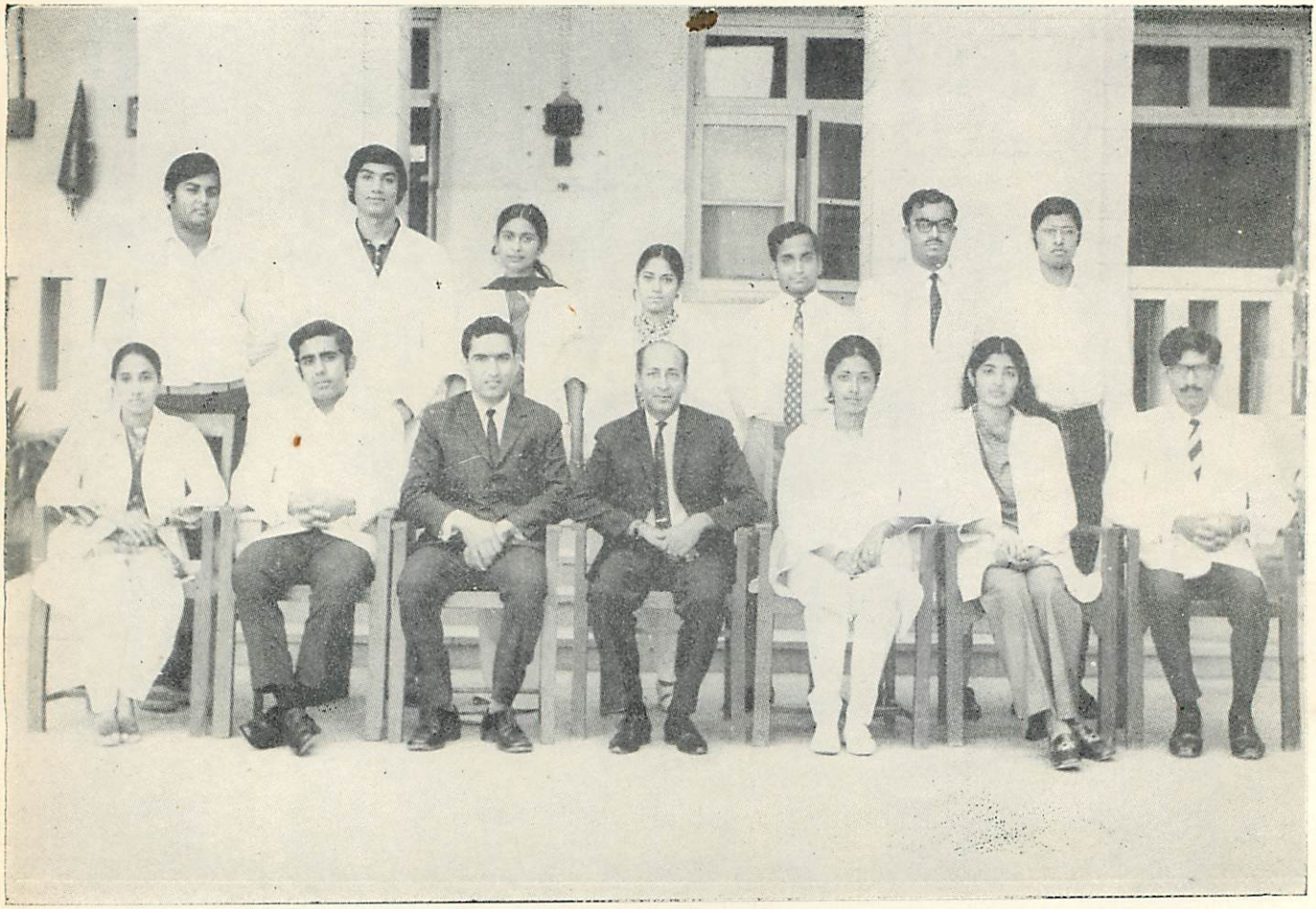
# PHOTOGRAPHIC SOCIETY



**Chairs L. to R.:**—*Miss Shaesta Gilani* (*Sec.*) *Miss Ayesha Nasruullah*, *Hashem Shariat* (*President*,) *Dr. Nusrat Shaikh* (*Chairman*), *Nasser Jadalizadeh* (*Vice President*), *Asma Quraishi*, *Rizwan*.

**Standing L. to R:**—*Fauzia*, *Naseem*, *Iftikhar*, *Samad*, *Osman Baluch* (*Sec. Arts and Crafts*).

# AR TS AND CRAFTS SOCIETY



**Chairs. L. to R.:**—*Miss Siraj, Ikram, Hashem Shariat (President), Dr. Nusrat Shaikh (Chairman) Miss Azra Hatimali (Vice President), Miss Shaesta Gilani( Sec. Photography), Usman Sadiq Baluch (Sec. Arts & Crafts).*

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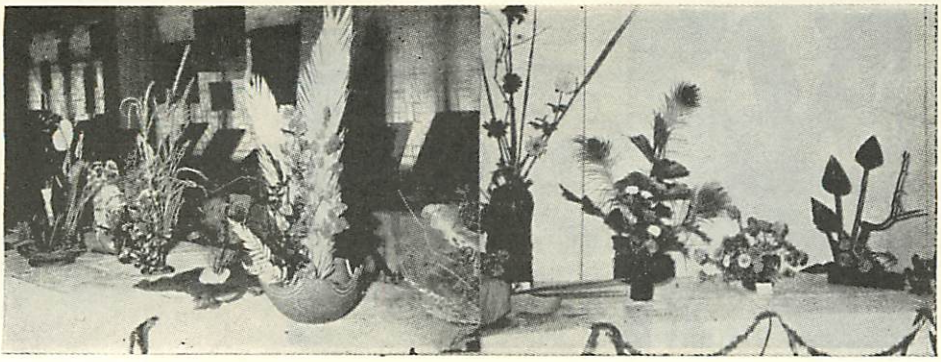


*Miss Azra Hatimali, Vice President of the Arts & Crafts Society.*

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*Mrs. Habib Patel and Mrs. Razzak Mohd as Judges for the Flower Show.*



*A Section of the Fresh & dry arrangement flower exhibition.*



*Mr. Usman Sadiq Baluch, Secretary of Arts and Crafts Society.*



*Dr. Shaukat and Mr. Rahi, looking for the best Craft.*

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*The decorated Hall.*

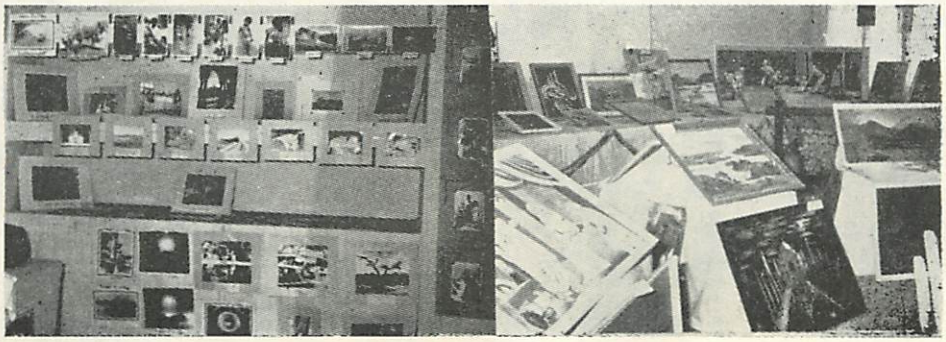
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*Miss Shaesta Gilani, Secretary Photography Society.*

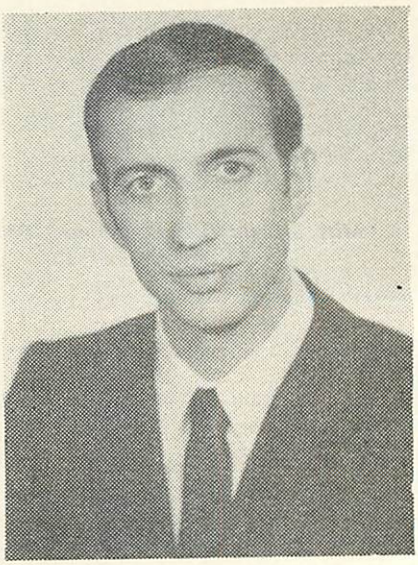


*Dr. Nusrat, Chairman of the Society, Judging for the best Photograph.*



*A Section of the Photography & Paintings of the Exhibition.*

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*Mr. Nasser Jadalizadeh vice President of the Photography Society*



*Group photograph of the winners, with the Chief Guest. Prof. Fazal Elahi.*

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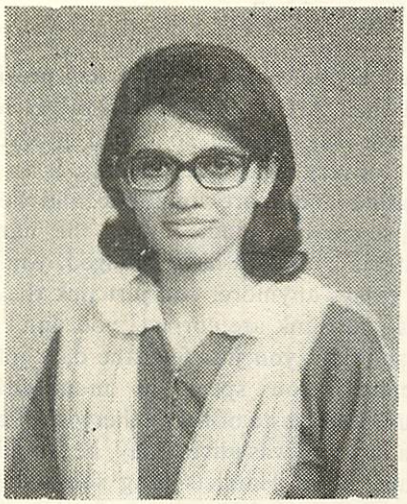
*President of the Society, presenting the reports of the activities of the Society.*

# Arts and Crafts and the Doctor

By

ASMA S. QURESHI

*IVth Year M. B., B. S.*



THE stepmotherly treatment which is given to Arts and Crafts in professional colleges is lamentable but most understandably unavoidable. The artistic activities of the individuals in DM.C. are mostly restricted to the colourful drawings of anatomical figures—but once in a while their artistic capabilities are brought out, dusted and ocassionally a feeble attempt is made to remove the rust, and thus we see the outcome of their toils at the "Arts and Crafts Exhibition".

There is one artistic, I should say Craftic talent, which flourishes in D.M.C. and that is "Photography". The soaring prices of film rolls do not bother the industrious workers, who are always on the lookout to catch people unguarded, and in their most ridiculous pose. The Photographic Club collects members like flies but alas their wings cannot be clipped.

The portion which suffers the most is the Literary Forum; the English and Urdu literature suffers tortures at the hands of enthusiasts, whose vocabulary is limited to medical terms and whose stretch of imagination, unfortunately does not extend beyond the esteemed gates of D.M.C. and whose thinking powers have either been exhausted or fatigued but I would hate to say stunted!

Year after year the Editor has to plough through articles and poems at the end of which his condition is pitiable, and what to say of the readers, they leaf through the glossy pages, have to tickle themselves at the attempts at humour, and have to hang on to their concentration which restlessly wanders, or they pause to wonder at the literary powers of our future doctors. After the experience of reading the writers of D.M.C. straining at their pens they have serious doubts about Somerset Maugham, A. J. Cronin and Conan Doyle being doctors! The crowning glory regarding our writers is the complete dis-interest they show regards making any attempt to improve their work. It is not a question of, "He knows not, and knows that he knows not", but unfortunately the case here is. "He knows not & knows not that he knows not.

What of the proverbial doctor with his stock of jokes, his ready quotations, his philosophies of life, but now if a patient quotes something the doctor stares at him open mouthed, he has never heard of such a thing. The medical students today, when enter D.M.C. are exempted from reading

any thing which may enlarge the horizons of their literary intellect.

The "Dying Art" or what was previously called the "Art of self-expression" is having its grave dug by the so called progress of today. Every thing man invents, is to make him more and more immobile and he puts these suicidal products under the name of "comforts". Times have changed, you don't write essays anymore, you just tick the statements you think are correct! you don't think of a solution, you just feed the data into the computer! You speak in monosyllables because its a waste of time otherwise. Perhaps if Shakespeare was alive today, he would have cut out all of Hamlets long soliloquys and replaced them with grunts of "Uh-uh" or "Blast the king" etc. What with Romeo kneeling in Juliet's garden and vowing his everlasting love, today there would be no time for it, that is the cruz of the problem. There is no time nowadays for anything—the point is where has all the time gone? Have the days and nights shortened?

In D.M.C. the cause is genuine, but inspite of that the points put up as an excuse though being valid are not substantial enough. Medicine is unlimited, the vistas of knowledge are vast and the thirst for knowledge un-quenchable, but to better oneself, to refine the individual and create a balanced personality, too much of one thing and none of the other always has undesirable results. Though Shakespeare coming from the lips of a doctor is surprising but never unpleasant. An eloquent doctor is never unwanted, though not an over-eloquent one.

In the O.P.D's patients come with wooden faces and go out with the same; the doctor is like a machine, they feed in the data and the diagnosis comes out and they return as they came. The humens feeling is amiss, the individual to individual contact is absent The expression on the doctor's face would I think be as wooden, if a camel walked in to be examined, perhaps it would be in later hours that the doctor would reflect (if he got the time) upon the days happenings and say to himself. "That individual was certainly strange looking." It would never occur to him that "That individual was a Camel!"

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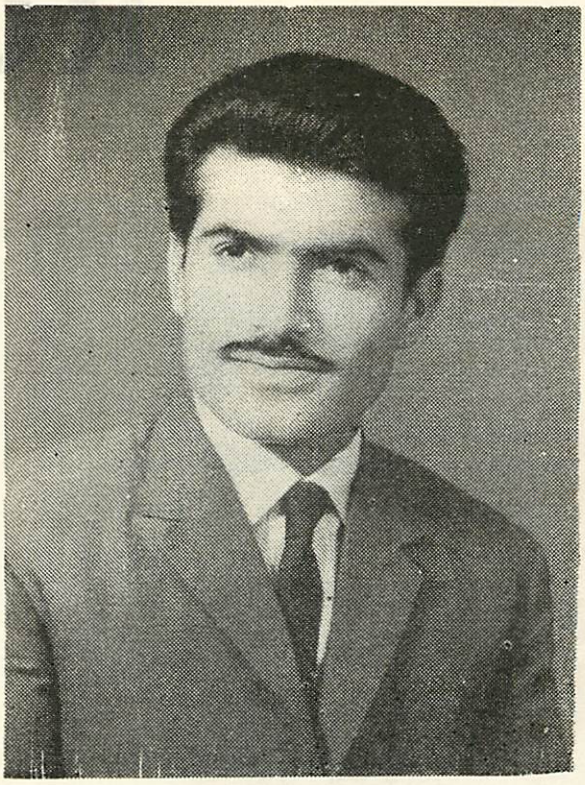
## Answers to Spot Diagnosis

(from page No. 445)

1. Congenital shortened leg.
2. Meningocoel.
3. Necrotic sinus resulting from Quinine injection
4. Rickets.
5. Filarial Elephantiasis.
6. Carcinoma of Transverse Colon.
7. Congenital absence of the anus.
8. Carcinoma of breast.

# Mr. Abdul Hayee Baluch

*Final Year M.B.,B.S.*



BORN in village chhalgari sub-district Bhag, District Kachhi, Baluchistan in the year 1945. Did his primary education in the same village and his secondary education from Government High School, Bhag. Stood III position in the whole province of Baluchistan. Inter Science from Government College Khuzdar. Mr. Hayee had the distinction of being the only Pre-medical student to pass from that college in the year 1964. In November 1964 admitted to Dow Medical College against the reserved seats of Quetta/ Kalat Division.

During his school days he had the honour of being the Head Boy of the school. During College life he was elected as a General Secretary of the College Union. During his Secretaryship he called for a general students strike which was fruitful. In Dow Medical College in 1967 he organized an All Pakistan Baluch students convention in Karachi, and formed the Boluch students organization in All Pakistan basis and was made the founder Chairman of the organization. At present he is the Secretary General of Pakistan Federal Union of students and President of Baluch students organization. Last but not the least a proud member of the National Assembly from the Baluchistan Province.

# ROLL OF



Dr. NASEEM BANO
*Final Year M.B.,B.S,*

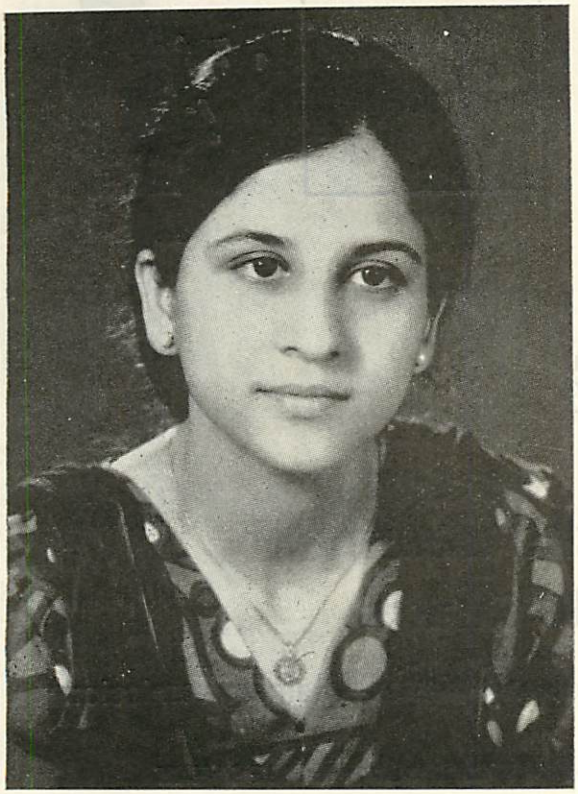


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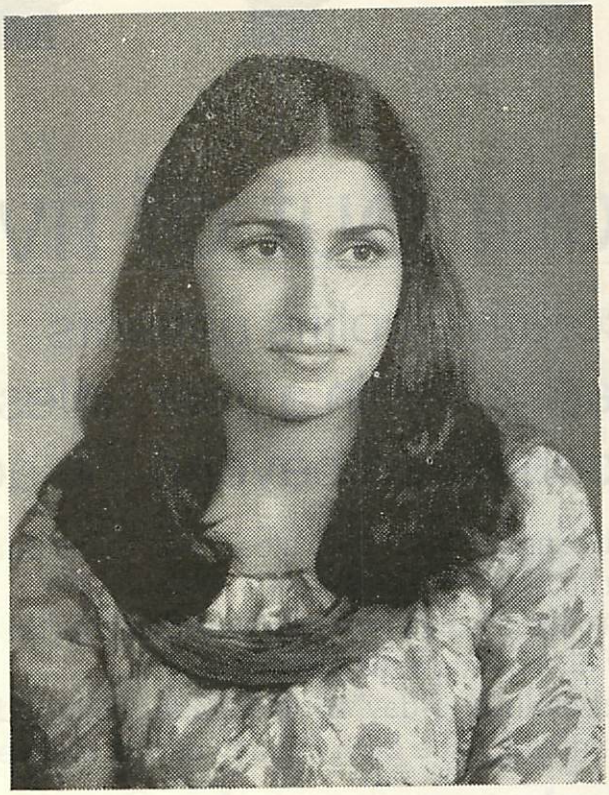
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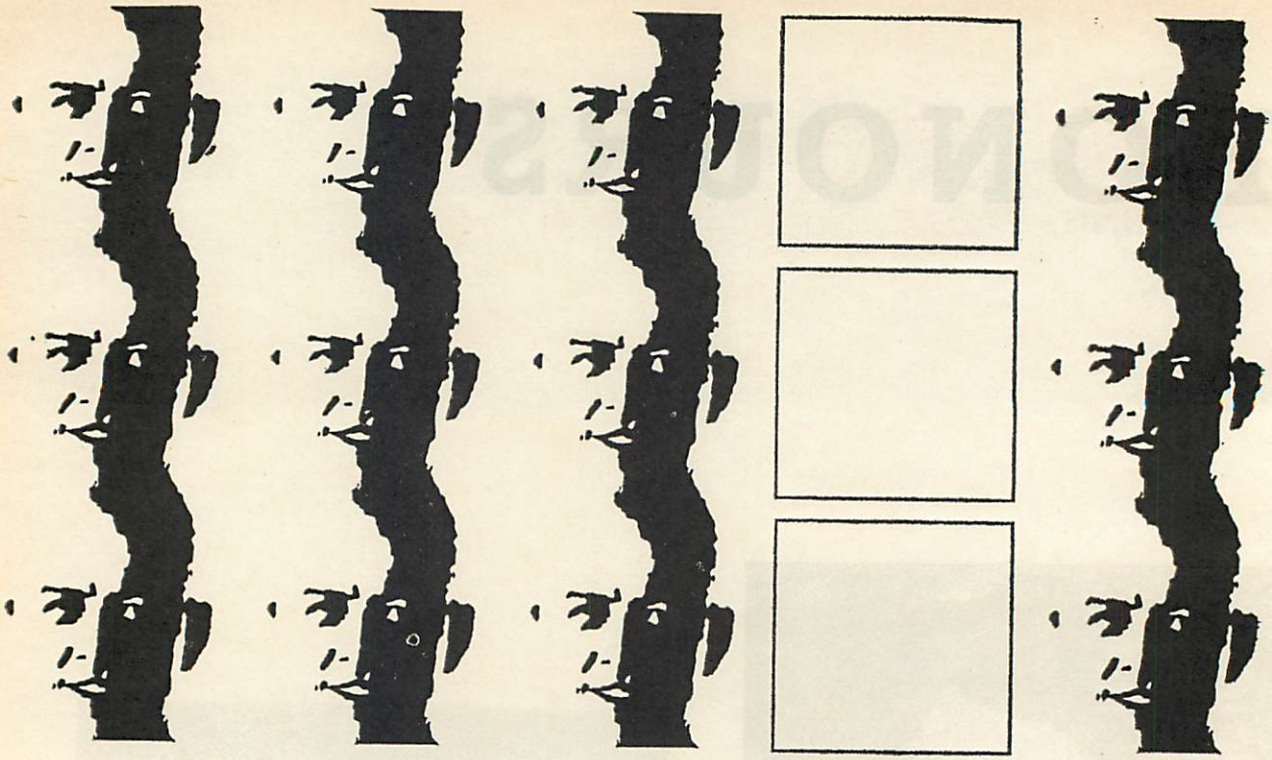
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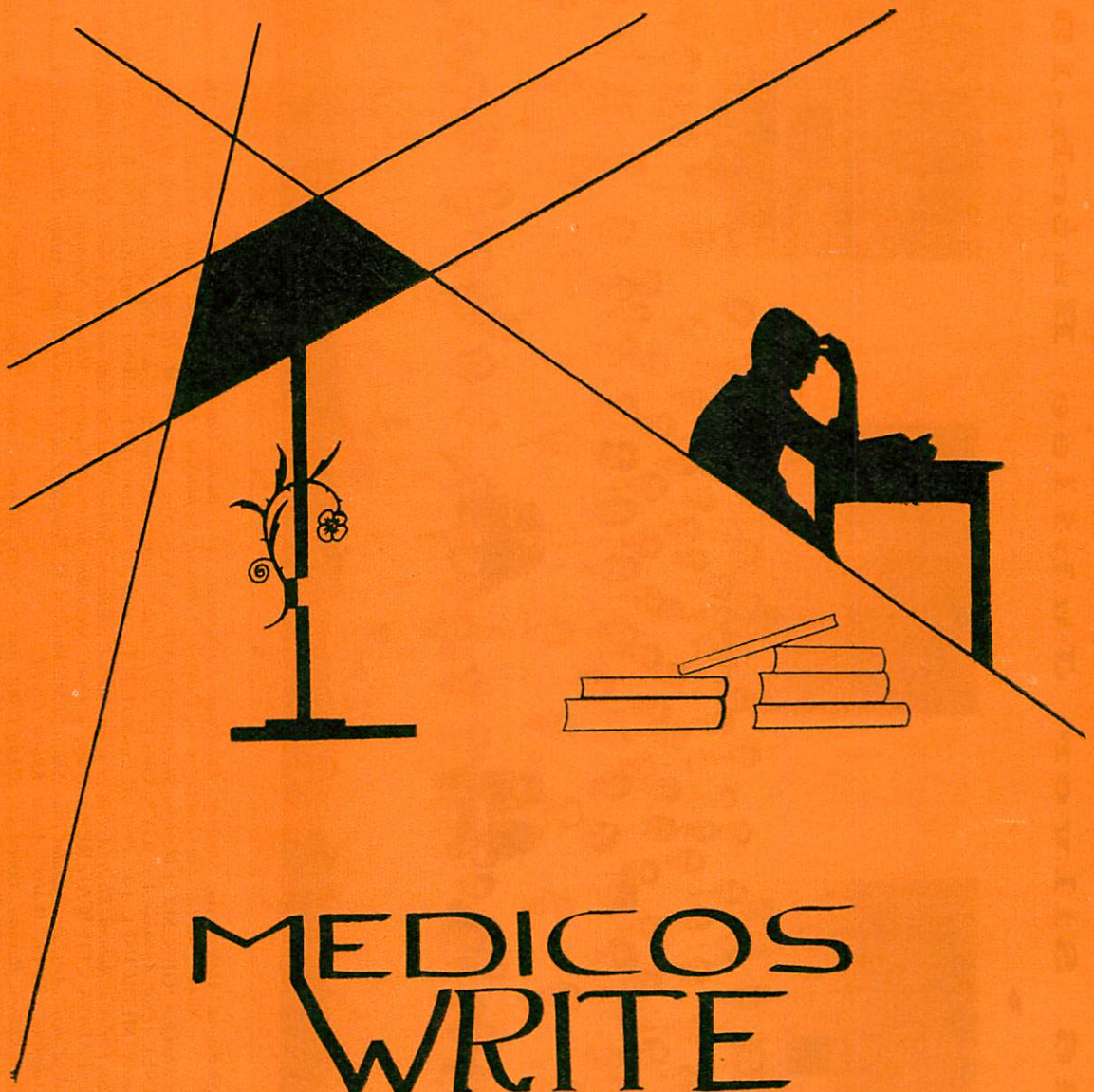
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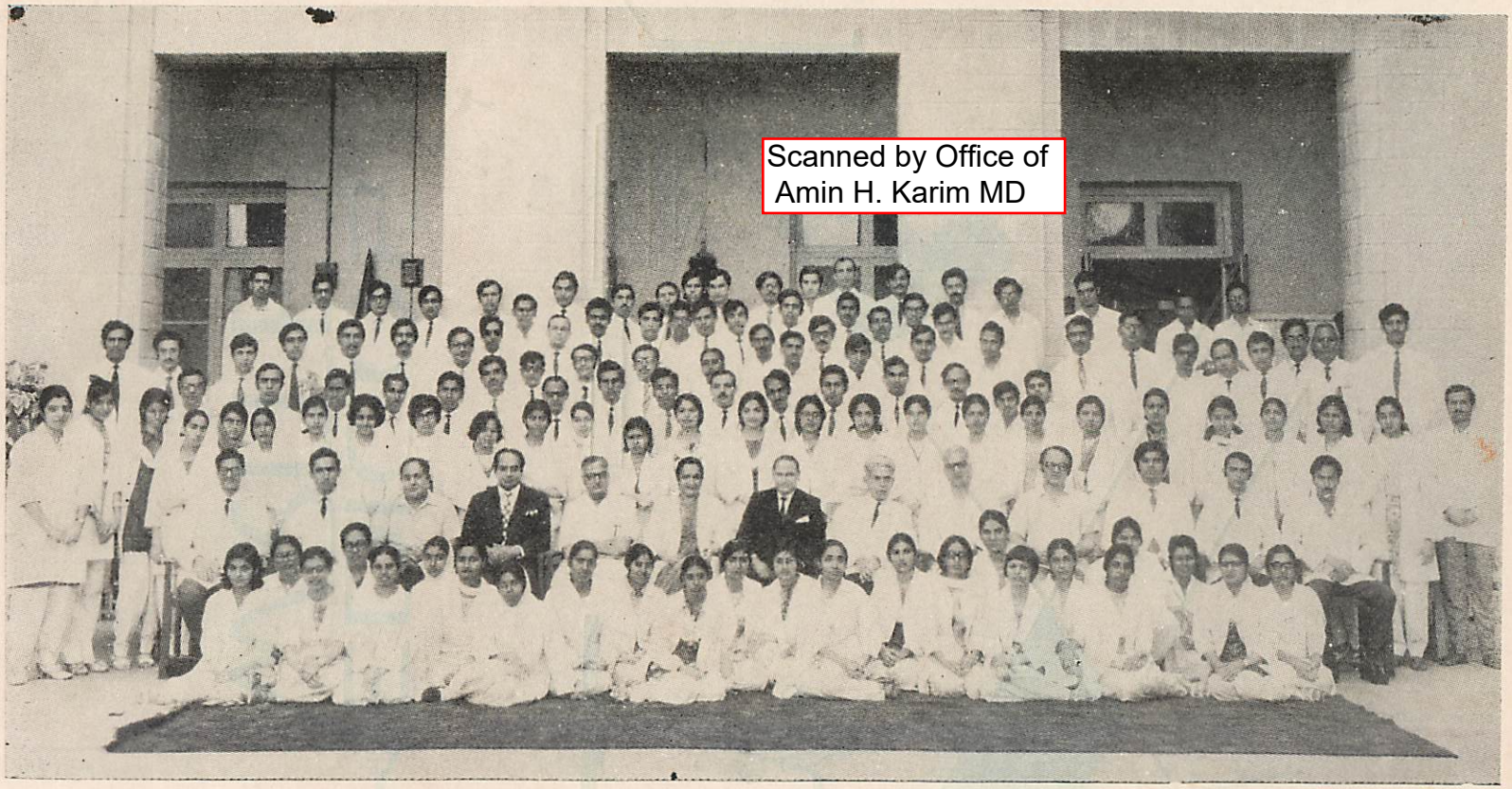


# MEDICOS WRITE

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# Final Year M. B., B. S.

## 1945-46 Silver Jubilee Batch-1970-71



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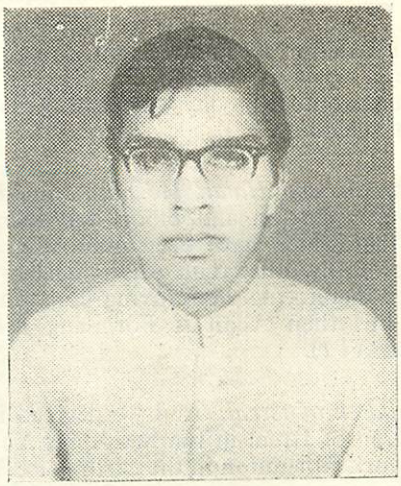
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# WHAT THE HOLY QURAN SAYS



INAMUL HAI

*2nd Year M. B., B. S.*

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ISLAM means complete submission to God. It lays down in the Holy Quran certain tenets and injunctions according to which a Muslim (Momin) should act and live throughout his life. If Muslims obey the Commands of God and fulfil the obligations to Him and to their fellow beings they will be rewarded amply, if not they will be severely punished by Allah in this world and in the hereafter.

Below are some of the excerpts, concerning various subjects, from the English Translation of the Holy Quran by Mohammad Marmaduke Pickthall. These are reproduced with the fervent hope that the readers of this Magazine will derive benefit from them.

*Importance of Quran:* This is the Scripture whereof there is no doubt, a guidance unto those who ward off (evil). (*Surah II*).

And when the Quran is recited, give ear to it and pay heed, that you may obtain mercy. (*Surah VIII*).

And when thou recitest the Quran, we place between thee and those who believe not in the hereafter a hidden barrier. *Surah XVII*).

*Obedience to God:* Successful indeed are the believers. These are the heirs who will inherit Paradise. There they will abide. (*Surah XXIII*).

And those who believe in the revealations of their Lord, these race for the good things, and they shall win them (disbelievers) in the race. (*Surah XXIII*).

Lo! I have rewarded them this day for as much as they were steadfast; and they verily are the triumphant. (*Surah XXIV*).

*Disobedience to God:* As for the disbelievers, whether thou warn them or thou warn them not it is all one for them; they believe not. Allah hath sealed their hearing and their hearts, and on their eyes there is a covering. Theirs will be an awful doom. (*Surah II*)l.

And the Jews say: Ezra is the son of Allah, [illegible]ans say: The Messiah is the [illegible]hat is their saying with their [illegible]imitate the saying of those who disbelieved of old. Allah fighteth against them. How perverse are they! *Surah IX*).

*Mercy:* Save him on whom they Lord hath mercy: and for that He did create them. (*Surah XI*).

*Fasting:* The month of Ramadan in which was revealed the Quran, a guidance for mankind, and the criterion of right and wrong. And whoseever of you is present, let him fast the month, and who so ever is sick or on a journey, let him fast the same number of other days. (*Surah II*).

*Promise to God:* Fulfill the covenant of Allah when ye have covenated, and break not your oaths after the asseveration of them, and after ye have made Allah surety over you. Lo! Allah knoweth what ye do. (*Surah XVI*).

*Thankfulness to Go:* And when your Lord proclaimed: If ye give thanks, I will give you more; but if ye are thankless, lo? my punishment is dire (*Surah XIV*).

*Weights and Measures:* Fill the measure when ye measure, and weigh with the right balance; that is meet, and better in the end. (*Surah XVII*).

*Expenditure:* And let not thy hand be chained to thy neck nor open it with a complete opening lest thou sit down rebuked, denuded. (*Surah XVII*).

*Orphans:* Give unto orphans their wealth. Exchange not the good for the bad nor absorb their wealth into their wealth. Lo! that would be a great sin. Lo! Those who devour the wealth of the orpahns wrongfully, they do but swallow fire into their bellies, and they will be exposed to burning flame. (*Surah IV*).

*Pride:* And walk not in the earth exultant. Lo! thou canst not rend the earth, nor canst thou stretch to the height of the hills (*Surah XVIII*).

Turning away in pride to beguile men from the way of Allah. For him in this world is ignominy, and on the day of Resurrection, We make him taste the doom of burning. (*Surah XXII*).

*Aggression and War:* Fight in the way of Allah against those who fight against you, but begin not hostilities. Lo! Allah loveth not aggressors. (*Surah II*).

Those of them with whom thou madest a treaty, and then at every opportunity they break their treaty, and they keep not duty to Allah, if thou comest on them in the war, deal with them so as to strike fear in those who are behind them, that haply they may remember. (*Surah VIII*).

And call not those who are slain the way of Allah "dead". Nay, they are living, only ye perceive not. (*Surah II*).

*Revenge:* In truth they lord destroyed not the townships tyrannously while their folk were doing right. And Lo! unto each thy Lord will verily repay his works in full. (*Surah XI*).

*Wickedness:* Deem not that Allah is unware of what the wicked do. He but giveth them a respite till a day when eyes will stare in terror. (*Surah XIV*).

*Haraam and Halal:* He hath fobidden for you only carrion and blood and swine-flesh and that which hath been immolated in the name of any other than Allah; but he who is driven thereto, neither craving nor transgressing, Lo! then Allah is Forgiving Merciful, (*Surah XVI*).

*Children of Isreal:* And we decreed for the Children of Israel in the Scripture: Ye varily will work corruption in the earth twice, and ye will become great tyrants. (*Surah XVII*).

And unto those who are Jews, We have fobidden that which we have already related unto thee. And we wronged them not, but they were wont to wrong themselves. (*Surah XVI*).

*Burden of children:* Slay not your children, fearing a fall to poverty, we shall provide for them and for you. Lo! the slaying of them is great sin. (*Surah XVII*).

*Repentence:* Triumphant are those who turn repentent to Allah, those who serve Him those who praise Him, those who fast, those who bow down, those who fall prosprate in worship, those who enjoin the right and forbid the wrong and those who keep the limits (ordained) of Allah—and give glad tiding to believers. (*Surah IX*).

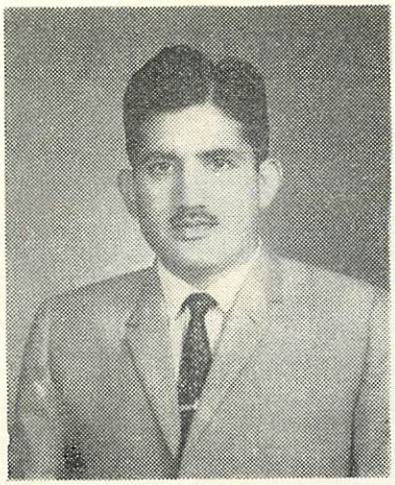
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# "The Holy Guran - a Natural Miracle"

*(For the students of Science and Medicine)*

By

DR. MUZAFFAR IQBAL CHUGTAI



FEW verses from the Surah Yasin (*the Heart of Quran*) as they concern the central figure in the teaching of Islam and the Central doctrine of Revelation and the here-after.

*Rakoo or Section* (3) *and Verses from* 33-35.

**No. 33:**—A token unto them (*or sign for the human being*) is the dead earth. We (God) revive it and We bring forth from it grains so that they eat thereof.

**No. 34:** And We (God) have placed there in gardens of date palm and grapes, and we have springs of water to gush forth therein, that they may eat of the fruits there-of, and their hands made it not. Will they not, then, give thanks?

**No. 35:-** Glory be to Him (God). who created *all the sex pairs*, of that the earth groweth, and of themselves (Human) and of that which they know not!

***Commentary:-** The mystery of sex runs through all the creations, in man, in animal life, in vegtable kingdom (as our Botonists had proved a few decades age), and possibly in other things of which we have no knowledge.

Then there are pairs of opposite forces in nature, e.g., positive and negative electricity.

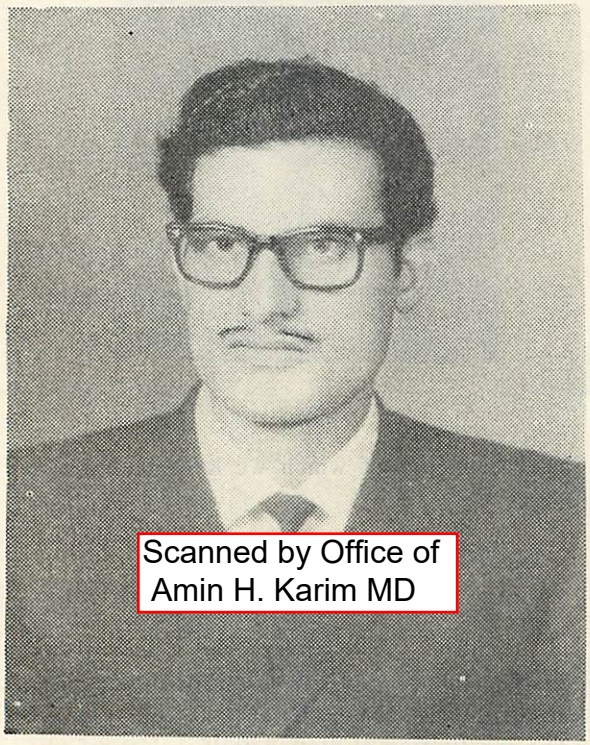
The atom itself consists of a positively charged nucleus or proton, surrounded by negatively charged electrions.
The constitution of matter itself is thus referred to pairs of opposite energies.

Fellow students! Will you think over the above which are told by Ummi Prophet (Ummi:- means who was not educated by any human being but by God directly), about fourteen hundred years ago, which have been discovered now by scientists a few decades ago after the discovery of high-power microscopes etc.

Really the Holy Quran is a living, everlasting miracle of our Prophet Mohammad (*May peace and blessings of allah be upon him*).

This is the Book,
In it is guidance,
Sure, without doubt,
To those who fear God.

# MANAGEMENT OF ASTHMA


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By

NASIR UDDIN KHOKHAR

*Final Year M. B., B. S.,*

MORTALITY from asthma in recent years has been reported to be much increased, particularly in countries like England (Donald and Flenley, 1970; Heaf, 1970) and United States (Speizer et al., 1968 a;Hagy and Settipane, 1969). This has been attributed to increased use of corticosteroids and of pressurised areosols containing sympathomimetic drugs (Speizer et al., 1968 a). This increase did not occur until about a decade after the introduction of corticosteroids for asthma and therefore it seems unlikely for these to be responsible for the deaths (Speizer et al., 1968 b ). Excessive amounts of adrenergic aerosols like Isoprenaline, by stimulating adrenergic receptors in the myocardium, particularly when it has been sensitised by the effect of hypoxia and vasoconstriction, may lead to fatal arrhy thmias (Tai and Read, 1967; Tudhope, 1969). It has been pointed out by Inman and Adelsten (1969) that the death rate from asthma has fallen down following recent fall in sale of aerosols after the suspician had arisen about their harmful effects. Read (1968), however, suggests that the rise in mortality may be due to change in the natural history of the disease.

The management of asthma in such circumstances presents a challenge for the clinician. This may be described as (a) management of an acute attack of asthma including what is known as Status asthmaticus and (b) management of Chronic asthma.

## MANAGEMENT OF ACUTE ATTACK

The patient should be put in bed and allowed to lie in a position giving him maximal comfort. Oxygen inhalation may be started if the patient is in obvious distress or has cyanosis. The hyposia in asthma has been recently appreciated and emphasis has been laid down on determination of blood gas tensions before and during Oxygen therapy. Oxygen should be humidified as dry air has marked ability to dry up the respiratory secretions. The concentration of gas should be regulated properly as 100% Oxygen has been found to alter the histology of alveolar cells, to impair ciliary action, irritate bronchial mucosa and damage pulmonary capillaries (Harris and Riley, 1967).

Sympathomimetic drugs are valuable for aborting mild to severe attacks. While using bronchodilators, an effective dose should be given and patient may be taught to administer the drug to himself at the onset of attack (Davies, 1968).

**Adrenaline :**

.3-.5 ml. of 1:1000 solution should be injected subcutaneously and repeated if required. Dose upto 1 ml. may be tolerated. Fresh preparation, which is colourless, should be used and not repeated more than three times. For longer action, a preparation of adrenaline in oil may be given 6-12 hourly (Beaumont, 1966). Adrenaline as subcutaneous drip has been used where it is injected drop by drop after half to one minute interval from a 2 cc syring until bronchospasm is relieved or the pulse rate reaches 140 per minute.

Sympathomimetic drugs should be used with great caution in patients with hypertension, heart disease or hyperthyroidism (Sherman, 1967).

**Isoprenaline :**

This can be used either sublingually or by inhalation. 20 mg. tablets are placed under the tongue and allowed to dissolve. Aerosols containing isoprenaline are also available. These can lead to fatal arrhythmias (Tai and Read, 1967) It may also precipitate severe airway abstruction indistinguishable from a clinical attack of asthma (Keighley, 1966). Throbbing headache may also occur.

Newer bronchodilators, Orciprenaline and Salbutamol, seem to have similar relaxant effects on bronchial muscles without cardiac effects (Kelman et al., 1969).

**Orciprenaline :**

Orciprenaline has been found to have statistically highly significant difference of action on pulmonary function tests against placebo (Coleman & Howard, 1965). It has been shown to be superior to Isoprenaline (Pelz, 1967) and Isoetharine (Howard & Coleman, 1967) for giving prompt and prolonged relief of brochospasm. 5% Orciprenaline has proved an effective aerosol with fewer side effects than 1% Isoprenaline and has duration of action comparable to isoprenaline with Atropine methonitrate 0.2% (Havard, 1968a).

**Salbutamol :**

Salbutomol is a newer drug for asthma, evidence in whose favour is increasing day by day. The advantage of this over isoprenaline etc. is that it selectively stimulates beta 2 receptors in the bronchial muscle and has no effect on the receptors in the heart (Tattersfield & McNicol, 1970); Warrell et al., 1970; Palmer et al., 1970; Riding et al., 1970) and yet produces greatest increase in FEV1 and VC (Riding et al., 1970). Its duration of action is about 5-1/2 hours as compared to 1-1/2 hours of isoprenaline (Palmer et al., 1970). It is administered by inhalation and produces better effects than isoprenaline even when given orally (Kamburoff & Prime, 1970).

Salbutamol inhaler delivers 100 mcg. per inhalation and tablets containing 2 mg. as sulphate are also dispensed. No serious side effects as yet, have been reported.

**Aminophylline :**

Aminophylline is used in dose of 0.25-0.5 G in 10-20 ml. of 5% glucose or distilled water intravenously slowly at the rate of one cc per minute by the watch (Hasan, 1966) in cases who do not respond to drugs already described. When it is given rapidly it may cause tachycardia, arrhythmias, cardiac pain or convulusions. Injections may be repeated once or twice. Alternative method of administration is continuous introvenous infusion of 1000 cc dextrose 5% containing 40-80 units of ACTH and one gram of aminophyline. Drip is discontinued when the patient improves.

Aminophyllane is not suitable for oral use as it causes gastric irritation (Alstead et al., 1969). Choline theophyllinate in 200 mg. doses 3-4 times a day after meals may be used. "Entair" capsules contain a new theophylline combination and given as one capsule tid pc have been reported to be very effective and well tolerated (Goldthrope et al., 1964).

Aminophyline can be given per rectum as suppository or enema (Sherman, 1967; Ritchie, 1965). Absorption has been found (Younginger et al., 1966) to be regular when given as enema than as suppository.

Aminophylline relieves bronchospasm by acting directly on the smooth muscle of bronchi (Laurence, 1966). Atuk et al. (1967) have suggested that this may stimulate the adrenal medulla and possibly chromaffin tissue outside adrenal medulla as well to produce Catechol amines as shown by increase in urinary adrenaline and noradrenaline excretion and increase in plasma free fatty acid concentration.

**Management of Status Asthmaticus :**

Status asthmaticus should be regarded as an acute medical emergency and treated vigorously. The principles of management should be to abolish bronchospasm, to reduce mucosal oedema, to remove accumulated secretions, relieve anoxia, correct acidosis, combat infection and to relieve anxiety & fear (Qureshi, 1970a).

**Corticosteroids :**

Corticosteroids should be considered in cases who do not respond to adrenaline and

aminophylline. They are said to be better than any other treatment available (Jacoby, 1966). Treatment should be started with Prednisolone 15 mg. Six hourly on the first day. 10 mg. Six hourly on the second day 5 mg. Six hourly there after (Grant & Harris, 1968). If the patient is seriously ill, Hydrocortisone hemisuccinate 100-200 mg. may be given intravenously. Dosage should be decreased gradually (Carryer, 1965).

The exact mode of action of steroids is not known but it is thought that they exert an anti-inflammatory action on the bronchial mucosa and relieve aedema (Alstead et al., 1969).

**Exceptorants :**

Speizer et al. (1968b) found over distended lungs with plugged small bronchi in 91% of autopsy cases. It is therefore highly desirable to remove the secretions from respiratory passages.

In the absence of iodine sensitivity, Potassium iodine 0.6 G tid pc in a mixture is beneficial to liquefy tenacious sputum. Using 100-300 mg. daily it was possible to decrease steroid dosage but enlargement of thyroid occurred in 18 out of 52 patients and acne were aggravated in the adolescent (Fallier et al., 1966). Ammonium Chloride may also be used with benefit (Sherman, 1967). Intravenous glucose may be given to remove dehydration and moisten secretions. Bronchial lavage with normal saline by bronchoscopic suction under general anaesthesia may have to be undertaken to remove tenacious and inspissated sputum (Sherman, 1967).

A newer drug, acetylcysteine (mucomyst), has been found to have great mucolytic property and has proved of significant value in removing tenacious sputum from respiratory tract in asthma and certain other conditions (Hurst et al., 1967). It is given by inhaltion and exerts direct irritative effect on bronchiolar musculature. Patients may exhibit an unusual reactivity to sulphydryl group in it and may develop wheezing after inhalation (Bernstein & Ausdenmoore, 1964).

**Sedatives :**

Sedatives should be given to allay anxiety and relieve restlessness but strong narcotics like morphine or pethidine are contraindicated as they depress respiratory and cough centres, release histamine and drpy up secretions (Jaffe, 1965). Paraldehyde is a safer drug (Nicholson, 1966; Qureshi, 1970a) which can be given per rectum or by injection (5-10 ml.). Chlorpromazine 25-50 mg. intravenously promotes relaxation and sleep (Grant & Harris, 1968).

Phenobarbitone or amytal in moderate doses can be given (Beaumont, 1966). If strong sedation is required, 60 ml. ether in 120 ml. of oil may be given per rectum (Sherman, 1967).

**Antibiotics :**

Infection of the respiratory tract, which is usually present, impairs the effect of steroids and adds to their hazards (Havard, 1968b), should be combated with suitable antibiotics. Ampicillin or tetracyclin in dosage of 250 mg. six hourly are useful for this purpose. Culture and sensitivity of the organism should be ordered lest antibiotics other than these be indicated.

**Anoxia and Acidosis :**

Oxygen inhalation should be started if the PaCo2 is above 50 mm Hg. Intermittent positive pressure respiration may be used which decreases energy expenditure, improves aerosol distribution, assists in removing secretions and helps in removing fear (Busey et al., 1968). Acidosis should be dorrected by an appropriate dose of sodium bicarbonate intravenously.

A great majority of patients are relieved when treated on these lines. Those who do not respond, general anaesthesia with ether or halothane in oxygen usually terminates status asthmaticus (Qureshi, 1970a).

**Management of Chronic Asthma :**

In patients with chronic asthma, an attempt should be made to discover the underlying cause which may be allergy, infection or psychological factors. A plan should be made to desensitize the patient, control infection, give psychiatric support, administer long-acting bronchodilators and general measures to make the patient symptom free. Long term corticosteroids should be considered at the end.

**Allergy :**

Cases of asthma has been found to increase after the plant polinating season (Booth et al., 1965). Desensitization may be carried by 50 subcutaneious injections of increasing doses of pollen extract each given at 3-4 days interval, starting about 3-6 months before the pollinating season, with 60-80% success (Heaf, 1966). Depot desensitization has been tried with considerable success but local and sys-systemic reactions often occur (Smedland et al., 1964).

Evidence is accumulating (Altounyan, 1967; Howell and Altounyan, 1967 Kennedy, 1967; Smith and Devey, 1968; Assem & Mongar, 1970; Sheard & Blair, 1970) in favour of a newer drug, Disodium Cromoglycate. Though certain workers have given less favourable results (Grant et al., 1967; Kidner et al., 1968), yet it has been called a major advance in management of allergic asthma (Howell and Altounyan, 1967). It is related to Khellin (Qureshi, 1970b) but is not a bronchodilator (Bignall, 1969) and acts by stabilising the cell membrane (Kerr et al., 1970) and inhibits the release of so called spasmogens from the sensitized cells. These mediator substances are histamine, bradykinin, 5 OH tryptamine and SRS-A. It inhibits the expected histamine induced fall in PEV and VC when given before histamine (Kerr et al., 1970) and hence is useful only in praphylaxis of asthma. It is used by in-halation through a plastic inhaler called spinhaler is dosage of 20 mg. in gelatin capsules with some isoprenaline to prevent any transient spasm due to powder irritation (Tudhope, 1969). No teratogenic effect has been found in rats and rabbits in moderate dosage (Schineden, 1969).

Antihistamines are in effective in asthma as other autacoids are also produced (Douglas, 1965).

**Infections :**

The presence of infection prevents proper absorption of aerosols (Heaf, 1966) and hence it should be controlled with suitable chemotherapy. Macrolide antibiotics like Triacetyl-oleandomycin and Erythromycin have been reported to increase FEV, and reduce steroid dosage in absence of any infection and their effect seems related to steroid metalbolism (Itkin and Menzel, 1960).

**Emotional Factors :**

In 41% of cases, psychological factors have been considered to be dominant (Rees, 1964) but no specific personality type has been recognized (Rees, 1964; Herbert, 1965). However, methods of relaxation are beneficial in chronic asthmatics and teaching them to breathe slowly and with minimum effort is helpful (Heaf, 1966). Controlled trials with regular hypnosis have proved effective (Maher-Loughnan et al., 1962) and behaviour therapy has been tried (Cooper, 1964). In severe emotional disturbances, phenobarbitone 30-70 mg. tid may be prescribed (Grant & Hearris, 1968) as in many patients an element of anxiety and fear may precipitate and maintain as asthmatic attack (Nicholson, 1966).

**Bronchodilators :**

Bronchodilators like ephedrine with longer duration of action may be prescribed in dosage of 30-60 mg. tid pc. Choline theophyllinate 200 mg. tid is also useful. Ephedrine and theophylline combined give slightly higher therapeutic effects (Taylor et al., 1965).

**Expectorants :**

Expectorants should be given to liquefy tenacious sputum and keep the respiratory tract clear, as excessive secretions prevent adequate absorption of drugs given as aerosols (Heaf, 1966), and increase patients distress.

**General Measures :**

The patient should be advised to have regular hours of rest and sleep and keep with normal activities of life. Dust and blankets etc. should be avoided and smoking given up. Heavy meals at night should not be taken, as they may precipitate an attack. Change of occupation or house may be considered if indicated.

**Corticosteroids :**

Livingstone and Davies (1961), reviewing results of long term use of corticosteroids in 71 patients, pointed out that the death rate from asthma had declined since their use for treatment of asthma. Good results were reported later (Somner et al., 1960; Pearson

et al., 1961; Rees and Willimas, 1962). Prednisone 10-15 mg. daily was capable of suppressing chronic asthma in a large number of patients and other analogues like Triamcinoline, Betamethasone, Dexamethasone and Methyl prednisolone had very little advantage over it (Heaf, 1966). The use of steroids has been reported to have increased to double in the past 8 years (Bookman and Katz, 1966). and it has been recommended they should not be used when more conservative methods effectively control asthma and if given, short courses should be used and gradually discontinued (Carryer, 1965) although the weaning process may be difficult in patients over the age of 30 (Knowles, 1961). Anabolic substance 'Stanozolol" given 6 mg. daily has been reported to decrease steroid requirements (Falliers, 1965).

Intermittant steroid therapy in selected cases may prove as effective as continuous one (Walsh & Grant, 1966) and prednisolone 5 mg. six hourly may be given on three consecutive days of the week with good results and lesser side effects (Grant & Harris, 1968).

Hydrocortisone and other steroids have been used as aerosols (Cotes, 1956). Dexamethasone aerosol seems to have more favourable results and it may be possible to decrease oral steroid dosage (Arbesman et al., 1963; Kravis & Lecks, 1966). These aerosols act topically on bronchopulmonary Tissue and cause less complications than with oral steroids with less adrenocortical suppression (Kravis & Lecks, 1966).

**Risks of Corticosteroids**

Corticosteroid drugs given for prolonged periods are liable to cause certain undesirable effects which depend on the dosage and duration of the treatment. Gain in weight is componest (Phear et al., 1960). Fat distribution of cushingoid type, acne and hirsuties, striae, amenorrhoea and increased tendency towards bruishing occur usually (Baylis, 1966; Havard, 1968b). Peptic ulceration with haemorrhage and perforation is common (Glenn & Grafe, 1967). Infection is considered to be responsible for a quarter of deaths attributable to steroid therapy although exanthemata like varicella in children receiving corticosteroids have been reported to be uneventful (Falliers and Ellis, 1965; Falliers et al., 1964) More seriously, Diabetes mellitus, hypertension, myopathy, mental disturbances, Osteoporosis with vertebral collapse and adrenal suppression may occur (Havard, 1968b). Arthropathy of hip joint and fat embolism may occur (Eberlein et al., 1967) and intracranial hypertension, hypothermia, posterior cataract and pancreatitis are unusual rare complications (Havard, 1968b).

In 34 pregnant women recieving prednisolone, there were 18 in which the foetus has been reported to be either still born or had shown evidence of being at considerable risk (Warrel & Taylor, 1968). Growth in children has been reported to remain unimpaired with dosage of prednisone or prednisoline less than 3 mg. per sq. m. (kerrebijin & Dekroon, 1968).

Keeping all these complications in view it is highly desirable that steroids should be used with great caution in patients having any condition described above and should be used only when these are really indicated. When on these drugs, the following rules should be observed; (Havard, 1968b).

1. Every effort should be made to reduce the dose, but this should be done gradually.
2. The patient should be made to realize that it is dangerous to stop the treatmen suddenly, any illness, infection or injury require increase in dose and that he should carry a card with him indicating the dose, preparation and length of time he is using steroids.
3. Urine should be tested for sugar and blood pressure reading taken at intervals.
4. A chest radiograph should be taken before starting the treatment and at six month intervals.
5. Any intercurrent infection should be treated vigorously.

BREATHING EXCERCISES.

During an attack the patient should be advised to breathe slowly and calmly to allow time for prolong expiration and thus preventing trapping offf air, over inflation and emphysema.

In chronic asthma, breathing exercises may help in preventing postural deformities, particularly in children.

**Miscellaneous :**

Chloroquine (Tannenbaum & Smith, 1966), Amitriptyline (Sugihara et al., 1965), Diethylcarbamazine (Mallen, 1965) and chorinoic gonadotrophin (Grimaldi, 1967) have been used with some success in asthma but all have doubtful position. 6-Mercaptopurine (Arkins & Hirsch, 1966) and Gamma globulins (Crepea et al. 1966) have been tried without benefit. Guanithedine has been used to potentiate the effect of adrenaline (Megahad & Fahmy, 1966).

**Summary :**

This article is an attempt to review very briefly the available facts about drugs and other measures presently available in the armamentarim against asthma.

**Acknowledgement :**

Prof. Mushtaq Hasan M.D., F. R. C. .. Dow Medical College, Karachi has been very kind during preparation of this paper. His kind encouragement and valuable advice is thankfully acknowledged.

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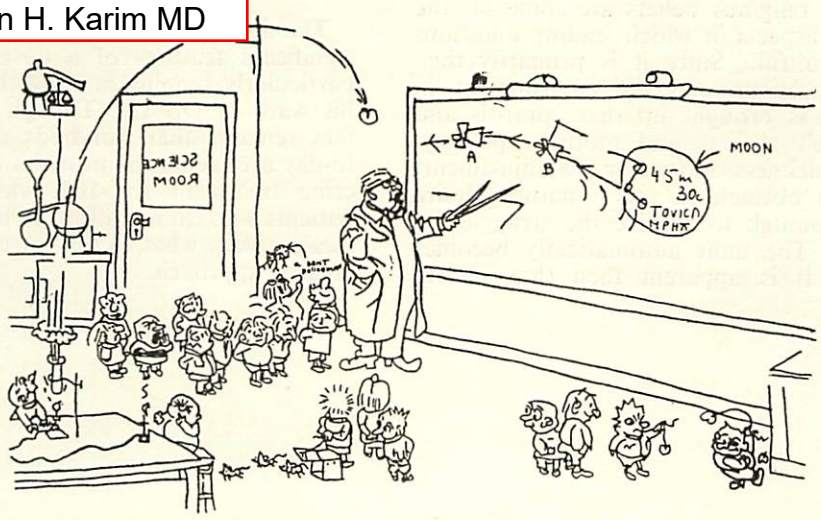
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# The Role of Psychiatry in Clinical Practice

SYED IRFAN ALI

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IRONICALLY one of the "blessings" of the artificial life of civilized society is a rise in those disorders of the human mind which are classed as functional. There is no demonstrable pathologic lession, and the diagnosis is therefore mainly clenched by an accurate history.

A patient who comes to the General Practitioner or to a Specialist essentially has an organic disorder, the cure of which falls in the realm of Medicine or Surgery usually. Yet the amelioration of a pathologic condition specifically with disregard to the patient's psyche often defeats the aim of drug therapy. An example is given for clarification. An unmarried woman consulted a Gynaecologist with the complaint of two weeks' amenorrhoea. She gave a history of sexual intercourse, probably the first in her life, some weeks back. The clinician examined her and convinced her she was not pregnant. The next day she mensturated.

An individual's family life, his sexual adjustments, his religious beliefs are some of the important aspects in which leading questions may be fruitful. Since it is primarily the hereditary set up and the environment in which one is brought up that controls and guides one's actions and motives, poverty, illiteracy, sickness and other maladjustments become an obstacle in one's natural desire to be fit enough to survive the struggle for existence. The unfit automatically becomes ill fated. It is apparent then that society owes far more to an illegitimate child, to the aged, to the juvenile delinquent driven to drink, drug or desire because after his graduation he discovers to his utmost grief that the "jack" to push him from behind or the hereditary money bin is unfortunately not engraved on the lines of his fate. Again, the majority of young women today feel that they should be prepared to face life alone if the man leaves them unprotected later on.

Such patients often give a typical history of chronic depression or anxiety and can be dealt with effectively by a trained Psychiatrist. The clinician has little to do. But if the same patient comes with asthma or ulcerative colitis or peptic ulcer, the physician or the surgeon has to keep in mind the psychogenic etiology of such diseases and to mention it in the history, if indicated by the patient, so that the Psychiatrist attached to the hospital can do the needful. At the other extreme, the same physician or surgeon can himself change the outlook of the patient by emphasizing to him the harmful effects of hurry and worry, and by taking an interest in the patient as a human being.

It would not be wrong to say that the greatest problem a Psychiatrist faces today is of convincing those patients who have themselves tried to solve their psychological problems by reading books or by practical experiences. Medical students stand out in this category of "patients".

The above article has in short outlined the significant features of a developing science, particularly keeping in mind the clinician and his ward or O.P.D. Though the very stark fact remains that hundreds of practitioners to-day are facing the problem of how to prescribe treatment for that vast majority of patients who cannot afford to have two square meals a day, what to talk of the elegant psychiatric approach.

# Clinical Symptomatology of Chills



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A CHILL is defined as shivering or shaking, an attack of involuntary contractions of voluntary Muscles accompanied by a feeling of cold and by pallor of the skin. Also known as rigors. Chills are common in many febrile illnesses. Whether a single chill occurs or the patient complains of repeated episodes of chills is often of diagnostic significance.

**Single Chill :**

A single rigor at the onset of an acute infection is usual. Among the illness in which an initial rigor is common are lobor Pneumonia, smallpox, influenza, severe colds, septicemia, pyemia, pneumonic tuberculosis, typhus, and relapsing fever. A single attack ofchills may characterize the onset of erysipelas, cerebrospinal fever, acute poliomyelites, Malaria, Yellow fever, weil's disase, and trench fever. It also may occur after catheterization, certain injections and blood transfusions.

In Lobar pneumonia, the initial single attack of chills is often severe and prolonged. This sudden shaking chill occuring in more than 80 per cent of patients, is accompanied by a rapid rise in temperature and corresponding tachycardia. Because more than a single rigor is unusual in penumonia, repeated chills should suggest another disorder. A second attack of chills in any condition characterized by a single rigor suggests complications.

A chill occurring in enteric fever or in the Paratyphoid fevers is a warning of the occurence of such complications as perforation of the intestine acute peritonitis pleurisy, Pneumonia, Middle ear disease, Periostitis or cholecystitis.

**Multiple or Recurring Chills :**

Malaria is characterized by chills recurring at regular intervals of 48 or 72 hours in the benign, tertian and quartan infections; and at shorter intervals if the infection is mixed. Relapsing fever begins with a chill or series of chills which recurs about two weeks after the patient seems to be convalescing. A second relapse may occur at the end of the third week; in a few patients there is a third relapse.

Multiple rigors are most common in acute blood infections, such as puerperal fever, a bacterial infection of the uterus after child birth which spreads to the blood stream and Malignant endocarditis. Acute infective osteomyelitis and portal pyemia are also commonly characterized by chills. Among other conditions characterized by Multiple chills are acute leukemia, Pyelitis, Pyelonephirits, cystitis, empyema, infective sinus thrombosis, Advanced pulmonary tuberculosis complicated and bronchiectasis.

**Causes :**

*Lobar Pneumonia:* in more than 80 percent of patients with lobar Pneumonia, a sudden chill is an initial sign. BACTERIAL ENDO CARDITIS: chill may be a symptom of bacterial endocardits. Bacterial infection usually involves a valve demaged by rheumatic fever. Bacterial endocarditis often camplicates certain types of congenital heart diseases.

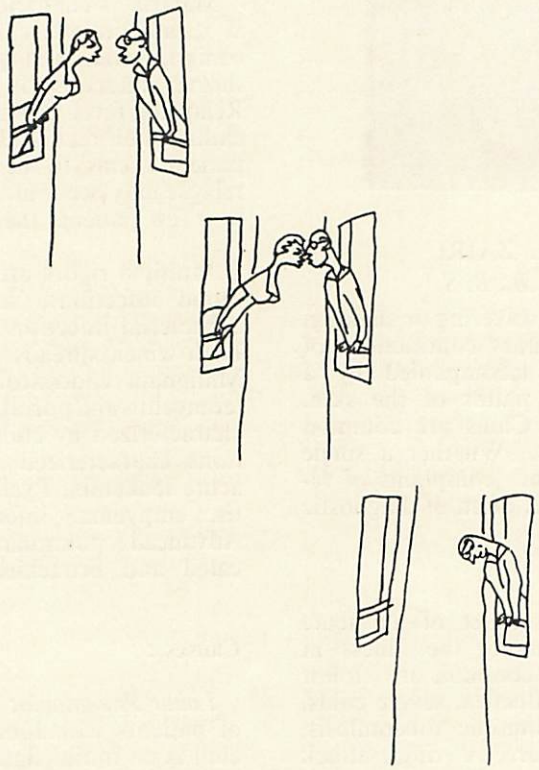
*Bronchieetasis:* Prolonged bronchial obstruction and infection cause irreversible dilatation of the bronchial tubes. Multiple chills may occur.

*Pulmonary Tuberculosis:* Chill sensations as toxemia progresses in pulmonary tubercusis occur particularly with an abrupt evening rise of temperature.

*Subphenic Abscess:* Peritioneal infections have a definite tendency to localize in the subphreuic area. Chills may develop from toxic absorption in abscess formation.

*Cholecystisis:* If the gall bladder or bile duct are inflamed Jaundice and hepatic pain usually are associated with fever and multiple chills.

(*Contribution from therapeutic notes*)



NO COMMENTS

# ENZYMES

KHALID SALEEM ASLAM

B. Sc. 3rd Year M.B.,B.S.

ANIMAL body generally maintains a constant temperature which is quite low and the range of pH in animal body is also very narrow. But we also know that a large number of organic and inorganic reactions are going on in the body. If we try to bring about any chemical change going on in vivo at a certain rate, then we find that under same condition in vitro the rate of reaction is too slow to be detectable even. This suggests that there is something in the body of animals which greatly accelerates the reactions. It has been named ENZYME.

The classical concept of enzymes maintains that they are catalysts of biological origin or simply organic catalysts.

Catalysts are all those substances which alter the rate of a reaction.

The characteristics of a catalayst are:—

1. It is unchanged at the end of the reaction, which it has catalysed. Although catyltic inhibition or poisioning may have taken place. It may be temporary or permanent.
2. Micro-quantities are sufficient.
3. Equilibrium point not affected although reached sooner.
4. Catalysts cannot start a reaction.
5. Catalysts are specific.
6. Temperature effects catalysed reactions.
7. Activation of the catalyst.

Comparing them with the characteristics of an enzyme we see:-

1. Enyzyme remains unchanged at the end of a reaction. However poisioning or inhibition may occur but it is only due to some side reaction.
2. Micro quantities are sufficient.
3. Reaction equilibrim not altered although reached sooner.
4. Enzymes do not start a reaction, although sometimes it seems that they have
5. Rate of reaction is proportional to the quantity of the enzyme within certain limits.
6. Enzymes do not increase the total energy obtained from a reaction, but they enormously increase the efficiency with which it is obtained.
7. Enzymes are highly specific and generally catalyse only one reaction.
8. Sensitive to temperature:- As enzymes are usually protein in nature so rise in temperature causes coagulation and denaturation with consecutive loss of their activity.
9. Electrolyte effect on their colliodal nature —loss of catalytic activity i.e. inhibition.
10. Ultraviolet rays destroy the enzymes generally.

From the above characteristics we can see that enzymes resemble the catalysts in almost all of their characteristics and they have a few of their own.

The modern concept of reaction is not that of compounds reacting with compounds but it is that of molecules reacting with molecules and atoms with atoms. Hence, the latest definition of an enzyme is as follows:—

Enzymes are substances which lower the energy of activation required by a molecule to proceed in a particular reaction."

Energy of activation is the energy required by the molecules or atoms for their dissociation and combination.

If we take the example of sucrose decomposition then we see that it requires about 25,560 calories mol. Of sugar as energy of activation to decompose into glucose and fructose.

Sucrose = Glucose Fructose. But when enzyme sucrose is added to the reaction then we see that energy of activation is lowered to 9,000 calorices/mol. of sugar. It means that

approximately 16,500 calories/mol. of sugar are spared in case of enzymatic dissociation of sucrose, as compared with its acatalytic dissociation.

Many properties of the enzymes can be attributed to their protein structure e.g. enzymes are inactivated by all agents which denature the porteins. Apart from their enzymatic activity there is no criterion by which enzymes can be distinguished from the proteins.

Many enzymes catalyse reactions of their substrates, (Substance whose decomposition or combination is being effected by the enzymes), only in the presence of a particular non-portein compound called a co-enzyme or a prosthetic group. Unless both enzyme and co-enzyme are present, no catalysis takes place. Enzymes requiring a co-enzyme for their activity are called apo-enzymes and an apo-enzyme alongwith its co-enzyme is called a holo-enzyme.

Types of reactions which frequently require holo-enzymes are group transfer reactions. isomerization reactions, oxidation-reduction and reactions resulting in the formation of co-valent bonds. In contrast lytic reactions including hydrolytic reactions such as those catalysed by the enzymes of digestive tract are not known to require holo-enzymes.

The vitamin B complex group Thaimine, Ribolflavin, Niacinic and Pantothenic acid, Biotin, Pyridoxine, Folic acid, Folinic acid, Cyanocobalamines, Choline, Para-amino-benzonic acid and Inositol, all act as co-enzymes. Out of all these thiamine, Riboflavin, Niacinic acid (Nicotinic acid), Pyridoxine are more important co-enzymes. The whole group is water soluble. Fat soluble vitamin, lipoic acid is also an important co-enzyme.

Certain enzymes may exist in the body with same catalytic activity but immunologically, electrophoretically and chemically distinguishable in two or more forms. Such enzymes called as iso-enzymes or simply isozymes e.g., human blood plasma contains at least five isozymes of lactic dehydrogense, all of whihc can readily be separated by electrophoresis.

**Nomeclature of Enzymes :**

Naming the enzymes is a big problem and it has baffled the scientist for a long time.

Previously the enzymes were named by adding affise "ase" to the name of their substrate, e.g., enzyme hydrolysing lectose was called lactase, that hydrolysing urea was terned urease, etc., etc. Not infrequently the name of the reaction catalysed by the enzyme was also used in place of the name of the substrate e.g. dehydrogenase, decarobozylase oxidase, reductase, etc. The names were given to the enzymes controlling dehydrogenation, decarboxylation, oxidation, reduction, etc., respectively. These are not one enzyme but they are groups of enzymes controlling that type of the reaction; by simply adding the above given names at the end of the name of the substrate, the name of the enzyme can be found.

This was a lengthy procedure and confusing one also when a very large number of enzymes are to be studied. Therefore the Internation Union of Biochemistry appointed an "Enzyme Commission". It came up with the suggestion that instead of using names, the enzymes should be referred to with code numbers. They designated groups of enzymes as number 1, 2, 3 and so on, and then there were subgroups and finally the individual members designated similaiy,e. g., if we want to express that the coversion of lactic acid to pyruvic acid is catalysed by lactic dehydrogenase then instead of writing lactic dehydrogenase we will write i.i.i. according this system.

The first I means that this enzyme belongs to the group of enzymes code numbered 1,i.e., the group called oxido-reductase.

The second 1 means that this enzyme belongs to the subgroup that includes the alcohal dehydrogenase. The third 1 means that it is that alcohol dehydrogenase which has NAD (Niacinamide ademine dinucleotide) or NADP (Niacinamide adenine dinuclaeotide phosphate) as its co-enzyme and hydrogen acceptor.

Code numbers of a few enzymes are given below:

| Enzyme | Code Number |
|---|---|
| Xanthine oxidase .. | 1.2.3. |
| Acctylcholine transferase .... | 2.1.3. |
| Nucleosidase .. | 3.2.2. |
| Pyruvate decarboxylase .. | 4.1.1. |
| Ribulose 5. P. epimeraso .. | 5.1.3. |
| Peptide synthetase .. | 6.3.2. |

Usually we have group, sub group and then individual members but sometimes sub-group is followed by a sub-sub-group, in that case the third member is for the sub-sub-group, and the fourth digit indicates the individual number.

**Enzyme Specificity :**

Enzymes are even more specific than the inorganic catalysis. They generally catalyse only one reaction and only a minor change in the structure, even when it is only a stereo chemical one, inhibits their action, e.g., maltose is hydrolysed to gulocose molecules by maltase.

Maltase is an *x* (alpha) glucosidase and hence will only act on *a*(alpha) glucosides. If the *a*(alpha) glucoside is replaced by *B* (beta) glucoside then maltase will not be able to hydrolyse it.

Similarly urease, arginase, lactase, sucrase can only hydrolyse urea, arginine, lactose and sucrose respectively. The enzymes have no action whatsoever on compounds which are very closely related to their substrates even.

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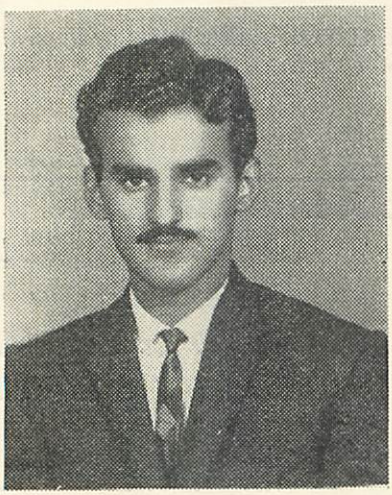
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# INSOMNIA

SLEEP is a great gift from nature. This is a physiological phenomenon but like several other physicological processes the exact mechanism of sleep is not yet clearly understood.

In clinical practice several disorders of sleep may be met with. It may be increased, diminised or disturbed. The commonest of all these is diminution in quantity of sleep. It is called Insomnia and will be discussed here.



MAZHAR MUNIR TABASSUM
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**Causes of Insomnia :**

The causes of Insomnia may be divided into two groups:—

(a) Psychical causes.

(b) Organic causes.

**[a] Psychical Causes :**

There may be three subgroups in it.

(*i*) *Anxiety:* It may be due to several factors like domestic and financial difficulties, love affairs, examinations, etc.

**[2] Habit of Thinking :**

Some people are in the habit of thinking something all the times. It may cause insomnia. For example, thinking of past events and visualising the scenes, rehearsal for conversation etc., may cause Insomina. In young adults thinking about love affairs, making plans and their implimentations may cause lack of sleep. In elderly businessmen, the business worries are commonest factors to cause insomnia.

**[3] Obsession :**

A patient has, sometimes, an idea that he cannot sleep although there is no organic lesion. Such patients need psychotherapy.

**[b] Oragnic Causes :**

These causes are less common than the psychological causes. Sleeplessness may result from some pain in the body or from dyspnoea. Some febrile conditions may cause insomnia. Organic brain diseases like cerebral arteriosclerosis may cause insomnia. In early stages of uraemia and alcoholism it may be present.

**(*c*) Insomnia in Obst and Gynae, patients:**

Sleeplessness may occur in pregnancy as a part of anxiety neurosis. This may be due to physical discomfort, heart burn or backache etc.

Sleeplessness may occur in perpuerium which may be due to after pains, engorged breasts, sometimes due to haemorrhoids.

Sometimes insomnia occurs as a warning signs of incoming mental illness.

**[d] Insomnia in Infancy and Childhood:**

Refusal or failure to sleep in infancy and childhood is almost always a behaviour problem due to mismanagement or refusing the child's request.

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In older children school worries ... times casual factors.

**Treatment of Insomnia :**

The most important factor in the treatment is to find the cause, remove it and prevent its recurrence. Some patients think that sleeplessness will cause insanity and taking of hypnotics will cause addition. Such patients require firm reassurance.

**Physical treatment :**

This may be given in slight cases and consists of comfort, quiet atmosphere, warmth, and hot baths followed by massage. Over fatigue, emotional, intellectual and sexual stress should be avoided. These measures will be sufficient to restore normal sleep in ordinary psychical cases.

**Hypnotics :**

In severe cases where insomnia is becoming troublesome and incapaciating the patient, the use of hypnotics is indicated. The following principles should be observed when prescribing a hypnotic.

(a) The patient should be explained that it is better to take hypnotic than to remain sleepless.

(2) The drug should be prescribed for a stated initial period e.g. for a week or a fortnight.

(3) The time at which the drug is to be taken should be clearly told to the patient.

(4) Adequate doses should be prescribed.

...otics are of the following four types:—

(a) Long acting:- e.g. Barbitone, Phenobarbitone,.

(b) Intermediate Acting:- e.g. Amylobarbitone, etc.

(c) Short Acting:- e.g. Cyclobarbitone, Pentobarbitone, etc.

(d) Ultra short Acting:- e.g. Hexabarbitone, etc.

When a patient is having difficulty in falling to sleep, a short acting barbitone should be given, when a patient wakes up during the night, a long acting barbturate should be given.

When mental stress is a cause of sleeplessness "Amylobarbitone" may be given in a single daily dose of 50 mg. upto maximum dose of 20 mg. or Butobarbititone in a dose of 100-200 mg is also useful.

When pain is a cause, Tab. Codeine 1-2 G. or Paracetamol in 0.5-1 G. dosage may be given. In severe pains Methadone in a dose of 5-10 mgs. may be used.

In restlessness chlorpromazine 25-50 mgs. orally with Phenobarbitone 60-200 I/M may be given.

When Insomnia is due to old age, Alcohol (Whisky, Brandy) I oz. dose may be given.

# NEOPLASMS [Cancer]

By

SYED MANSOOR HUSSAIN

*1st Year M.B.,B.S.*

NEOPLASM is a malignant growth of body cells. One of the great mysteries of human pathology is the etiology and nature of cancer. There is a great variety of neoplasms of both plants and animals and there is a variety of causative agents. Whether any of these agents is a living organism is still unknown with regard to human neoplams, but several neoplasms of animals are due to viruses. Some plant neoplasms e.g. crowngall are due to bacteria, some e.g. wound tumour are due to viruses. Whether, by studies of the neoplasm of animals or plants, the secret of human neoplasms may eventually be revealed, none can say. There are many suggestive analogies between the infectious animals and vegetable neoplasms on the one hand and human neoplasms on the other but the actual relationship, if any, is still obscure.

It is definitely known, that in cancer, body cells are mutated by certain agent, hence, they become abnormal in the sense that their metabolic activities are increased with consequence a rapid division of cancer cells take place. They act as foreign to the tissue or body of origin; are no longer held in check by the normal growth regulating hormones etc. They grow independently, often without regard for normal physiological limitations, spreading and growing everywhere, each tumour cell a malignant parasite. Sometimes they grow slowly and within definite bounds—Benign tumour.

**Neoplasms, Viruses and Mutation :**

Let us see, what are the causative agents of neoplasms. The cause of human malignant neoplasm is unknown. There may be various causative agents.

It is observed that prolonged mechanical irritation or injury usually results in neoplasm. In the continued presence of irriation and injurious agents it is readily conceivable that the cell of the new growth may be altered, (because of irritation and injury cells are killed, new growth tends to replace them, newly formed cells may be changed by some neoplastic viral agent) So that they mutate, and become malignant independently growing cells. What are these irritating and injurious agents?

**Carcinogens :**

These irritating agents are x-rays, ultraviolet and other irradiations, certain coal-tar derivaties-methyl cholan thrence etc., mustard oil, petroleum oils, tarpitch, certain aromatic amines etc. All these agents, on application induce neoplasm. These substances are called carcinogens or carcinogenic. For instance, if coal tar is applied on a rat, after three months, he develops sacrcoma-micenoplasm! How these agents act on living cells is not well established but one striking effect of all of them is the production of mutation! Such agents are not only carcinogenic but mutagenic also.

How carcinogens act as mutagenic? Are the organisms responsible for it? Yes, there is a possibility that virus may act as carcinogonic by bringing mutation. How virus acts as mutagenic? In order to understand pretty clearly the mutagenic nature of virus, let us have a brief discussion.

**Virgology :**

Some general properties of virus:—

Very small in size, so minute as to make bacteria seem enormous by comparison. They are obligate parasites i.e. inability to propagate outsidde living cells. Because they are obligate parasites, no saprophytic viruses are known. One of the most distinctive differential properties of all virsuses is that of host specificity i.e. under natural conditions virus can infect only one single species of animal or plant, for example polio virus infects man, monkey but not cats.

**Chemistry and Physics of Viruses :**

Virus appears to consist of a central core of nucleic acid surrounded by protein coating.

They both loosely combine to form nucleoprotein. No Carbobyydrates or fats are

present. They are non-cellular: Nucleoprotein is in fact the genetic material. Viruses appear to have no metabolism. They are speck of genetic material.

The hydrolysis of nucleoproteins shows that they consist of:

Protein
Nuclicacid
Nuclicacid further consists of:
Phosphoric acid
Carbohydrate may be and—ribose or
d-2-deoxyribose
2 purinebases—
adenine
Quanine
2 pyrimidinebases
Cytosine
Uracil (RNA)
or
Thymine (DNA)

The pyrimidine base Uracil is present in RNA and Thymine in DNA. The arrangement of above constiteunts of nucleoprotein is complicated and lengty. It is important to note that in plant viruses RNA is present while animal viruses have any of the two-DNA or RNA, Phages have DNA.

**Bacteriophage or phages:**

Viruses are of different types, but bacteriophage is one which is apart from our discussion.

Bacteriophages or simply phages are those viruses which infect bacteria. The mode of action of a virus upon a bateria is discussed briefly as follows:—

Bacteriophage is sperm like, its tail contains at its tip a special mosaic of molecules, this mosaic of molecules corresponds to a point on the bacteria called the receptor (the relation is more or less similar to that of lock and key). The phage attaches itself with its tail to the bacteria. The core of the virus is passed into the bacteria. The DNA ofphage enters the genetic government of the cell. Phage DNA takes over the synthetic mechanism and causes them to synthestic at first phage nuclic acid and then phage protein coatings. The period between the first attachment of virus to bacteria to the production of phageprotein coating is known as latent period.

Phage nucleic acid combines with protein coatings to form phage particles, which ultimately rupture the bacterial cell, this phenomenon of rupture of bacterial cell is called cell lysis or simply lysis. The phages which bring about lysis are called vircelent phages.

Sometimes it happens so that the phage does not produce lys is but occupies some position in its genetic material as a gene. It behaves just like a gene, it duplicates itself and thus transferred to new generation. Such a phage is called prophage or latent phage or symbiolicphage. A bacterial cell in which prophage exists is called lysogenic. The behaviour of prophage may result in mutation Viruses which attack cells and remain there as latent phage or prophage are called provirus. So we see that how virus can act as mutagenic.

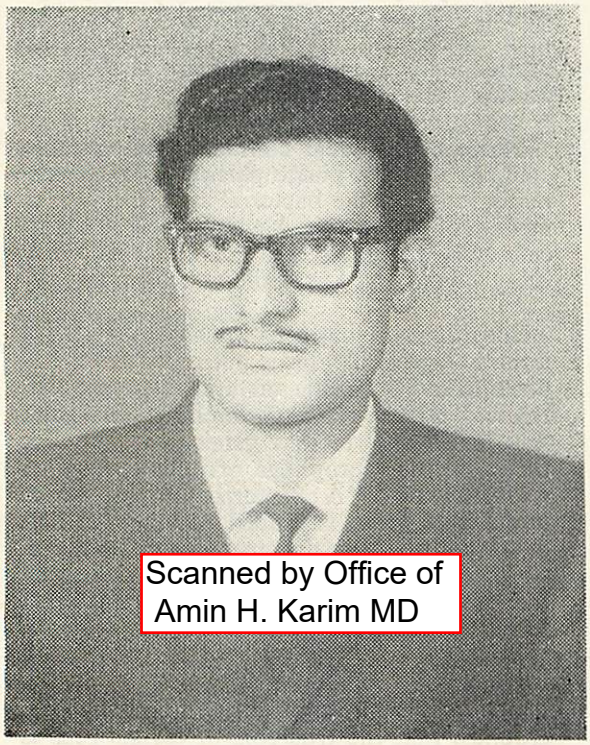
It has been suggested, on reasonable grounds, that the true role of carcinogens is to induce cancer viruses which may like phage in lysogenic bacteria, be latent in the tissue cells of certain people. Anyhow it is only a suggestion and should not be taken as an established fact.

Any reader who solves this problem will be recommended for the Noble Prize.

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# Clinico-Pathological Quiz


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By

NASIR UDDIN KHOKHAR

*Final Year* M.B.,B.S.,

**—Each Question carries one mark—**

| | | | | |
|---|---|---|---|---|
| TARGET | 20 | — | Above | Excellent |
| | 16 | — | 19 — | Good |
| | 12 | — | 15 — | Fair |
| | Below | — | 12 — | Bad. |

(1) The Commonest tumour that occurs in the UTERUS is:—

(*a*) Fibroid Tumour (Fibromyoma)
(*b*) Carcinoma of Body
(*c*) Carcinoma of Cervix.
(*d*) Sarcoma.
(*e*) None of them.

(2) In Inflammation of Pericardium a haemorrhagic effusion suggests:—

(*a*) Rheumatic Pericarditis.
(*b*) Malignant Pericarditis.
(*c*) Uraemic Pericarditis.
(*d*) Viral Pericarditis.
(*e*) None of them.

(3) 1. Pinpoint and fixed pupil. 2. Pyrexia and 3. Paralysis are characteristic feature of:—

(*a*) Middle meningeal haemorrhage.
(*b*) Subdural Haemorrhage.
(*c*) Pontine Haemorrhage.
(*d*) Compression of spinal cord.
(*e*) None of them.

(4) The bones surrounding the Foramen magnum become in-vaginated into the cranial cavity causing deformity of intracranial structures, associated with congenital anomaly of cervical vertebrae. The condition is:—

(*a*) Gilles de la Tourette's syndrome.
(*b*) Klippel-Feil syndrome.
(*c*) Gronblad-Strandberg syndrome.
(*d*) Peutz-Jeghers syndrome.
(*e*) None of them.

(5) The anterior curvature of spine is increased in Lumber region, the condition is:—

(*a*) Kyphosis.
(*b*) Scoliosis.
(*c*) Lordosis.
(*d*) Spondylolisthesis.
(*e*) None of them.

(6) Oral contraceptives have been shown to cause :—

(*a*) Thromboembolism.
(*b*) Nephrotoxic reactions.
(*c*) Urinary retention.
(*d*) A condition closely simulating Miculicz disease.
(*e*) None of them.

(7) The most common complication of Acute Tonsillitis is:—
(*a*) Peritonsillar abscess.
(*b*) Abscess within the Tonsil.
(*c*) Laryngeal oedema.
(*d*) Crigler-Najjar Syndrome.
(*e*) None of them.

(8) VAGINAL THRUSH is due to:—
(*a*) Candida albicans.
(*b*) Virus infection.
(*c*) Trichomonas vaginalis.
(*d*) Acute gonorrhoea.
(*e*) None of them.

(9) A severe Iron Deficiency Aanemia is caused by:—
(*a*) Ankylostoma duodenale.
(*b*) Diphylobothrium latum.
(*c*) Fasciloa hepatica.
(*d*) Trichuris trichuria.
(*e*) None of them.

(10) Mallory-Weiss syndrome means:—
(*a*) Haemetemesis due to tears at the lower end of the oesophagus
(*b*) Haemoptysis associated with glomerulonephritis and haemosiderosis.
(*c*) Accumulation of Homogentistic acid in the tissue.
(*d*) Presence of Beta-hydroxybutyric acid in the urine.
(*e*) None of them.

(11) Phenacetin has been condemned for its:-
(*a*) Ototoxicity
(*b*) Nephrotoxicity.
(*c*) Hepatotoxicity.
(*d*) Neurotoxicity.
(*e*) None of them.

(12) The patient is a healthy looking active man, who for years has had attacks for Hyperacidity after overwork, worry or indigestible food, he develops pain 3—4 hours after food or in the night: Relieved by taking food or Antacids. The disease is likely to be:—
(*a*) Chronic gastric ulcer.
(*b*) Chronic appendicitis.
(*c*) Chronic calculous cholcecystitis.
(*d*) Chronic duodenal ulcer.
(*e*) None of them.

(13) Intention tremor (2) Nystagmus (3) Scanning speech, constitute:—
(*a*) Virchow's Triad.
(*b*) Charcot's Triad.
(*c*) Saint's Triad.
(*d*) Stein-Leventhal syndrome.
(*e*) None of them.

(14) HIPPOCARATES (460-370 B.C.) is universally known as:—
(*a*) Father of Pharmacy.
(*b*) Father of Medicine.
(*c*) Father of Optics.
(*d*) Father of anti-septic surgery.

(15) Cycloserine is used in chemotherapy of Tuberculosis. It belongs to group of drugs:—
(*a*) Antibiotics.
(*b*) Sulpha derivatives.
(*c*) Thiourea Compounds.
(*d*) Salicylates.
(*e*) None of above.

(16) The patients of diabetis mellitis in LATER stages often suffer from:—
(*a*) Haemorrhagic telangiectasis.
(*b*) Myocardial infarction.
(*c*) Thrombotic thrombocytopenic purpura.
(*d*) Intra cranial aneurysms.
(*e*) None of them.

(17) Erythrocyte sedimentiaton rate about 100 mm.in first hour is suggestive of:—
(*a*) Oral contraceptive administration.
(*b*) Carcinoma of gut.
(*c*) Wolff-Parkinson-White syndrome.
(*d*) Vitamin Deficency.
(*e*) None of them.

(18) Which of the following statements is CORRECT?
(*a*) SGOT level in blood is raised in myocardial infarction.
(*b*) Tremor in hand are diagnostic of Thyrotoxicosis.

(*c*) Trasylol has a thrombolytic action and has been used in treatment of intravascular thrombosis.

(*d*) In Pernicious anemia combined therapy with Folic acid and B12 gives best results.

(*e*) None of them.

(19) Which of the following statements is INCORRECT?

(*a*) Ergotamin is to be used with care in patients with Peripheral vascular disease.

(*b*) Plummer—vinson syndrome means combination of:—
Anaemia, Dysphagia, Glossitis.

(*c*) 50 per cent cases of duodenal ulcer become malignant.

(*d*) Headache, vomitting, papilloedema means Intra cranial hypertension.

(*e*) None of them.

(20) Which of the following statements is CORRECT?

(*a*) A newer drug Amantadine has been shown to be effective in Parkinsonism.

(*b*) Subacute combined degeneration of spinal cord is usually due to deficiency to RIBOFLAVIN (Vitamin B2)

(*c*) TETANY usually occurs due to Hypothyroidism.

(*d*) BILLROTH I means gastro-jejunostomy.

(*e*) None of them.

(21) Which of the following statements is INCORRECT?

(*a*) GOITRE means an enlargement of thyroid without any structural or functional change.

(*b*) Piprazine is used in treatment of ASCARIASIS.

(*c*) The gall stones are commonly mixed cholestrol and Pigment stones.

(*d*) LERICH'S syndrome means obstruction of inferior vena cava.

(*e*) None of them.

(22) Which of the following statements is CORRECT?

(*a*) BERI BERI results from the prolonged consumption of a diet devoid of fresh fruits.

(*b*) Blackwater fever is a result of severe infection by shistosoma haematobeum.

(*c*) Gout is characterised by degeneration of articular cartilage.

(*d*) Tape worm infestation should be treated with VIRRYNIUM.

(*e*) None of them.

(23) Which of the following statements is INCORRECT?

(*a*) Hyperthyroidism is more common in females.

(*b*) LACTULOSE has been used in the management of hepatic coma.

(*c*) Myxoedema should be differentiated from obesity.

(*d*) Phaeochromocytoma means a tumour of adreanal cortex.

(*e*) None of them.

(24) All but one of the following statements are CORRECT.
Indicate the exception:—

(*a*) Athetosis is a disorder of extrapyramidal system.

(*b*) In osteoporosis deminiralization of bone occurs.

(*c*) Sarcoidosis is caused by a Gram positive bacillus.

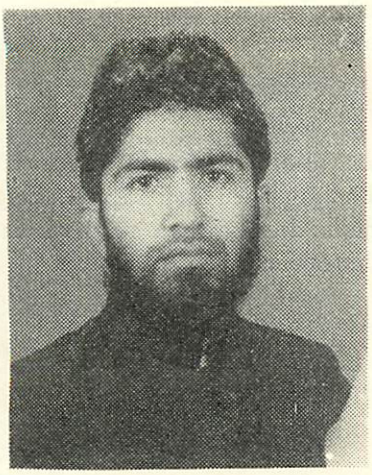
(*d*) Clofibrate and cholestyramine are usedful in atherosclerosis.

**Answers :**

| | | | |
|---|---|---|---|
| (1) | *a* | (2) | *b* |
| (3) | *c* | (4) | b |
| (5) | *c* | (6) | *a* |
| (7) | *a* | (8) | *a* |
| (9) | *a* | (10) | a |
| (11) | *b* | (12) | *d* |
| (13) | *b* | (14) | *b* |
| (15) | *a* | (16) | *b* |
| (17) | *e* | (18) | *a* |
| (19) | *c* | (20) | *a* |
| (21) | *d* | (22) | *e* |
| (23) | *d* | (24) | *c* |

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# NATURE OF ELECTROENCEPHALOGRAM DURING SLEEP!



ABDUL HAKEEM
*2nd Year M.B.,B.S.*

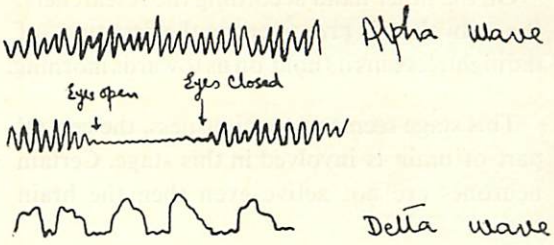
INfact it is a strange, profoundly mysterious process of the body and mind. The pace of current discory by the sleep scientist is startling.

The process by which the electrical activities in the brain noted is known as Electroencephalography, Synchronous activity of literally thousands or even millions of neurons must take place for a wave to be recorded from the scalp.

*Changes during night's Jaurney*: Sleep is considered as the black blanket of darkness, consisting of dreams. During night sleep a person drifts down and up through different stages of conciousness can be recorded in the form of waves.

While the subject is awake shows the electrical activity, the type of wave obtained is given the name Alpha. It occurs at frequency between 8 to 13/Sec. It disappear during sleep, the state of serene relexation and devoid of concentrated thought.

In this early stage of sleep person may be awakened for a moment by a sudden spasm that causes his body to jerk. This in the myoclonic jerk found in normal man sleep, *Deep Sleep*. It actually consists of Four stages. In the earlyar stage the pattern of sleepers wave is pinched, irregular and rapidly changing.




His muscles are relaxing, heart rate is slowing down.

In the second stage the pattern of wave resemble the spindle and his eyes moves under cover of lids.

3rd stage of the pattern of waves, in this stage can be reconsidered by large and slow waves occuring about once a second and Heartrate decreases, temp decreases, B. P. decreases and muscles relax es more.

After about 20 to 30 minutes the stage reaches to deep state i.e. stage IV revealing slow and large waves known as Delta waves. Now the person can not be awakened easily.

*The movement of eye:* The next stage is though succeded by 4th stage after about 90 minutes having brain waves of lightest sleep resembling those of awaking but not easy to awaken, it is the special variety of stage one reffered to as R.E.M. stage. In this stage he remembers dreaming in vivid detail, after about an hour, drifts to the longer R.E.M. It has been noted that each night entire cycle is repeated about 4—5 times.

*Mysteries of Oblivion.* In this discussion Two stages are of particular interest i.e. R.E.M. and Delta.

The rapid eye moving stage is the variety of stage I. Neurologists studing cats have found, unusual activity during R.E.M. sleep in the brain centres associated the memory and emotion.

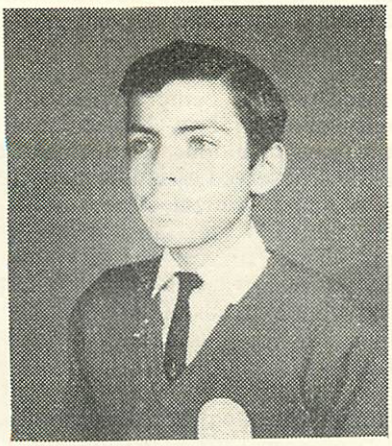
On the other hand according the researchers, the delta sleep is prominent in the first part of the night, lessons its hold on us towards morning.

This stage seems unconciousness, the central part of brain is involved in this stage. Certain neurones are not active even then the brain is not inactive. It is related to certain disorders as in a time of bed wetting, night terrors may cause a child a to shriek and continue screaming for his mother even when seated on her lap and clasped in her arms but on awakning remember only frihgt but not dream.

Another disorder of this stage is the somnamb ulisits begin their sleep walking and having more dreams than we have in our mind lie burried in this deep slumber.

The Chairman of Magazine Section and the Editor & Magazine Secretary are highly obliged and grateful to Dr. Liaqat Hayat of **" The Clinical Laboratory,"** 47, A. Haroon Road Karachi-3, for his guidance and generous donation towards the publication of this **"DOWLITE"** "Silver Jubilee Edition."

# Transfusion of Blood : Its Substitutes



AHMED SIBTAIN JILANI
*IInd Year M.B.,B.S.*

BLOOD transfusion is a medical process which is carried out due to loss of blood in great quantity and in severe cases of anaemia. In this process blood is transferred from the donor to the receiver, both having the same blood group, otherwise it will lead to the destruction of Red blood cells. However, during emergencies, when the blood of the same group as that of the patient is not available, we make use of the substitutes of blood.

There is of course, no substitute for blood since no preparation so far known, has the ability inherent in haemoglobin, for the carriage of Oxygen or the presence of red blood cells with their important space occupying property and other specialized functions. Substitute can therefore, only sustain the blood volume by their presence and their osmotic pressure.

Criteria Substitutes of blood have been choronon the basis of the following criteria:-

1. They should not leave the circulation rapidly, but should remain until replaced by normal plasma proteins.
2. They should have the same viscosity and colloid osmotic effect as blood.
3. They should be non-toxic, non-pyeretic, non-antigenic, should not interfere with blood clotting or grouping, be easily sterilized and should not be stored in the body for long periods.

It is seen that some of the substitutes have nearly matched these criteria and has found clinical usefulness in replacing blood. They are as follows:—

**Palasma :**

This in its pure form is blood without cells and would therefore replace most of the functions of the blood, with a notable exception of Oxygen carriage. As such however, it is not easily available and we depend upon reconstituted human plasma which has been obtained by acid-citrate-dextrose preserved bank blood. This is of proven value in the treatment of acute deficit in plasma as seen in burns, peritonitis and crush injuries.

Plasma has a minor defect of containing excess of sodium, and being irritative to peripheral veing. Another major defect is the possibility of its contamination with the virus of infective hepatitis. This was especially feared with pooled plasma, which came from donors and was then lyophilised. This fear was minimized by Allen in 1954, who found out that the virus became inactive when the plasma was stored for six months at room temperature, which was subsequently corroborated by Hoxworth and Haesber in 1956. Another way to prevent virus hepatitis is the use of crude albumin solution containing 80-90% albumin.

Apart from the risk of virus infection, certain biochemical reaction may follow the use of plasma. If the plasma has been taken from old blood, the potassium level will be high and large infusions of such high concentrations rapidly administered in a shock-patient are potentially dangerous. Despite these dangers, plasma is reasonably safe as a blood substitute.

**Concentrated Serum Albumin :**

I is a virus free plasma fraction, and can be easily sterilized. After infusion it causes further expansion of plasma due to the raised osmotic pressure, drawing in water and salts from extravascular to intravascular space. Its usefulness is limited by short supply and high cost.

**Intra-vascular colloids :**

These substances by virtue of their colloid osmotic pressure hold water and salts in the blood stream, producing a temporary increase in volume equal to that infused. The effective osmotic pressure is established only when colloids of size approximately that of human albumin are present (i.e. about 50,000 M.W.) Mollecules smaller than this size are lost quickly through the capillaries, thus reducing the therapeutic effect of solution while molecules larger than that are associated with damage to the tissues and many interfere with blood grouping and cross matching.

**Dextrans :**

Dxtrans has been found to be one of the best long lasting substitutes of blood available today, and is of the greatest importance when mass application is necessary as in war or multiple road accidents. These are polysaccharides of varying molecular weights. Their biochemical and physical properties are dependant upon the average molecular weight, its distribution and molecular structure.

A serious defect in the large infusion of clinical dextran is the risk of coagulation, possibly due to the dilution of clotting factor. When larger transfusion of dextran is required alternate fresh blood and dextran should be considered. This would prevent erythrocytic dilution.

Research work is being carried out on the possibility of using Low Molecular dextrans as a substitute of blood. Gruber and colleagues in 1964 observed a significant increase in plasma volume present three hours after infusion of L.M.W. dextrans, or low-viscosity dextrans. They suggest that it could start replacement therapy as it not only improves blood flow but expands blood volume. However clinical dextran has a better effect as blood substitute.

Although, till now, the ideal blood substitue has not been found, plasma and clinical dextrans are substances of proven merit. They may be used safely provided the dangers mentioned above are known and anticipated.

In view of the intensive research work going on for a better replacement of blood, it is quite possible that in the near future, other solutions may appear which may satisfy the criteria of acceptability to a greater extent, but the fact remains that none of them could ever replace the true functions of the Red Blood Cells, and therefore be as effective as blood itself.


**ATARAX**

**is a safe tranqulizar. (Hydroxazine HCl.)**

*In Cardiology* :—

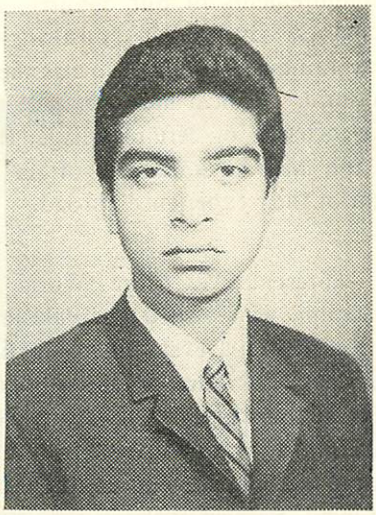
★ Acute Arrhythmias.
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★ Cardiac disorders of Nervous origin.
★ Angina pectoris

*Supplied in:*—
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25 mg. „ „ „ 25 tablets.
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**PHARMACEUTICAL DIVISION**

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# Campaign Against Malaria in the Rural Sectors of Pakistan



MOHD AZMAT HUSSAIN
*2nd Year M. B., B. S.*

LIKE many other developing countries, sufficient medical aid to rural and more undeveloped areas is one of the major problems in Pakistan. Practically more than 80 percent of total population of our country live in remote rural areas. But, unfortunately, most of the Govt. servants—both of higher and lower classes, most of the educational institutions—specially medical institutions, trade and industry centres are situated in comfortable, luxurious towns. For this reason, all rural development programmes of the Government and also the donating mood of agents interested in amelioration of human sufferings, have come to an ultimate stop, as the mentality of the 'top-class' people always back the pleasure-offering towns, neglecting the dark and dismal villages.

Every year, the people of the rural areas of both wings of Pakistan suffer heavily from some infections of which malaria is the worst, which arrests the nation's economy strongly by taking the life of some 250,000 people a year. During the last 7 years evidence in Pakistan, it has been shown that instead of a marked fighting against malaria—the deadliest enemy of this tropical country, there has not been a satisfactory decrease in the death-percentage, quite obviously due to the one-sided view of the "side and surroundings," which is against the rural life.

Nearly about 20 millions of our people suffer from malaria annually which incapacitate them for more than a week hindering their productive energy for 2/3 months. This is a staggering loss to a rising nation like ours, and the Govt. of Pakistan has designed a 14 years Malaria-Eradication Programme to save the nation at all costs. The Government has sanctioned Rs. 410 millions in the 3rd five year plan, assisted by W.H.O. and U.S.A.I.D. the organisation are also providing specialised training to the people to check this epidemic disease from East and West Pakistan.

In West Pakistan, the programme began in several districts, taking care of the rural and undeveloped areas, the entire province being divided into several 'malarial zones' having a million people in each.

In East Pakistan also, the programme has begun in the same manner. There the campaign has been successful in many towns, namely Dinajpur. where success is the most, yet the completely eradication programme has been interrupted due to heavy rain-fall and poor drainage system in the village areas, where water gathers in large quantities facilitating the breeding of that special type of infected mosquito which carries malaria; hence special notice must be paid to these undeveloped, watery areas.

Two centres for training of the anti-malaria personnel in the country have been opened in Lahore and Dacca. The progress report

of the personnel shows that the people protected from malaria is expected to excess 105 millions annually; and the Government is very much hopeful that Pakistan will be greed from this fatal infection by 1974 completely.

The announcement of the Government is 'ever welcome' but my opinion says, that the progress of eradication will be more accelerated if the authorities draw their kind attention to some other indispensable operations. They have to change the centre of gravity of the nation, i.e., their notion should be directed towards the poor and backward areas. The rural dwellers should be given free treatment; the blood samples should be tested patiently and systematically by suitable doctors. Besides the towns, there must be epidemic disease hospitals in every rural area. The hospitals must have a supply of adequate, upto-date medicine. Keeping in view all rural requirements of our country, most of the doctors of 'Govt-sponsoring-foreign-medical training", should take classified training in rural medical aids, so that, if made medical-incharge of certain village, they can enrich the medical conditions of the area in the light of their experience abroad.

The representatives from World Health Organisation, who visited the Pakistan Academy for Rural Development at Comilla, opined that Pakistan is showing burning progress in this respect. It is expected that in near future, super-active and enthusiastic Pakistanis will contribute more to the national development, passing through the process of eliminating this mighty enemy from all sectors—developed and undeveloped, specially from the rural zones of Pakistan.

---

Kissing : .. *The anatomical juxta position of two orbicularis oris muscles in the state of contraction.*

Library : .. *Thought in cold storage.*

Mosquito : .. *Skin diver.*

Parents : .. *People who bear infants, bore teenagers and board nemlyweds.*

Psychology : .. *The science that tells youwhat you already know, in words you can't understand.*

Psychiatrist: .. *A blind doctor in a pitch black basement looking for a black cat that isn't there.*

Smile : .. *A light in the window of a face which shows that the heart is at home.*

Spinster : .. *A woman who has been missed to long.*

Twin : .. *Wombmates.*

Wise Girl : .. *One who realizes that kissing not only spreads—germs—it lowers resistance.*

# The "Satelite" DNA

By

M. SHAHED OMAR

*3rd Year M. B., B. S.*

ANY flower can't be helped to be called anything but "flowers"; still all flowers can never be what some are. Be it the gorgeous or the vivid ones or the very serene and sober ones; never would they fail to display their charm. Be it the ones with the most rapturous and voluptous of odours or the ones so tranquil and sober; nevertheless would the odour enhance the charm and attraction. They would, on rounding up by leading to the same way—the eventuation and perpetuation of the race. Such is the way that the various families of DNA behave. All would be transcribed to RNA that information be conveyed and carriedout.

Investigations, that were to bear the fruit of the discovery of Nucleic Acids, were to be carried out by Friedrich Miescher (14), as early as the 1890s. It was only in the early 1940s that DNA was ascertained as a normal constituent of living cells (6,7). In the 1960s DNA, independent of nuclear DNA. was isolated from various cellular organelles and components. The mitochondria have their own DNA (8,15), transcribing far free from the nuclear DNA(8); so do have the chloroplasts (10) as evidenced from those from Acetabularia mediterranea. Recently, however, Dr. Eugene Bell reported another type of DNA—the informational DNA (1 DNA) that was suggested to have functions similar to the messanger RNA, thereby shattering the mRNA theory (1). The hypothesis has suffered a big shock when Fromson and Nemer provided evidence that 1-DNA was just an artefact produced during isolaction techniques (9). The last word is still awaited.

It was in 1964 that a dawn of surprise startled man when there were detected multiple copies of DNA of base sequences similar, in the nuclear chromatin. Evidence hailed from both the plant and the animal worlds. Now that isolation has been achieved in all higher species examined it forms about 10 to 12% DNA of genome sequestered in a chemically distinct fraction (16) but the extremes lie between 2% (ref. 16) and 80% ref. 5). A distinct buoyant density suggests a distinct nucleotide sequence (16). A very prompt rate of re-association on annealing idicates DNA segments of repeated sequences (4, 5, 12, 16). These repeated segments of DNA help to distinquish from bacterial DNA (17).

An imperfection of repetition is ascribed to what produced the amplified family (5). It is becoming increasingly clear that gene-amplification is not all that uncommon (16). The repetitive DNA 'Family' members resemble, the number of bases mounting from 50 to 2 million (5). The reasemblance suggests an evolution spread over a few million years—such neo-Darwinian concepts can be tagged with nothing but genetic advantage.

The number of DNA segments of similar base sequences in one of the cells is the Repetition Frequency. Calf cells have no frequency between 10 and 10,000; while roads, snails have none more than 10,000 members (5). The frequency 10,000 to 1 million appears to be popular with mammals (5). Multiplicities range, however, from $10^2$ to $10^6$ per genome (4). Compositions of satellite DNAs from a different species differ as widely as the relatie proportions of satellite DNA present (20).

The repetitive DNA, so baptized "Satellite" DNA, has been under study from mouse quarters. The mouse satellite DNA is 10% of all DNA (17) regardless of the site of cells analysed. Renaturation kinetics determine 106 copies per genome, and they are some 400 nucleotide pairs long (21). Renaturation kineties as determined by Henning and Walker (20), point to tandem repeats of identical sequences about 130 to 300 base pairs long and perhaps a family has sequences only about ten or fewer base pairs long. Mouse satellite DNA has the second fastest renaturation kinetics (4,12). Its localization has been indicated in centromers (12, 17) of chromosomes, nucleoli (12,18), dense chromatin fractions (22), dense chromatin of interphase nuclei (12) and distribution even through out the chromosome set (13). Localization of guinea pig satellite DNA has also been indicated in heterochromatin (23).

The wide distribution of repeated segments of DNA, its persistence through millions of springs of evolution and its speech in RNA language (5,11); it must either be important

for survival of organisms or have vital functions (5). The repetition of very few base sequences gravely limits its potential as a repository for information soecifying the structure of proteins (16). It surmises then that satellite DNA; or what some are structural genes while othor are templates for synthesis of repetitive RNA (23). It may be involved in the assembly of protein (as r-RNA) (ref. 2.), or be a regulatr ofgene action (3) or even serve as a transcrip tional stop (23).

The restricted and high reiterated base sequences of satellite DNA placed at centromeres has been suggested as the molecular basis of chromosome pairing between both homologous and non-homologous chromosome (16). Moreover, the association of satellite DNA with nucleoll and centromers seems related as can be surmised (16) from the not unoften association of centromeres and nucleoli. A role in the assembly of the mitotic spindle can be suggested (16). perhaps by effecting the polymerization of spindle protein or the attachement of the chromosomes to the spindle.

Britten and Kohne (5) have a proposal that satellite DNA may serve for specification of gene products. A resembling hypothesis has been independently put foreward by Sussman (19); every molecule of mRNA, at least in eukaryotic cells has at its 5-'hydroxyl end a set of redundant base sequences. The redundant bases are suggested to serve for the specification of the gene product that the transcribed RNA gets attached to its specific ribosome, to be translated into protein. The model aims at a qualitative and quantitiative regulation of mRNA translation.

The various pointers indicate a key role of "Satellite" DNA, but as to the where abouts of the role, it's as unclear as the beauty and charm of a bud green enough but which would soon blossom into a flower. The clouds are dark and the gust of problems is strong. Still one can treadon, though slowly. in the short timed flashes of lightening. When all does clear up, we are sure to have a bright sunny day, the sky so vivid and the breeze so exhilirating and exotic. Ah! such an occasion would be for all to enjoy. May it be so very early. Amen.

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# Memoirs of a Medico

By

TAHIR HUSSAIN

*Final Year M. B., B. S.*

THE time is too slow, yet the time is too fast. It is slow as the pain creeping through your body and soul doesn't end anywhere. And simultaneously, it is too fast as an era of life approaches its end, a chapter is about to close down. A period that was so brief and sharp, pinching and perturbing. The ever-haunting memories of this Yum Yum tree, the memories of this haughty magnificent edifice—our dear institution, where the worthy teachers imparted to us the knowledge of human body, of its, diseases and their cures—shall make me linesome, frustrated dismayed and at times crestfallen amidst all the razzle and dazzle of life. Soon shall I bid vale to them all with no hope of return as time never returns.

How much did I feel ecstatic and jubilant the day I entered this magnanimous portal of learning, needs no mention to them who accompanied me, who preceded me or who would succede me. Because all of them are the "Privileged Ones" just as I am. Yet I am. Yet I can't just help pondering over. An academy which opens its portals to a few "Selected ones" only and rules out the over whelming majority, indeed more the admonish than to amuse, is often a cause of some Humanitarian Cardiospasm, though not so quite pathologically. A peep into those days when I was, like many others, striving to leave no stone unturned in embarking upon a new era of life which would set the whole trail of my entire future by attaining some flying colours of success at the I.Sc. Exam. conjures up in my timorous mind an appaling chronicle, Those were the days not only for the lovers of keats but even for those who never read him, to imbibe inspiration from what he has said:

The heights by great men reached and kept,
Were not attined by a sudden flight:
But they while their companions slept,
Were toilong upward in the night;

Consciously or without, we all did put it into practice. Success, however, accured but only to a few. Out of many the toiling mass, just a handfull could get access to D.M.C.—a cherished ambition of the teeming youths. It ought not to have been regretted if only all were treated at par. If justice were dispensated to all and sundry if the results were not rugged, if partisonship were not preferred to parity and dividend to duty. I remember when many were 'relishing' the restless vigils, my own cousin was enjoying the hotness of warm blankets in the cool of cold, bleak nights of mid-winter. I asked him. "Why don't you study? The exams. are over head." Casting a smile, he winked an eye and replied with pride. "Papa has terms with some guys in the office. Why oto worry." so, for him there was not any worry. Money makes the mare go but at whose cost? Some rejoice, others repine who suffers and who succedes? I got the answer only after getting into this medical college. D.M.C. guys, my brethern had not to say. 'Sour are the graps.' Barring a few exceptions. (who, I wonder how could procure admission) all are bourgeois by class and epicrureanists by cast of mind. How could they (including myself ) labour with their academic studies that always put them on tenter hooks and thus perpetually at logger heads with them. If they did not labour then how could they place their names in the merit list? Who can solve the conundrum? Perhaps "Papa"s who have "terms with some guys in the office." Atleast I can't. And if I do I am done for and ultimatly done with.

Anamolies, however, didn't vanish at the door-step of Dow. Irregularities dont' recognize any last thereshold. In an unjust and inexorable world vennins have no specific or particular abodes. They are wide spread. At their own disposal 'Hawks' have the whole cosmos while the 'Doves' have not a single refuge. Not Voltaire alone, every candide would say" Do you believe that men have always been liars, cheats, traitors, ingrates, brigands, idiots, thieves, scoundrels, gluttons, drun kards, misers, envious, ambitious, bloody minded, calcumniators debauchees, fanatics, hypocrites and fools, "Let me speak a little truth if not the whole truth or the gospel truth to do a little more than justice to the themes of my choice. As did justice M.R. Kayani—the beacon of truth under the dark ominous clouds, of frustration and falsehood, but, in his own words, more to amuse than to admonish.' Though I don't claim that out of sheer despair or defeat mine is the lone cry of protest, yet it is something that might bare scarcely the crux of our problem—the problems that inveigle our country and our nation as a whole, that reach beyond the limitation of time and space, that made accross the many and varied horizons which we imagine and aspire for as a formidable fortress, secured in which shall have we to fashion our destiny for an honourable place in the comity of nations. And it is the problem of partisanship and injustice, of nepotism and the lack of the sense of values and of responsibility. Above I have said in effect that these evils are wide spread and D. M. C. is no exception. 'Wither D.M.C.'—I would suggest to curtail alarming loss of the Nation's economy in view of how most of us become doctors. Ones thinking flowers out of ones own experience. So is mine. And my experience is that to attain M.B., B.S. degree. Most of us have never needed lectures or lecturers, teachers or teachings, demonstrators or demonstrations, laboratories or lab-activities, clinics or clinicians. What most of us needed most of the times was just to mug certain things by heart, bribe the lab-boys (who would do practicals for us) and then get through in supple or special supple or by some benevolent grace marks. Stripped of the maze of fabrication it is a truth radiant in its clarity as I, myself, have personally gone through these "instalments of success" gradually but ultimately to become doctors. I am embarrased and ashamed over this frank confession. But more than that I am flabberghasted at the nature and extent of an "academic injustice and injudiciousness" meted out to the youth in this way.

This is a portion of my memories relating to my stay in D.M.C., and for that matter, by token of the concurrence of events and conformity of incident and most of all, of the equal participation, it is the memoirs of any other Medico too. Whatever else can heap over this bulk—has a personal reservation not because of any substantial discrepency, for the substance is almost always the same but because it sounds a little different.

Condemned shall I by my own conscience if in the recollection of those unforgetable moments that I spent in D.M.C., which were as refreshing as the auroral breeze and as soothing as some noturnal nepenths, I make no mention of those dear ones who in an ephemeral company gave me an eternal joy—of love, loyalty and friendship. With their eximious company I felt completely entralled. No less bourgeois as they were but by heart proletarians so as to talk of the burning issues of vietnam, Laos combodia and Rhodesia viz-a-viz Washington and Moscow over a hot cup of delicious tea in the cozy, sophisticated interecont. But I mind not, for, not Tolstoy alone, aristocrates the world over have blazed the progressive trail since the last century. Again, a peep into those by gone days enthrills me with the tingling memory of 'some one' when my friends called (103' as a

matter of top-secret. If to think the Freudian style and to talk the way Schopenhaver did, is not obscenity then I would advert without reservation. That some one was my objectified desire of sex—a passionate illusion that I instinctively cherished, a mirage of life that I was consciously enamoured of in the dreary contrast of grim realities not only by token of instinct but also by reason of intellect—a reason that no Immanual Kant would ever justify. And perhaps this is the main theme of my choice and probably all of the above narration is no more than a prelude to this last episode. Because, have not the versatile minds of our preterity—from Socrates to Spinoza, from Bacon to Bertrand Russel and from Emerson to Iqbal affirmed 'Love' to be the most sound and ornamental basis for man kind. All the pillars of ethics would have been tumbled down had there been no love at all. Such a resilient, such a complex such a refined society as have we evolved over cencenturies would have scrumbled to dust had there been no vertiable sentimentality interlinking the wide spread humanity. How-ever, I think that it was a hell for me—who loved. It was a heaven for that 'someone'—who was loved. It was an act of beauty when restless vigils were spent in sombre adoration. It was a fellony of ruthlessness, so ugly, so beastly, when moments were passed in ulter induration, insusceptibility. But how long could any infernal vicissitude of dismay and dejection be sustained. I fell victim to a serenic sang froid which would after amount to emotional vacuity with the exception of debatably neurotic lapses as an occasional tear of compassion for the mentally enmashed as I was.

I have opened the secrets of my diary not for posterity to learn a lesson but to sort out the portion of hell and the portion of heaven in a strange, awful maddening world of "someones" nymphet love—who was to me more than a what Lolita meant to Vladimi Nobakov. The beastly and beautiful merged at one point and it is that borderline I would like to fix and feel I paid to do so ulterly. Why? And specially when it is in the words of Thomas Hood:

No blessed Leissure for love or hope
But only time for grief.

---

Abartion: *Hollywood appendicitis.*

Adam : .. *The only man in history who never looked at another women.*

Baby : *Mom and Pop Art.*

Baby : .. *An alimentary Canal with a loud voice at one end and no sense of responsibility at the other.*

Bachelor : .. *A rolling stone that has gathered no boss.*

Camel : .. *An animal that looks as if had been put together by a committee.*

Contraceptive : *A labour saving device.*

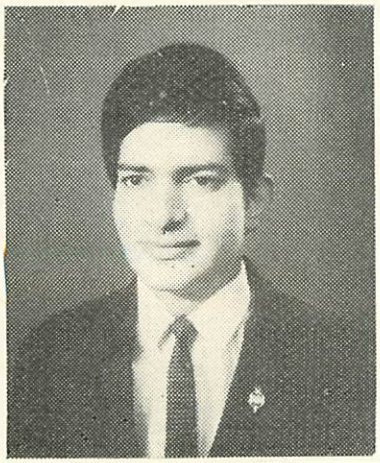
Galf : .. *A game where a ball* 1-1/2" *inch in diameter is placed on another ball* 8,000 *miles in diameter. The object is to strike the small ball but not the large one.*

Hollywood : .. *The one place where people live happily and marry ever after.*

Kiss : .. *Something that brings two people so close together, they can't see what's wrong with each other.*

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# CIGARETTE PUBLICITY



By ASIF SAEED

*Final Year M. B., B. S.*

RECENTLY there has been a lot said and written about the peril of smoking cigarettes with particular reference to its relationship to the causation of cancer. It has also been amply proved that pulmonary carcinoma is not the only scourge of smokers but conditions like coronary heart and lung diseases, abortion and birth of malformed babies are other likely accompaniments and complications. It is therefore, beyond the shadow of doubt, expedient for the Government to enforce the existing laws in respect of sale of tobacco products to minors and to prohibit smoking in confined public places. Furthermore, it has been recommended time and again that the manufacturers print the words "Health Hazard" on every packet of cigarettes in much the same fashion as it is done in the West. A complete ban of the 'Publicity and Promotion programmes' launched on T.V. and through other media has also been suggested.

Though an active campaigner against smoking I do not agree with the "advertising and publicity" idea in entirely. Leaving aside "Income from Publicity" issue, personally I am very skeptical about the sagacity and efficacy of such total ban.

Paradoxically enough, ridiculous as it may seem, there is no publicity of 'Betel Leaf' or 'Pan' on any of the advertising media yet millions of people are addicted to it. Needless to say it has been found that chewing 'Pan' is a harbinger to the causation of cancer and predisposes to all sorts of mouth and throat cancers as it contains some carcinogenic substances. I also wonder as to the psychological bearing of the words "Health Hazard" on the packets of cigarettes will have on the mind of smokers.

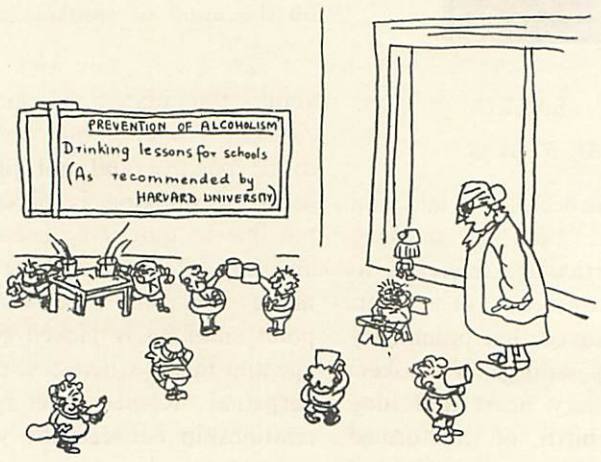
I am aware too and highly consternated about the obnoxious and toxic effects of cigarette smoking but our approach has got to be positive and not pragmatic. Once the habit of smoking is picked it is almost impossible to quit it or even to inhibit the urge and any effort to withdraw manifests "Abstinence Syndrome". Coming precisely to the point smoking is picked generally at a young age and this is where a check can be made and perpetual "Romeo-Juliet type" of catastrophic relationship between the young and cigarettes averted.

One distorted idea is that smoking cigarettes gives young men more poise, dignity, and executive looks. No smoking in company is virtually blasphemy and considered to be asocial and so our good old young man in sheer arrogance and coquetry are allured to, smoking. Many a young man have pre-conceived notions and are imbued with the idea (rather irrational) that women folk can be tantalized by smoking as it brands man as

"more manly". I wonder if the opposite sex will endorse the veracity of the statement.

I deem it extremely necessary and imperative to make a point about imparting regular "Health Education" lessons at secondary school and College level to make young man alive and conscious of their health, and, of course, about the hazards of smoking. Nothing can be more rewarding than holding lectures, symposia and showing films on the subject in question.

Man has been endowed by the Almighty with the faculty to discriminate good from bad and as such, given instructions, will not be attracted or fall prey so easily to mere publicity or will at least think twice before doing the same. He will eschew smoking and abstain like he does from so many other things he sees in the spectrum of publicity which he thinks are harmful, injurious and downright silly. Man would better learn lesson out of "Adam and the fruit" episode. We can not make experience conform to dogma. We must adapt action to experience.




If Willie cannot drink a pint of old ale without getting pickled he won't be ready for hard stuff next term

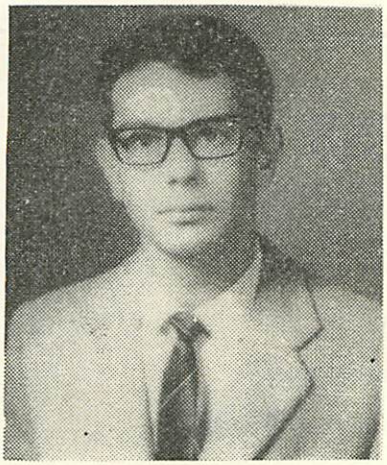
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# THE ART OF PLANE HIJACKING

ALWAYS hijack a plane belonging to an airline which employs pretty air-hostesses. (Otherwise the end will not justify the means!).

Then, plan.

Plan the following: attack, offence, retreat, defence, expense, suspense, cast, wardrobe, hair-styles, sound-effects, cinemascope and vistavision.



RAFI RASHID

*Final Year M. B. B. S.*

(C.R.)

At this stage it would perhaps be out of place to give a short description of the modern-day hijacker. But, what the heck, who cares? We will begin with a general examination, followed by a detailed physical examination from top to bottom, that is, "bottom" if the hijacker happens to be an XX, but "toes" if hijacker happens to be an XY, (with due apologies to all narrow-minded people).

Consider, then, ladies and gents, the modern-day, with it, sock-it-to-me hijacker.

The above mentioned specimen should be broad of shoulder, narrow of waist, keen of eye, quick of hand, quick of foot, conscious, intelligent, co-operative, well-orientated in time and space, no cyanosis, no anaemia, no jaundice, no pigmentation, no brains, all brawn, and ready and willing.

Clothing is essential-especially if the plane is to be hijacked over the North Pole. The clothes worn by the hijacker should be adequate and proper for the occassion. Remember, a neat and well-dressed hijacker always looks impressive. The with-it hijacker would like to look, and indeed, should look impressive, therefore, it follows that he should be neat and well dressed. Q.E.D.

A hat should be worn. It camouflages baldness and also hides the sinister, maniacal expression on the hijacker's ugly face.

An overcoat is an essential part of any self-respecting hijackers wardrobe. In it, that is, in the overcoat (Not the wardrobe, stupid) a number of formidable weapons may be concealed. For example a pistol in the right-hand pocket, a revolver in the left-hand pocket, a shot-gun in the top pocket, a machine-gun in the inner breast-pocket, an assortment of knives swords, spears, hand-grendes and time-bombs here and there, and last of all, a packet of black pepper to throw into the pilot's eyes if all else fails.

Ali set? Right. Let's go.

Hey: Hold it. Hold it.

We almost forgot.

Passport? Visa? A-Form? P-Form? N.O.C.? Currency? Ticket? All in order? Right. Proceed.

Once the hijacker is in the plane, and the plane is in the air, the action may begin.

(To make things more exciting imagine yourself to be in the hijacker's place from this point onwards).

Ring the bell for the air-hostess. When she arrives, smile. Cheese! Ah, that is it. Then ask her to take you to the pilot. When she does so, be a good chap and say hello to him. Be polite, but firm. Tell him, "If you don't fly this plane to Hill Park I'll blow it and everyone in it to smithereens. That's what I'll do. Yes, Sir, that's what I'll do. Yes, Sir, that's just what I'll do."

One thing. Do try to make the message rhyme. It sounds much better that way.

By this time the plane will most probably have landed at your destination, (as per above request).

Now is the time to bid your fond farewells,
Now is the time when you must depart,
Now, when youth and laughter beckon....
(Oops, almost got carried away, back there).

Anyway, get off the plane, take a quick look all around, and then, mister, if you've got any brains at all in that thick skull of yours—RUN LIKE HELL!

---

# HOW'S BUSINESS

CARPENTER: I wooden know".

BOXER: .. .. A bout to improve"

BUTCHER: .. "I have no beef".

PILLOW Manufacturers : .. Dawn last week".

WATCH REPAIRMAN: "I could use a hand".

DISC JOCKEY .. "Real groovy".

OPTICIAN: .. "Looking better".

MUSICIAN : .. "Sounds better"

DISTRICT ATTORNEY:" "Trying".

DRY CLEANER: .. "Spatty".

PRIZEFIGHTER: .. "Sluggish".

VETERINARIAN: "Beastly"

JUDGE: .. "Fine".

RANCHER: .. Bulley".

BELLEY DANCER: "Sheky"

WRECKER: .. "Smashing"

FLORIST: .. "Rosy".

AND SHEPHERD: .. "Baa-a-d".

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# REMINISCENCES



Dr. BHAGWANDAS SATIANI
M. B., B. S.

CRASH!! The pleasant chatter of the dissection hall died down slowly as everyone looked at Mobed as he ran, the femur thrown at him by Majid barely missing him. Unable to tolerate the kidding any more he grabbed my femuer lying nearby and hurled it at his target, breaking it into a dozen pieces! (He still assures me he will replace it, even if he has to walk on a crutch!) Well, first year had really started with a bang. Soon afterwords, I became involved in what could have turned into one sided affair with a hefty foreigner—all because I refused to stop drumming "Walk—Don't run" with my dissecting foreceps on a basin. But, we quickly settled down at seeing Prof. Wahid coming on his round. Looking at my flowery shirt he said, "which circus do you belong to?" Leaving me absolutely puzzled. On another table he asked one 'smartly" attired gentleman to demonstrate the various actions of the lower limb muscles. The student refused shyly on the grounds that if he attempted to squat, his torn pants would make him a *public* spectacle! An unforgetable moment came when one demonstrator was teaching us the Portal Venous System in the abdomen. We all listened attentively. During questions somebody asked, 'Excuse me, where is the Portal Vein?" The demonstrator calmly looked at what he had drawn and murmured, "It seems I have forgotten to draw it."

Never trust anyone but yourself—was the bitter lesson learnt by quite a few of us appearing for our Histology Practicals in the finals. A rumour reached us about the various slides kept for spotting—allegedly through a reliable source. Against my better judgement I wrote down what I had been told on three slides. I refused to believe the given information on the last two slides as my higher centres rebelled. Nearly everyone had stuck to the information. As it turned out, I only had two slides correct!

Second year 'literally" started with a bang. Some one had kept a fire cracker in a sink at the back of the class. Before it could explode, the demonstrator saw the smoke and failing to find the culprit, turned out the last two benches—including innocent old me! Again, while a lecturer was praising himself unabashedly, one of the quietest and most humble person this side of the equator—Cyrus, couldn't suppress a giggle. It wasn't very loud, but loud enough to be heard by everyone and he was promptly turned out—to the great amusement of the class.

A rumour spread that the new girl with the "copper" coloured hair, dyed her hair regularly. Nobody could confirm the news until Abbas, laid an all round bet and asked her. She seemed irritated and siad "No, it's natural, but what business is....". Abbas didn't wait further, for the possibility of a cracked shell seemed very real!

Mobed made the usually dour Dr. Afaq laugh when he was asked to state the caloric requirements of an average male. Without

a moments hesitation he replied "Ten thousand calories" Dr. Afaq's face registered shock, he laughed and said, "What is this—a bull's requirement?"

Newly introduced to the Surgical wards in Third year, we were asked to name one complication of varicose veins. When it came to the usually absent minded Majid, the question had to be repeated twice. Coolly, he opened his diary, searched for a particular page at leisure and said "periostitis", not paying attention to the vociferous laughter all around! One of the smarter girls was asked in her Hygiene viva as to what she would do after graduation. The answer was brief, "Sit at home". She was asked no further questions—a compliment to her presence of mind.

In fourth year casualty was the scene of a minor mishap. The whole group was crowded around a patient being given Anti Rabic Vaccine. Some one tapped Abbas politely on the shoulder and asked "What's going on? "He turned to see an ordinary looking elderly person and gave him a cool stare. After some time the man again said, "Let me go forwards". Abbas got irritated and told him, "This is no "*tamasha*" and as an after thought added "But, who are you?. "Hearing the reply he pushed everyone out of the way and muttered, "How was I to know, he is the new Administrator!"

One senior student motivated by the desire to do a public service started a collection to to give some new 'mod' first years a hair cut. The amount reached Rs. 25 and two barbers were requested to visit D.M.C. Half the college missed their classes to watch the big event. Fortunately, some sensible elements prevented a physical clash between the seniors and the unwilling customers.

A Professor had given a relevant paper to a student to be read out to the class, while he occupied the last bench. Our class jester entered the class from behind just before attendance, as usual. Unfortunately, he came and sat near the Professor. When he casually glanced around he was shocked to see the Professor staring hard at him. You are right Man, he ran for his life!

We were being taken on a round of the Medical ward and on a certain bed, we were told to listen to a 'Paradoxical Split'. As usual, we were split into many groups—some couldn't hear it, others heard it clearly, still others succeeded in defining the exact area of the split. During all this, a house physician passed by and stopped to listen to the discussion. Then he quietly siad, "The patient with the split is on the next bed!!

While we were posted in E.N.T., Keith decided to have a tonsillectomy. While coming out of the anaesthetic, he spat out some blood. Still groggy, but alarmed he told Mobed, "Call that.... Jafri". Mobed turned to see Jafri standing behind him! Next day, in his senses, Keith was reminded of his language by a sailing Jafri, of course, he apologised profusely!

Finally, here is a real bowler. An irriegular student in Prof: Hayat Zafar's Clinic was asked to elicit the cremasteric reflex. Calmly, he started to bang the scrotum with the hammer. The Professor stopped him just in time!!

# The Fallen Hero



By
Dr. DURDANA MOID
M. B., B. S.

SHE was looking out of the window at the rough and angery sea with the waves dashing against the rocks. The scene fitted exactly with the condition of her mind, it depicted the turmoil within her. Her thoughts seemed to come from a distance further than that of the waves which met her eye and would break more mercilessly against the rocks within her. The rocks that she, in view of her position, was forced to accept were far more gigantic and far more herculean than the ones that rose to her view.

Beside her, on the floor was a waste paper basket, full to the brim, but little did she realise its presence or that of her friend who had been watching her. She was lost in her dreamland, her little world, heaven or hell as she would make it.

"Nabila!" the sound startled her. The spell of it all was broken and she was brought back to reality once again. She looked around to find where the voice came from and her bewildered gaze met that of her friend.

"I've been watching you for quite sometime now. What has happened to you Nabila? you look so pale and woe-begone in that pink dress of yours and my God. Your room is littered with appers! You don't seem to have slept well either".

"Oh! how nice of you to have come. I was feeling so lovely and so sad", said Nabila.

"I can understand your feeling of lonliness, but what, makes you feel perturbed?" asked her friend.

"A lot of water has flowed by since I last saw you. It all began on a cool summer evening. While I was strolling in the lawn waiting for tea, I heard a knock at the gate. I turned towards it but halfway through I saw the gatekeeper coming towards me with a blue envelope in his hand.

"It's for you Bibi," he said handing it to me. The unfamiliar writing astonished me and with mixed feelings I carried it hurriedly upto my room where I opened it and went through the contents. At first I failed to apprehend them and read the words over and over again.

Was it real, that paper and those letters? Or was I dreaming a pleasant dream which I would awake and realise as abstract!

Could it be possible that Nadeem had now surrendered to his passions! Nadeem, for whom all hearts craved, had written to me!

Should I believe my eyes? I read it, felt it, held it, till I could bring myself to believe it a reality.

For quite sometime I've been trying to send him a reply, but as you can see, in vain. Colleges will reopen soon and I have to make up my mind before then".

Nadeem was the college favourite: the dark, dashing, debonair, popular not only with girls but also the life of any company he chanced to be in. His reputation as a student equalled his fame as a sprotsman. His gallant figure and chivalry was unchallanged.

Life began to be different with Nabila. She had always admired Nadeem but now she loved him with the felour of a woman's first and early love. She would scarcely breath it to anyone, not even to Nadeem, but there are ways of making it more eloquent than words, such as can be understood and felt but can hardly be brought under the domain of the pen. This growing passion absorbed every moment of hers. She cared little about anything else. When they were together his looks and words occupied her whole attention and when back in her room she would muse silently over all that had passed at their last meeting. His words kept ringing in her ears. With him she saw new beauties in nature and heard the witcheries of romance and poetry. Her attachment to him was like idolatory; she loved him as her hero, her king, her God and felt in his company the keen enthusiasm of an innocent mind awakened to the sunshine of the environment. The days tripped by on rosy wings. Nabila was so blithe with the present that she did not even care to think of the future.

Nadeem's heart had not been rendered too cold and selfish yet despite the chequered life he had lived. He had kindled the dormant sparks lurking in Nabila's bosom but his own had caught fire. His mannerism, when they were together spoke volumes of his impetuous heart. True, he had shown Nabila a different view of life, such as she had never seen before, but he was treading the path with her and for him too, each day seemed to awaken to newer beauties. "To know you is to love you, Nabila" he would say to her, and she would listen to him with a charmed ear and down cast looks of delight.

It is said that happiness is short lived, and so it proved to be for Nabila. The dawn of her life was overcast with black clouds of melancholy. The sunshine of her days vanished and her rainbows of hope yielded mist to the touch. She avoided society and sought solitude where she could brood over the ruins of her past. She bade farewell to love and happiness, wishing she could add memory to them. Memory the word was more bitter than gall. It eccentuated sorrow and desire which rose within her and turned "the past into pain"—pain that graved at her heart until it surpassed agony. She developed a moody and nervous temperament which made her a victim of unfathomable depression.

—Then his thought brought no emotions. He was a dead memory. She looked out of her window again. The curtain lifted and revealed the same stage—only the scene had changed. The sea was calm. She got up and went to her desk. A plain blue envelope was lying there. She sat down and penned her last letter to her fallen hero.

# AH! DOLLY

HE died at an age where manhood's morning almost touches the noon and while the shadows still were falling towards the west. He had not passed on life's highway the stone that marks the highest point, but being weary for a moment he lay down, and using his burden (that of oppressed) for a pillow, fell into that dreamless sleep that kisses down his eyelids still. While yet in love with life he passed into silence and pathetic dust. Yet perhaps it may he best, just in the happiest sunniest hour of all the voyage of life, to dash against unseen rock and sink at once. For whether in the mid ocean or among the breakers of farther shore, a wreck at last must mark the end of each and all.



SARFARAZ ALI
*Final Year M. B., B. S.*

Memory is a way of reviewing the past, the dead. My memories of association with Dolly, extending from the day I met him till the day I saw him off at Karachi Airport when he was leaving for Lahore never to return again, though every hour of which was rich in love and every moment was jewelled with joy, are masked by a tragedy as deep and dark as death can be.

Born in south Africa, a police state, in midst of people who perhaps instinctively felt that they are merely fools in their society of greedy and powerful men who don't really care about human beings, Dolly had an inborn contempt for repression and love for freedom and liberty. Reared in such society his ahhorence for suppressive and repressive forces kept on increasing more and more as he drew more from his already very limited account of time from the bank of life. He had to pay very dearly for his convictions Initially he had to desert his family and finally his homeland for his association with the revolutionary forces.

Love for the oppressed was engraved so deeply in his fibre that even in Pakistan he always directed all his efforts towards amelioration of the poor with whom he had nothing in common yet bound with inseparable bond—an urge to eliminate human sufferings. All during his life fought for the poor, for the exploited and for the abenated. He always talked about values of man and his endeavors. Restoration of human status for every human being was his ideal, his goal and his cause. All his thoughts are reflected unambiguously in the following poem written by him.

No man is, until all others are free,
Since each of us is branch of that tree,
Some hang low while others dangle high,
Carrings their leaves and twigs to sky,
The weak wilt, while stronger one survives
Where in birds build their nests and bees
their hives.
No man is, until all other's are free
Since each of us is mothered by the Sea
We were mere speck of life, with time changed
till we are today, like we are arranged
Food we all need to grow stronger and
healthy
What we donot need is poor nor wealthy.

This poem does not only prove the richness of his thought but also bears an eloquent testimony to his great pen-manship. With his pen he waged his warfare. His pen had the lightness of wind and the power of a thunderbolt. But for the shortage of years he would have lived to be another Frantz Fanon whose book. The wretched of the earth serves as eternally lit beacon of light for oppressed people who are engaged in struggle for emancipation throughout the world. Dolly waged a war of thought against ignorance, the war of reason against prejudice, the war of just against unjust, the war of oppressed against oppressor, the war of kindness, the war of goodness.

He was a versatile genius with a great mind and unmence heart. This brave and tender man faced every storm of life like oak and rock. But in sunshine he was vine and flower. He was both steel and velvet in one. He was as hard as rock and as soft as drifting fog, who held in his heart and mind the paradox of terrible storm and perfect peace. He had the wrath of a hero and tenderness of a woman.

During his very brief sojourn at Dow Medical College he became friendly with almost every body at college. He had caught the imagination of students. They loved him, they admired him.

To epitonize his epithets I have no epitome. He gained pleasure from other's pleasure, gained satisfaction by satisfying the other. He believed that happiness was the only good reason the only torch, justice the only worship, humanity the only religion and love the only priest. Perhaps there is and there will be no greater man than he was. In the words of Shakespear, "When comes such another."

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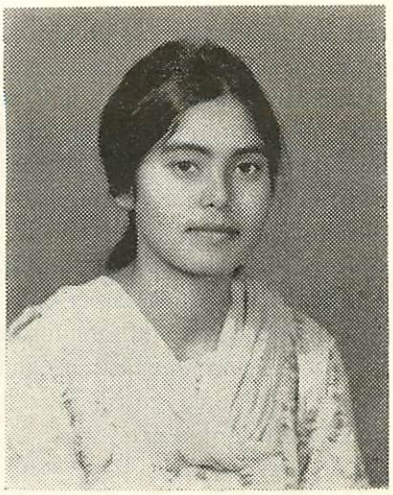
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# " A Faded Realization "

By



JEHAN ARA

*Final Year M. B., B. S.*

THE decades of time has shown that boys have been given special priority and privileges in society, in family, and in the world as a whole.

Parents get radiant with hopes, ambitions, desires and a contentment if they are given a boy rather than a girl. For boys have every advantage, facilities to exist in this world, being devoid of physical or physiological defects as you find in the girls. It has been seen that boys can with stand the stress and strain of hardwork and agonies of adventure better than their opposite sex, the female. Nevertheless, the blessings of Almighty are in favour of boys, they have been created in this world to perform mighty tasks, to conquer the importable and the mystery, for which they have been made as "Shock Proof".

Time immemorial has been the testimony of boys roles in the world. In fact, they are non-susceptible to defect, dismay, disgrace, and dishonour. Obviously, they are blessed with an 'ego' which is the wheel of their superiority. Turn over any page of any book, you at a glance get glimpse that boys are everywhere, they have been great warriers, great scientists, great explorers, great administrators and even a fiction is not complete without them. Not only anatomically, physically and physiologically they differ from girls, but also mind, manners, and appearances. They have a stout built, stoic mind, and an appealling appearance.

Now-a-days the appearances of boys from the top to the bottom are deceptive. An arrogant feeling has been prevailing among boys to acquire the habits, manners, behavours of girls, and appearance too. This is a sad, pity, and a shame on their part to lose their gross appearances which directly or indirectly moulds the inner self, and the days are not far away when every characteristics of boys and manlihood would be faded, and a basketful of their demarctations from girls would be thrown to a distant horizon.

What is the reason behind all this revolution? Time is gone when long hair used to be a decoration piece for girls only—as it gives a womanly appearance to them, but now neck deep hair for boys are counted to be the decoration pieces! Sometimes a flock of these types of boys do go unnoticed among a crowd of girls, for very cleanly, they have a shaven face, would grow hair which half hides their face, from the back you can mistake them for a girl without any warrant. Nearly they have the same robes as the girls wear. The bell botts and elephant botts type pants have taken the place of gent's pants.

Their dresses, no wonder are a symbol of mighty and magic changes taking place exteriorly. But interiorly too, their attitude toward the useless has taken a tremendous degrading path. Glance at the boys from any angle, at once their clumsiness, pathetic

comouflage welcome your eyes. The domineering role in speech, behavour, diplomacy which used to be a part of life in boys, is now a dead and a bygone motto for them.

Give a thought to your subconscious mind, and a trial to your capacity to understand the mystery—though not a mystery, but presently its a real damn mystery to them to apprehend why they have been created a different creature, differing a great deal from their so called the female contemporaries. Well see, since the dawn of this universe Adam and Eve were endowed with different qualifications, and had diverse functions to do. Now boys—you are of the same soul and mind as of Adam who are blessed with strong physique, determined and flowless mind. To numerate the qualifications and to prove them, take the example—that from time immenorial man has been a protector and a benefactor to his wife and children, as a husband and a father. The fathom of mystery in the world has been explored and discovered, the ever proudest and mightiest creations of almighty has been made to bow before, and by whom, the creature like you only.

Now boys, why do you want to abandon your such marvellous personalities and dig yourself a painful and repulsive state by indulging into terribly shocking affairs? Just visualize for a moment in what state you are, gradually your mind is drifting into destructive policies, with that you people are becoming a nuisance to the family, to the society, to the world as to say.

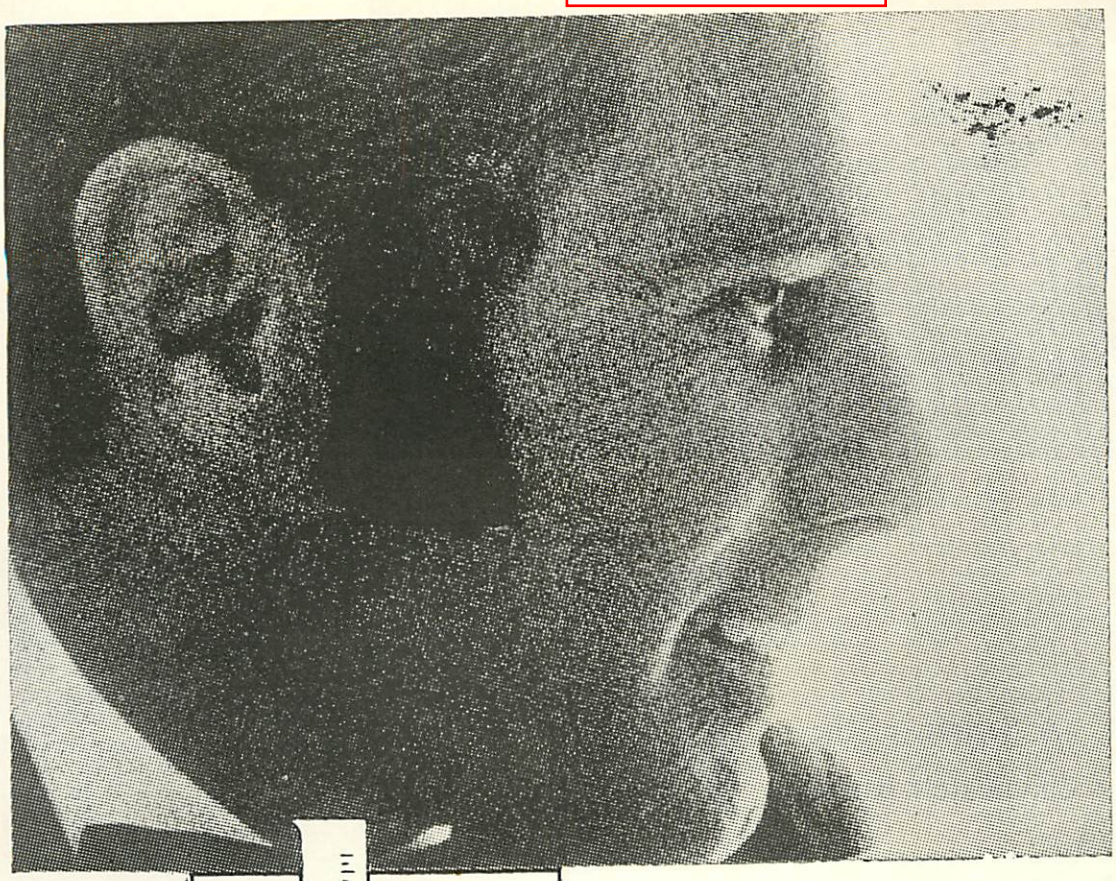
What the joy and happiness do you people get by acquiring the dresses of girls, not only this but your behavoural pattern and axis of every aspect of life is now revolving at girlish and womanly orbit". Not long go the boys had a strong tendency to do something which would demarcate them sharply and in a refined way from the girls like being sportsmen, orators and real good educated persons. But now for the boys the first and foremost lesson left is to specialise in the field of dancing, music, brightly coloured girlish attires, and Oh! my! beautiful long ahirs.

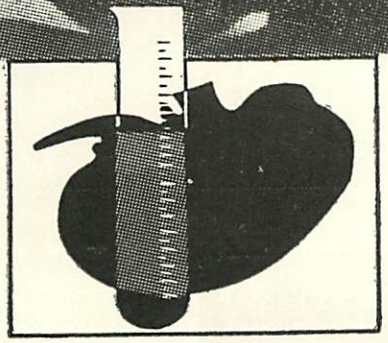
Lets try to allay their grievences and painful sufferings by asking the following questions:—

1. Are they fed up of being boys?
2. Are they afraid to accomplish the tasks and performance for which they have been created?
3. Do they really want to modify themselves, expected to be tender and loved as females?

If the conscious of these boys they say belong to neither of the above mentioned categories, then its better to exhibit themself as manly. "At least for Communities, Sake Don't be Girlish and Womenly".

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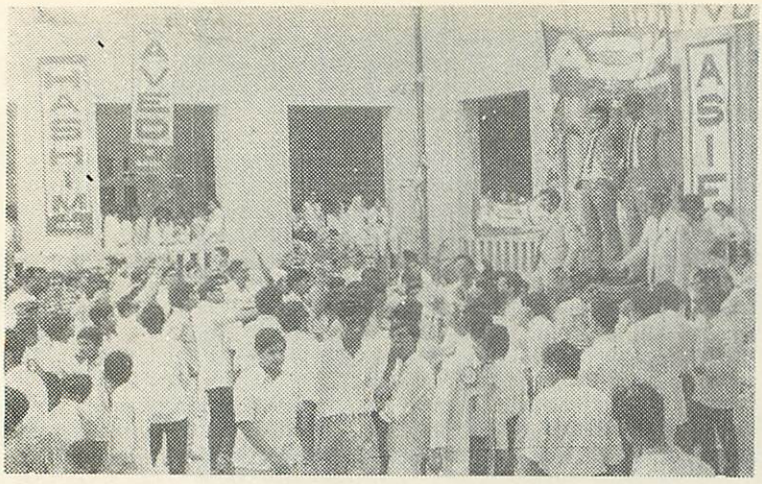
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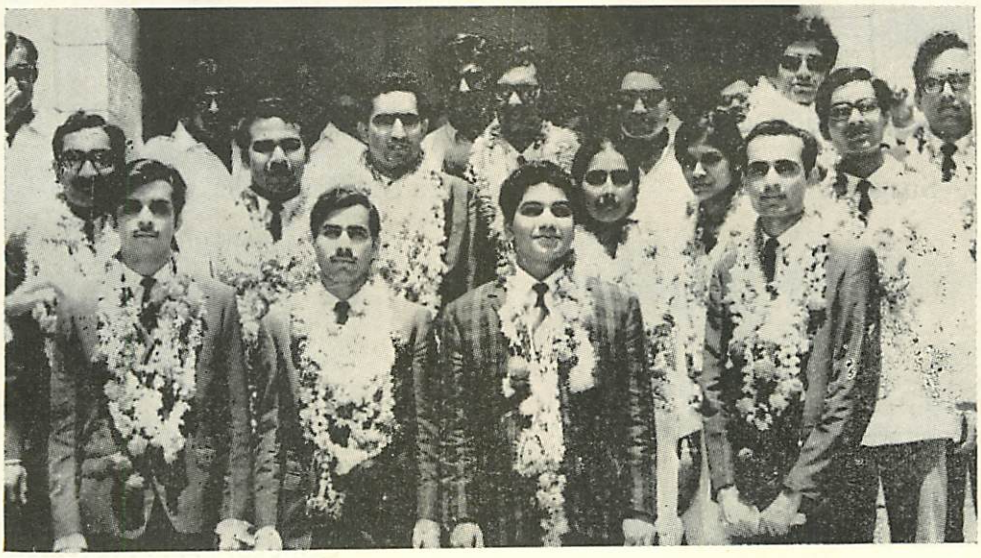
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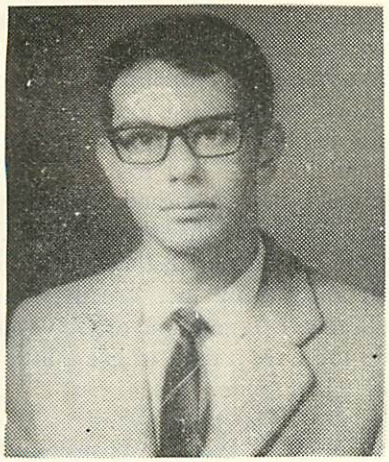
Eat and Play



Medios away from
College.....Picnicing
at the Sea Shore

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# THE MESSAGE



By

RAFI RASHID

(*Class Rep.*)

*Final Year M. B. B. S.*

THE fortune teller told him, "Today is very important for you. Within the next two hours you will get a message or meet someone who will change your whole way of life overnight." The session ended. He paid the fortune teller and left.

"What nonsense," he though to himself as he drove towards his club, "What utter nonsense". Who can I possibly meet? who can change my way of life overnight? And, how can the change be made? And anyway, what is there to change? I am an ordinary man. Neither genuine nor fool, neither rich nor poor. Not a leader, nor politician, nor do-gooder, nor gangster. I'm not a religious fanatic, nor is religion my strong point, but I'm not an atheist either. I'm not an extremist of any sort, but on the other hand neither am I a follow-the-leader-sheep. I'm nothing extraordinary. Just ordinary Just very, very ordinary, I'm Me. And that's the way I like it. "So nuts to you Mister Fortune teller, "I don't want any changes."

He reached his club. He parked his car, locked it and then entered the club, looking forward to a few rubbers of bridge with his friends and to his daily limit of two small pegs of whisky.

His friends, however, had not yet arrived. So taking the evening newspaper he settled down in an armchair to while away the time.

"Excuse me, Sir,".

It was a waiter. A new waiter, apparently one he had never seen before.

"Yes"?

"A message for you, Sir,". The waiter handed him a folded sheet of paper on a tray.

He opened it. It was blank.

"Waiter," he said, in a surprised tone of voice.

"Sir?" said the waiter.

"What's the idea?. Is this some kind of a joke?"

"Joke, Sir", said the waiter, slightly lifting his eyebrows.

"Yes, damn it, joke," he said sharply showing the blank paper to the waiter.

"I do not understand you, Sir, I believe you were told to expect this message. And also," the waiter paused, "to expect me.".

"What the dickens do you mean by that? Who are you? What's your name? I shall report you to the management".

The waiter regarded him quietly for a few moments and then said in a soft but plainly audible voice "My name , Sir, is Death. I have come for you."

Suddenly he felt icy-cold. Soon afterwards everything became black foreever.

# "CONFESSIONS OF A DEFEATED SOUL"

ANONYMOUS

THE pillar beside which I stood was as firm as a rock. My hand that clutched it was now numb and cold, all sensations had cased to exist there. I stood, in that lonely spot, I know not for how long a time, a cold bitter feeling creeping from my feet, towards my benumbed senses, and the glorious sunset in the western sky was lost to me. To enjoy so blessed a moment, was forever gone, I knew not when and how I would gather up my scattered wits again and come to live in my present world.

My present world, how cruel and ghostly it seemed now. Gone were those happy care-free days, when I had no responsibility, I had no duties—nothing, I was happy—deliriously happy, I had never even dreamt in my wildest dreams, that it took just a few moments for happiness to be snatched away from someones world. Something beside me whispired, "But Eulek surely you are not going to spoil your so well planned life for the sake of a single person. After all there are plenty of other people to love and admire you. Why don't you start afresh, your entire life lies ahead of you, you are now free, free to choose anything."

Free!!!—for what? Why?—for whom, the word itself stung me like bitter frost, and I could not but help my suppressed tears flow freely. How long can they be held anyway, I consoled myself, after all they too had a right to flow as they wished.

"Eulek—I still love you, I do," the sentence was still lingering in my ears, and incessantly, drumming there making me go crazy with apprehension. You do love me but you cannot marry me isn't that so."

I am sorry but you know what circumstances are." Of course I know what uncircumstances are.

The conversation that I had, had an hour ago was still vivid in my mind, O'God, I found myself muttering did you bring me back to life, when I was so near to death for this day, this very day, when someone I had learnt to admire and worship from the depths of my heart, would refuse to acknowledge my so sinere devotions. Did you—I would not help complaining—I had to complain. After all how much happiness had I been given in the past, that now the only real and true happiness I had acquired, that too was being, snatched away from me, cruelly, unmercifully. Surely, I too am one of God's subjects and I do too have a right to live a little if not much of a happy life.

Slowly, but very slowly, I retraced my steps back to my room, and stamped down on my bed. The hot musty air inside made me feel more nauseating and the pain in my chest became so unbearable that instructively I had to raise myhand there to ease it, but of course, it refused stubbornly to be eased.

Try as I would to calm my mind, it would not—the turmoil and torture inside was gradually eating me and draining out all my energy and vitality. All my past memories came back, flooding, and increasing the pain, and I felt myself sunk down, deep down, I knew not where. Honey I love you" I repeated over and over again but there was no one to reassure me, there was no one to console me, there was no one to contradict the words which would not give me peace ever for a moment.

I still remember that black unhappy day when with swollen eyes I had come down to lunch and you had stared at me with me an immensely hurting look. Perhaps it pained you more to realise that my result was not as was expected, surely dear, you haven't forfotten that moment or have you. Later how much you tried to console me, how much you tried to make me laugh again with out feeling much hurt about it, and how you blamed others for it instead of me.

Then finally one day, when you surprised me, by writing to me things that had made

my face radient with joy, and my eyes sparkle like the stars. I still remember the haunting melodious endearments you whispered to me when we were alone. There was no one to disturb us, there was no one to frighten us, the peace, serenity, nature, everything co-operated, and all of a sudden everything had become enchanting in front of my eyes. Even the dreasiest hours used to flash away, I knew not how, there were no more long tedious evenings, no more melancholy hours, no tears at night, and I felt as if God had placed me in Paradise.

O' God, how I wish I knew then that the universe is not stable, it moves along with the time and along with it nothing in it lasts. No—not even the highest of high hopes, and the most glorious moments which time after time come to an individual to make ones life bearable in this detes table earth of ours.

There is now nothing else left for me to do, nothing at all, except to study, do well, brighten up my future and stand on my own feet, and show the world that money and family is not everything, and that a boy's "No" is not the end of the world in fact it is just the begining.

My unconscious self shivered a little, not with cold or with fear, but with courage, for a new resolution was slowly awaking inside me, and igniting a huge flame. A flame that seemed to come from eternity to light my way and guide me along the correct path. I know I have made mistakes in the past, plenty, there is no doubt about that, but then human beings are all mortals, they are not born perfect, they make mistakes and through mistakes and errors they learn gradually but steadily, for life itself is nothing but a journey through errors and trials. A baby, when learning to walk, falls one thousand and one times, but in the end after countless efforts he succeeds, Like the baby perhaps, the same case is with me. I have failed my guardians, literally dissapointed them in every way, in way, in every action, but perhaps, that day too isn't much far when one day, they can proudly say, "she is ours."

It hurts plenty, oh ever so much, to think of the mistakes I made, and branded myself with them. For this I can only ask my near & dear ones to forgive me, to forget the past, to give me another chance, to prove to them that I am not what I seem to be now. And while I make this solemn resolution I also beg God to help me, for without his help everyone is helpless and I am no exception.

I loved a person, and destroyed myself, perhaps it is the truth and I am not ashamed to own it but since love has been extinguished from inside me forever like a dying fire, I shall now pick myself up from where I left, and prove to you that I am capable, and I do too have a right to live as happily as the rest of the people do, even though God has not made me that fortunate and has not supplied me with luxuries as he has supplied to His other subjects.

And sometimes now when I sit alone and in utter loneliness, I wonder, whether love destroys a person, or whether love endows life in an individual but I have never been able to answer this complicated question of mine in the most satistying manner. For I know people to believe that love is a mortal sin, and again if it is a sin, such an unforgiveable sin then how is it that God, the supreme creator of mankind ever gave a man and a woman the permission to marry each other, and on the other hand if love is not a sin, then how come society looks down upon it ever so disdainfully and such have always been my arguments.

Nevertheless, when now I hear and listen to the most glorious thing which is nothing but 'love' I get absolutely bewildered and perplexed. For sometimes love is the seventh heaven which knows just happiness and sheer delight. It is something exquisitive with no faults, or follies for it is like an angel living with God'. Yet, at other times, and for other individuals it is tears, agony, heartache sufferings and cruel tantalizing remarks.

Which exact thing does love denote, I wonder still, for I know its neither of these that lasts—for the universe itself is not stable, and in it every thing moves, specially the mind of its male species, who are supposed to be Gods choicest subjects, here, and to whom, he has given the greatest of all advantages' among all his creations.



# "ON TEARS"

AZRA RAZA

*2nd Year M. B., B. S.*

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THE hydraulic force through which masculine will power is defeated by feminine water power has been called tears. Woman has been notorious for this revolting practice of "getting what she wants" by a slight stimulation of her tear glands.

Apart from being adept at evasion and sophistry, a woman's most accepted jewel is this feasibility of fluttering her eyes and squeezing out tears at the right moment. You can despise a woman, hate her enough to risk the electric chair, subject her to calumny, obloquey and defamation. But let a single drop of transparent liquid be reflected through her eyes and you will proscribe and condemn all your former accusations!!

To be a woman is something so strange, so confused, so complicated that only a woman could put up with it. Yet, it is a man I pity, because what he has to put up with is not only this capricious vagary of imagination, but also all additional burden of ever-ready, unabated fountain of salt water which threatens continously to drown him, "head, hands and heart!"

In old days, it was Cleopatra's tears that brought Mark Anthony to his doom and it was Juliet's tearstained face that landed the tragedy on Romeo. Later, it were Anne Boleyn's tearful eyes that made her Henry The Eight's second wife and Jane Seymore's tears that made her his third bride. Lastly it was in Laila's tears that Majnoon found his sanctuary. But the most enthusiastic approval given to this "eternal fountain of double meaning conquetry" came from the Almighty himself, who found Eve's reservoir of this tricky fluid to be too much for his liking. Thus I call Adam, the greatest mug to go in the fruit business in heaven; and Eve, the first and greatest lady to "tear" her way out to this earth. And you can quote me!

But times change, and so have the techniques of our girls changed with time. How

they are employing this advantage in a more subtle and fastidions manner.

Lately, their tears have proved to be the cause of social, cultural, psychological and even moral collapse of the opposite sex. Facts present the most grotesque and in human image of a man who is reduced to a mere burden by this delicate wife who happens to be adept at the art of crying on the right time.

Socially he is equivalent to a servant, or a slave, who is toyed in the clutches, sighs and tricks of his "tearful Cleopatra." Economically he has reached the pinnacle of inflation, bankruptcy and dilapidation by trying to fullfill the multifarious demands of his "ideal" whose tears he cannot see.

Women do not realize that their tears make men unmanly, their desires become effeminate, their weapons, fraud, cunning and forgery. To impress a man, and get what you want by this evil practice of crying kills his ego. He then receedes to ferocity with the result that mentally ill-balanced and mal-adjusted men are seen to show limits of degradation by whistling at girls and pushing and jostling women on roads. It is not out of joy or hilarity, but a result of their frustrated and curbed desires to fullfill some denand of their women. Thus indirectly all this leads back to the old tale of woman's tears!

Confucious once said that one of the worlds great misfortune is a man of lax morals, but its greatest liability is a women with an abundant supply of tears.

When a girl cannot fight for her cause, she tries to tear her way out. To dissuade out of such a tearful parodox, aunscattered and unharmed, should be considered a man's greatest triumph and the reverse his sure perdition. The more such a male gloats over his enormous triumph, valorous deed and Herculine task, the more I hold him capable of acknowledging my plaudits and warm applause.

No eloquence, no flattery, no palaver can soothe a crying female lest it be what she started on the beguiling manoeuvour of crying. Even though I am a women, I have all my sympathies with the males of our species. I am sure, reader, you have heard that to err is human. What I think is yes, to err is human, but to really foul things up requires a tearful woman.

*She Was The Sort of C u t i e this like over look you*

# "A PAGE OUT OF MY DIARY"

By

QUMERUNNISA KHALEUQ

2st Year M.B.,B.S.,



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Amin H. Karim MD

*Dear Diary*,

THE other day, I saw the most heart rendering scene in the Bohri Bazaar. I simply do not have words to describe it to you, as to what my feelings were then.

What exactly was the scene. You see I was in one of those big departmental stores, buying some miscellaneous things. After I had finished with that job, I sat at a corner waiting for my car. Finally, after a long wait, when my patience had nearly exhausted, all of a sudden I looked up, and saw one of the most rare scenes of nature. I saw a girl coming towards me along with her elder brother. She was perhaps 4 years or less, but she was, walking ever so confidently, and her brother 2 years older, perhaps was trailing behind—very protectingly indeed.

The brother whom I shall call Tutul, bought some thing not costing more than 25 paisas. The sister, I shall call Rana, in the meantime had started to room about in the entire shop. Having nothing else to do, and feeling absolutely bored, I intently gazed at Rana for a long time.

Her complexion was fair as the new sheves of corn which are picked just at the first season. She had on a dirty, filthy pajama, with a tatered mini shirt, and a cute dupatta. Very innocently with a finger in her mouth, she was walking about in the entire store, and gazing at all the candy jars with eyes full of longing. In the bright light of the store, her complexion had changed into something delicate and exquisite, something like the scene when the sun starts gradually to rise early in the morning; the crimson colour of her checks was so marked.

Gazing thus at her, I wondered, as to why is it, that God is not so generous, where giving of beauty is concerned with the rich as well. I had always noticed that it was usually the poor who are born as a charming delicate flower, and the rich as something drab and melonchioly. But then of course God has His own reasons. Since he could not give beauty and wealth to the same person, he distributed it equally, among all his subjects.

Suddenly, with a jerk I was awakened from my dream by Tutul's voice. He had come to the corner where Rana was standing, and catching hold of her arm said, "Rana *ghar chalo*". (Rana lets go home).

Her finger still in her mouth, she stared at the rows and rows of candy jars, and not in words, but in gestures, told Tutul that she wanted one of those. Seeing her thus I was quite amused, her childish face so innocent and pretty made me realise all of a sudden, the very greatness of her creator, and I gazed at her more intently, trying my utmost to catch the words her brother was saying to her.

All of a sudden I glanced at Tutul, the expression on his face had changed, something uncertain and disappointed was evident there; again Rana said but now in words, "*Bhaiyya*, I want those". Saying this she smiled, and her face got absolutely transformed; something

angelie appeared there, pleading yet at the same time, confident, that her wish would be granted. The expression there was so divine and so sweet, it at once reminded me of a scene I had in "Heidi" a book by, Johoanna Spyri Describing a sunrise early in the morning on the snow capped Alps, he says, "The peaks of the hills started to blaze, into a glorious fire, when the golden threads fell on it slantingly". Rana's dimples were so prominent now that she smiled, I could at once visulaise why "Heidi" had employed so lovely a scene.

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Tutal at a loss as what to do, looked away from her face. The pleadings too in Rana's eyes were, perhaps unbearable, "Rana," he said again ever so gently, "when I grow up, and earn huge amount of money—I shall buy for you all those sweets."

Rana—now more stubborn than ever before, refused to understand, and again pointed towards the sweets and said, "Bhaiyya, I want those sweets."

Tutal seeing no way to make her understand, caught her firmly by the arm and started to drag her out. Rana gave a loud shrick and made the entire store vibrate with her pleas. Inspite of it, Tutal went on dragging her, but her feet were firmly planted there and would not even budge a few steps.

From her eyes now, a continuous stream of water had started to flow and I was astonished to see so much salty water in the eyes of one so young. Her two plump cheeks had now become more red, and her wails more pitiable —the brother young too, and unable to understand his sisters emotions, caught his dear sister by the shoulders and he too burst out crying, he, because he could not buy for his so adoerable sister her most cherised thing and she, because, no one was buying those delicious things for her.

In between his tears too, he tried to make his sister understand, that if he could, he would have bought her not just one sweet, but as many as she wanted, but it was all in vain—Rana with her innocent lovable endearments did not understand.

Watching this scene form a few yards away, I got so engrossed in it, that I was absolutely oblivious of everything else. The shopkeeper was so engrossed, with the other customers that he failed to notice this episode.

At last when I woke from my stupor, I went towards Tutal and Rana. Catching her hand in mine I asked her, "Rana which sweets do you want." At first she could not understand me, and was a bit afraid, but when I asked for the 4th time, she pointed towards one of the jars. I took a whole packet, and handed it do her.

She extended her small chubby hands, and took the packet from me—ever so gladly. After that her eyes too dried, and the immense sea of water she was shedding stopped; Tutal looked gratefully towards me and his eyes seemed to convey his sincerest thanks, though his mouth did not utter a word.

Then hand in hand both the brother and sister left the store, the sister radient with happiness and the brother unable to express his thanks to a stranger, who had made his dear sister so very happy.

After they hand gone, I stood there for a long time rooted to the spot, my head full of strange spectacle that I had witnessed. The great love and understanding that a brother reserved for his sister I could fathom, just that day, for having no brother or sister of my own, I had always remained ignorant where this type of love and understanding was concerned:

A brother—is there more sweet word existing—I don't think so. The most desirable relation which exists in God's universe for after parents love—a brother's protection is the only weapon which can exist without my misunderstanding. But then parents too do not stay during our entire journey through life—sooner or later they abandon us as age proceeds on, it is the brother only who accompanies us through thick and thin and finally to our eternal bed.

# "A PAGE OUT OF MY DIARY"

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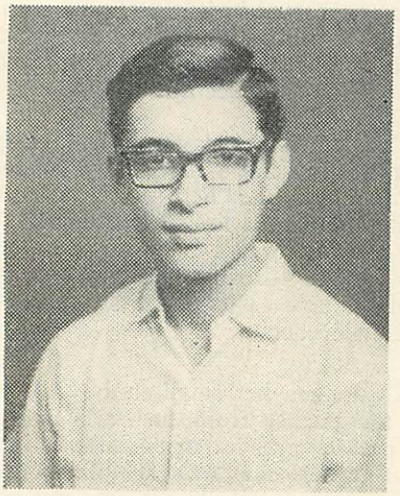
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# Simply an Episode

By



MAHMOOD PESHIMAM

*2nd Year M. B., B. S.*

MINUTES ticked away as the heat of the sun gathered momentum. I could feel the advance of a drop of sweat run down my fore-head, creep over my right cheek and slip down to my chin, where it paused for two seconds before being absorbed by gravity. I began losing patience as I looked down the road and could see well over half a mile, but alas! to no relief. So I kept walking up and down, gambling with time, the little I had. Unfortunately, up till now I had been the loser. "Five more minutes, not a second more, I told myself, "If the bus does not come its going to be quick march with me."

As four minutes and fifty seconds passed I kept one eye on my watch and the other on the road. Fifty-five seconds, fifty six, fifty-seven, fifty eight, fifty-nine, time up, no sign of relief; so I began to walk. As I trudged on barely traversing five and twenty steps, I heard from behind a familiar rumble as if a 888 dragon came snorting alone. I am sure that there is not a soul in this town who cannot recognise that imitation of thunder. I quickly turned round and waved the driver to stop. To my disappointment he simply slowed down. As the bus was passing me, I ran along with it as fast as I could trying my best to keep up with the entrance. I managed to clutch the handle-bar at the door as the bus gathered more and more speed. I ran with desperation, I ran my heart out, I said, "Its now or never," and then swung myself air-born, and a moment later I was on the foot-pad zooming away.

As the bus was packed within I had to station myself at the entrance. I felt the wind as it puffed into my face and filtered right through my hair. Satisfaction ruled me in this situation until I began being pushed from within. This set me worried lest I slip off, as I am rather thin and not extraordinarily well equiped with the muscles, with both hands, clung to the handle bar in utter desperation, I cleanched the bar with all my might I saw my hand turn white as all the blood proceeded into the arm. My tendons became more and more distinct, my veins more and more prominent, wrinkles crawled on to my face as I clenched my teeth, it was a struggle for life and death, and every second of the encounter spelled horror. Fortunately it did not last for long. As I began my prayers for thanks giving, I found my-self in a rather un-comfortable position as the bus began to shake up and down, (perhaps due to cavities in the road). Of all the things, this set me oscil-lating in simple harmonic motion between the two extremeties of my body. I could do nothing but wait for the smooth road ahead, and it was only then that relief paid me a visit.

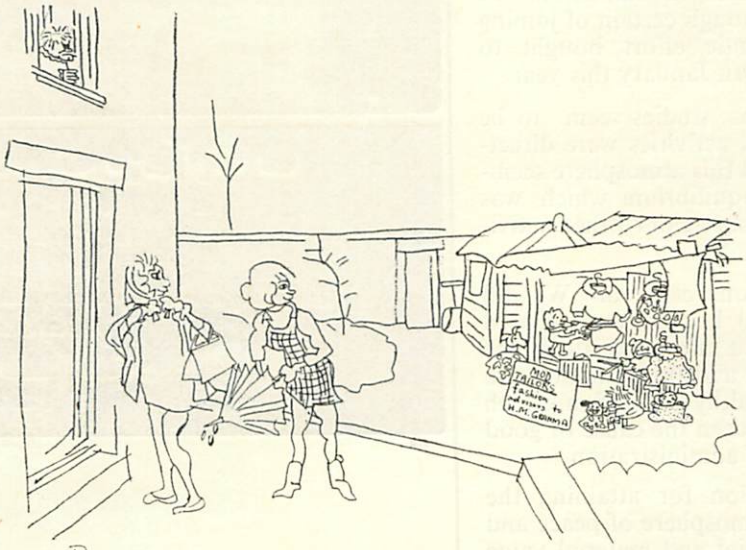
Soon my eyes began feasting on a bus-stop and with its appearance I made up my mind to get inside at any cost as I was aware of the fact that this was my only hope. As the bus came to a halt, I tried to push my way in but to my dismay a man almost twice my width tried to come out; I pushed against him, but alas! of no avail. Time barely ticked away when surprisingly enough I found myself standing well within. I just do not know how I got there, all I can say is that I managed it, the process involved being no less than a Water-loo. Soon we were off once again.

Once well inside there was no danger of falling off the bus but neither was it a condition of total thanks giving for besides having your ears subjected to the strangest of noises and your body dedicated to the racketiest vibratory motion, here there are enough

chances for one to be half dead due to suffocation and he who gets a seat at this stage is a very lucky fellow indeed, for he does not have to go through the final episode of being masticated to the bone. And of course the mastication is treated with all the sweat that the body can spare (if one is already not dehydrated); for this serves as saliva for your mastication. Finally, if culmination can prove its existance here—as normal physiology would predict, the poor fellow is swallowed upby the very interior. Nevertheless, it is true that if one has a little presence of mind, experience and will power, all these calamities may be avoided. Well, come what may, I was satisfied in my new position. While adjusting myself to my new surroundings I realised that all was not correct with my balance. Perhaps gravity was tired of acting along the vertical plane. It seemed to have switched over to the horizontal attitude. I am sorry I made a mistake, vertical gravity was absolutely normal. For it was only when my eyes fell upon my right door neighbour that I realised the new source of gravity. I decided to bear his weight when I saw that two more chaps had joined him. This was one of those times when optimism is too feeble to bring relief. A time when one would say its over now; No, No, its not over, its not over at all for as I was thinking I was being pushed equally from the left and behold, I was in equilibrium,!

Then came the conductor shouting, "Ticket" being suspended in equilibrium I was lucky to do away with the trouble of catching hold of the handle-bar above, and hence employed my upper limbs to make more room for myself. Finding enough space I sent my right hand into my back pocket in search for a ten paisa coin for the ticket. By the time the conductor reached me, I could feel the ten paisa in my pocket which I was about to take out when I found myself so closely cornered by the three men that, to my misfortune, I could not relieve my hand from my pocket. This aroused my frustration so much that I pushed my elbow back and swung my hand free, thankgoodness, along with the ten paisa coin.

On taking a peep through the window I realised that I was half a mile from my destination, ( the next stop). With little mathematics and and excess of psycology, I calculated that by the time the bus reached the stop I would have enough time to reach the exit. So desperate and determind, daring and dynamic, doing and dictating, I battled my way so much so that by the time the bus came to a stand still I managed to keep only two opponents between me and the exit. Surveying the situation fully I uttered, "One, two, three....heave! and s behold I was out of the abyss. (Thank goodness in one piece).



Dress arrangement themselves always — altering grandma dresses to 7" above the knee

# "Better Light"

By
TALAT ANJUM
*2nd Year M. B., B. S.*

I REMEMBERED farely well when I was the student of secondary school, one of our teachers used to say," Fulfil your obligation, Devote to your destination, Sincere to your relation."

All these qualities are the jewels of man."

At that time my teeny weeny mind was absolutely unable to follow the meanings of destination and obligation and I had to consult my pocket dictionary to find them out, but as I joined my intermediate college, secretly in my hearts of hearts I cherished the desire to become a medical student. This object was now becoming my life long ambition and all I needed was to get the first division, inspite of all the playwork and enjoyment our college group of about a dozen girls used to have. Well, it was a miracle to have it and according to my group friends it was a mistake of examiner or some sort of luck I possessed really.

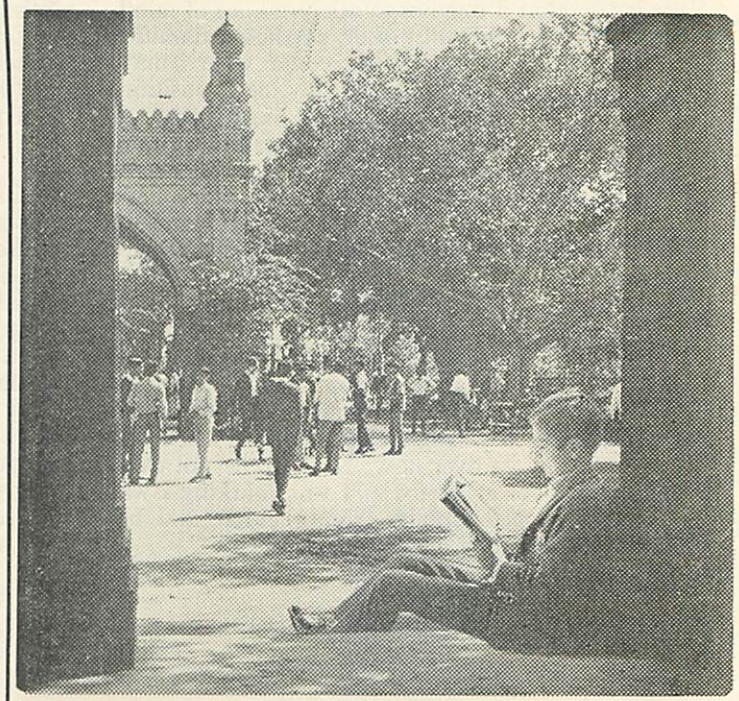
After all, effort is the law of life and to cease to strive is to cease to live, so utilizing the opportunity the form of admission was filled and submitted, though certain of joining B. Sc. Well our frantic effort bought to D.M.C. premises on 19th January this year.

In early three months, studies seem to be the only goal. Our all activities were directed towards this end and this atmosphere seemed to be creating a disequilibrium which was perplexing and saddening as our other activities were parting away.

And then our elections came on. We did enjoy a lot. Once all books were closed The united and positive efforts to attain the goal of a better society and proud nation can be achieved through healthy apposition, which no doubt, have always been the cause of good management of better administration.

A satisfactory solution for attaining the harmony needed for atmosphere of peace and health, devotion to social and material value lies in the whole-hearted co-operation, mutual regards and maximum contribution by all, thus helping to build a great nation and D.M.C., as the best Institution of it.

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طلبا کی خدمت میں کوشاں

قوموں کی قسمت کا فیصلہ سکول اور کھیل کے میدانوں میں ہوتا ہے۔
مستقبل کی جدوجہد کا انحصار اقتصادی ترقی پر ہے۔
اقتصادی ترقی کے لئے بچت اہم ہے۔
ہمارے ہاں سکول بینکنگ سکیم کے ذریعے صرف ۲۵ پیسے سے بچت شروع کر سکتے ہیں۔
ہم طلبا، اور اس طرح قوم کے لئے بچت کرتے ہیں۔

نیشنل بینک آف پاکستان
اس بینک کے مالک آپ ہیں

AIM

# Tnrough the Window

By

NASREEN SULTANA

*II Year M.B.,B.S.*

WINDOW is a multipurpose thing. I know its quite childish to tell you about such a thing because every body must be aware of its benefit. I do confess, even then I have something to tell you about it. You know, windows make the rooms airy and illuminated. But have you ever thought that if there were no windows, where would we hung colourful curtains? Window is also a means of amusement. We can stand before a window, opening at some busy street, for hours and just watch the people. You must be acquainted with the story of that patient whose bed was by a window. It's another story that how, because of his imagination he changed a plain wall into a busy street and a settlement.

Windows are also useful for commiting suicide. People use window to throw things out. In our country people throw out dirt or rubbish whereas in western countries, men use them to throw out even their mothers-in-law. When the children are innocent and young, they throw out anything which they come across, even their toys, but when they grow up, they throw out pets or mangoes, bananas etc., and watch the people slipping over them.

Window is also a means for the commencement of crimes. In the prisons, where windows are barred, they serve for flight.

But I have to tell you about a particular window. You cannot throw anything out of it or use it in any way because it's not the window of your room. Anyhow, you are allowed to throw, through it, something inside the room. That's the window of the office of the magazine secretary. Of course the thing you can throw must be an article for the magazine. It's nice and rather lucky that this window is without shutters.

Details of this synopsis are that one day I came across somebody "Excuse me."

"Yes?"

Are you intrested in reading or writing."

"Yes I take a lot....."

Now the eyes of the person start shining.

"Do you really write?"

"Yes, of course".

"Have you got your writings published".

"Certainly."

"If I ask where?

"In various newspapers and weekly magazines."

"What do you write?" Verse or essays?"

"Well! You see I have written letters to the editor, and that I take more interest in reading and thus write less.

"If you read a lot then you can collect jokes or quotations from various magazines. You must get something for your OWN magazine, especially when it will be a silver jubilee number.

I quickly made the excuse that I would not be able to stand the rejection of the article. He quite wiekedly rejected my excuse by saying that he will not be wicked in this respect if the article would be an interesting and of the college standard. Now there wasn't any way left. So I had to make the promise that I'll try my best.

I thought and thought as I wanted to produce something original. I thought of writing

about my practice which I started when I entered the medical college. I cured a patient suffering from allergic menifest ations (because I had also suffered from that). Then I thought that it would not be honest if I over look the well known legends of my un worthiness. So I could not find anything to write.

When I came across the magazine secretary next, he made me remember my promise. I tried to make a new excuse that I've written the thing. I had brought it but I couldn't find him. The he said that if I see the office locked, I can throw the article through the window. So dear readers! I must say good bye to you as I've fulfilled my promise and have to rush to that window, lest the magazines room's door might open and may not be able to use the window as I wanted to.


*With Compliments*

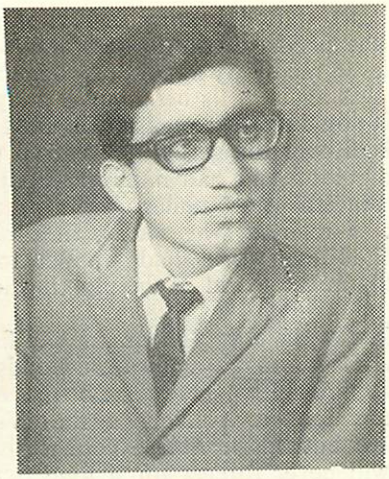
*from*

**ESSO PAKISTAN**

**KARACHI — LAHORE — PINDI — DACCA — CHITTAGONG**

# "The Crimson Fear"

By



ZUBAIR FAROOQ

*1st Year M.B.,B.S.*

THE night was calm but the sense of darkness due to the absence of the stars on the sky was alarming. Indeed alarming! And even more alarming was the bitter struggle the moon was having with the clouds for its very existence on the cruel dark sky.

The wailing of the trees provided a gloomy atmosphere for a fateful autumn night.

The air was cool and dry and the night was one of the darkest ever in Karachi. The trees looked bare, ugly and stumped and the yellowish brown leaves scattered here and there produced a queer sound as they were swept away by the air and the writhing of the branches added to the scene of utter unpleasantness.

Indeed it was a night not for an outing. On such nights one should be contented by one's cosy tenement and not venture out for a stroll.

It was so strange, everything was grotesque and if one would remincent he would realize that he had never experienced such a night in Karachi, atleast not one like this. It was a bit sceptical but one never knows and I could not endure the impenetrable nigritude. One thing was sure; this night was one to be resented and the convuslsion of the trees was not to be cherished.

As if horrified by the conceivable sinister. I turned from City Park to the exit gate and it was then that I noticed my shoes were wet. I was surprised for I was sure I had not walked on any puddle in the park, but why the wet shoes? As usual I had a torch with me. I took it out and flashed it over my shoes. What I saw nearly made my heart rise into my mouth. I was terror stricken. My emotions burst out as I cried "Oh! My God! Blood." My shoes were soaked with crimson red stains of blood. "Oh....What am I going to do now? Someone's dead body is lying in the park and if the police follow the stains left by the blood and trace it to me, then what am I going to do?"

This very thought had prevailed in my mind and I began to mock myself that I was in that part of the park which was the farthest from the exit gate. Eventually I started running towards it, but my conscious pricked me.

"Wait....where are you going? Leaving someone's corpse in the park like this?"

(My conscious gave a wicked laugh) Coward!

(My conscious mocked me with another wicked laugh and said) "Coward. Ha! Ha! You are nothing but a coward. Getting afraid of a corpse?"

(Another wicked laugh.)

I said "No.....No.....I am not a coward. I am not a coward."

My conscious said" then why are you running? Go and do your duty." I said, terrified "No.....No....."

My conscience said "Be a man and do your duty."

Finally my conscious had the upper hand. Curiosity won over fear and I walked towards that part of the park where I had seen blood. I reached there and flashed the torch in every

direction. I noticed a section of the ground heavily stained with blood. I followed the bloody path and reached a place where flowers of different varieties grew.

Most of them were Pakistani varieties such as Gul-e-Dawoodi, Gul-e-Hina, Gul-e-Jaffery, Gul-e-Nasreen, Chambaily and various varieties of Suraj Mukhi all gathered in one bunch in that portion of the park.

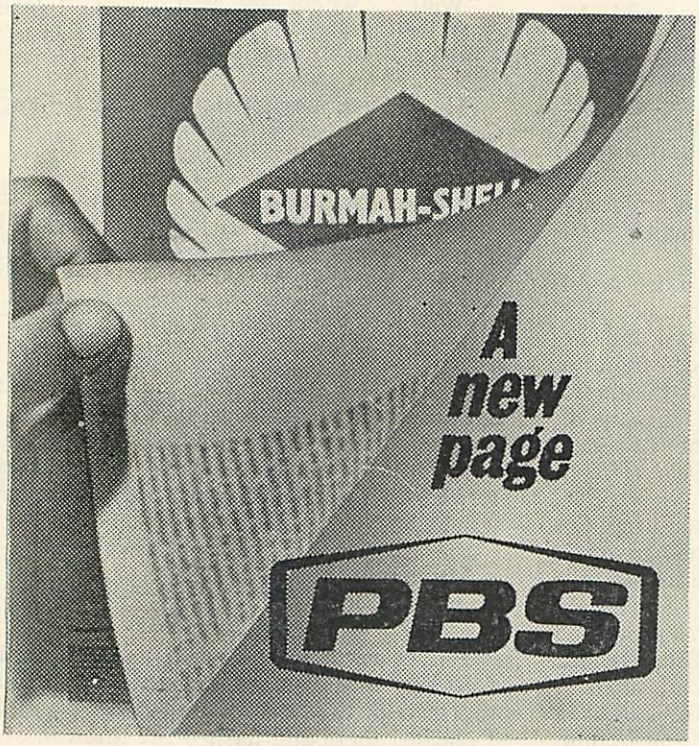
I thought if any one wanted to hide a body, this certainly was the best place for it. I ventured towards Gul-e-Ashrafi, shone my lorch over it, but on its sweet white petal here was not the slightest stain of blood. I ooked towards the flower Chambaily but found absolutely nothing to help me.

I thought may be I had made a mistake in thinking that this was an ideal place to hide a body.

Eventually I started to look over the varieties of the Suraj Mukhi flower and it was then that I felt a cold shudder and I was frightened out of my wits. For yes! The body was there, neatly hidden under them and I could see a leg, in between those varieties of the flower.

My heart started beating fast as I slowly moved the petals of the flowers and what I saw relieved me of my agony. It looked as if Nature was again at its best for the body was that of a dog who with intense pain must have roamed all over the garden leaving all those stains of blood and had finally met a tragic but a peaceful end under these beautiful flowers. I realised why Keats, tired of the miseries of the world had wanted to die peacefuly in the world of the nightingale.

I looked at the sky. The moon had finally won the bitter struggle against the clouds and was now jubilantly shining, and the entire place now looked vivacious again. Vivacious? Yes! but this terrible experience is one that I will never foreget for a long time to come.


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# An Apologia

By

JAWAID AKHTAR KAH

*II Year M. B., B. S.*

IT is an era of modernisation. Drastic changes are taking place all around. Life is surrounded with many a complications. One of the problems of the day is whether students should take to active politics or not. Students are a vast community and, for the moment, I will restrict myself only to medical students and young doctors.

Politics and politicians are two dirty words in our country. We love both and we hate both. We use both and we abuse both. Few will dispute that politics is the game of rich and carefree. Like some who are born with spoon in mouth, we find politics too a hereditary institution. There will be found families where son is carrying the burdon of politics, where his father had left off, and father took on where grand-father left off.

Medicine and medical men on the other hand are two liked things. We enter the medical institution through hard competitive examinations. After coming here we have to study a very lengthy and complex course. Even though we devote all of our time, most of us are not satisfied. After a hard work of 5 years we emerge as doctors. Here another responsibility we face. So much of the research work is going on in all parts of the world and we have to keep pace with all that necessary stuff, if we want to be uptodate.

In the light of the above, every one can very well guess how we poor medical men can bear the burden of the extracurricular activities like politics. Some of the enthusiastic medicos say that they are going to serve the nation by taking to active politics. If they look with an unprejudiced eye, they will soon come to the conclusion that the nation can be served well, if they converge towards their studies.

History has no evidence to suggest that a single medical man was ever an accompalished politician. Actually, politics and medicine have nothing common to combine together. They run parallel to each other and so have no meeting point.

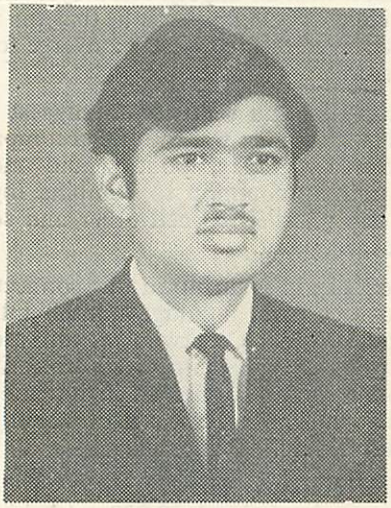
One logical argument, in this connection, is that one can not induldge himself into very many activities. Otherwise his attention will be divided and in spite of his sincerity and interest he will not succeed in his intentions. His capacities, otherwise useful would be lost and his destination doomed.

Our country is already short of doctors, the proportion being 1:10,000. It's high time that we realise our responsibility and try to prove worthy of our profession. We use need professional students rather than professional politicians.

Politics is all right as far as student's problems are concerned. Doctors can fight for their cause on political planks, but such activities should remain confined to the boundaries of the college or, at the national level, through the Association (P.M.A.) As good citizens, we can all contribute to the country politics by being judicious in casting our votes. Nobody is going to oppose this. What I am against is unnecessary indulgence in political matters.

# Service is Human

By



HOTCHAND G. MOOLANI

*III Year M. B., B. S.*

IT is a well known saying that "Service to humanity is service to God". All the religions of the world, all the great teachers; irrespective of race or religion, creed or colour they teach us that self sacrifice and not self assertion is the law of highest universe. What is the object of creation of the world? Why the human being is entitled as crown of creation? The very answer is that man should perform his duties confined to him, honestly with efficiency, alicrity, alertness. The man is considered to be the symbol of love and sympathy, duty and devotion, patience and perseverance, service and sacrifice. As this life is unreliable and every body has to appear before the court of law on the great day of Judgement, one should serve his fellow human beings, serve his nation and country, so that each and every member of the society should be able to live in harmonial adjustment and equality, which entails a social order in which there are equal opportunities for all the members, for education and work, for health and cultural development.

Great are those, who lived and died for their beloved nation and country. The work of such noble and great men is a lesson for others. Their great deeds and devotions tell us that the world is not merely a dreamland or play ground. There we have to be the hero in the strife, to lift the heavy loads to distinguish between right and wrong and destiny of human individual one should not run after one's own mean and selfish interests but render ones services for the poor and sick and for needies, one should search for truth of the things and strive to live in the spirit of truth This real truth comes from service and sacrifice for others, for neighbours and nation.

Life is a series of compromises. One has to live for the sake of others and one has to rely upon others. So, it is worth to work selflessly and sincerely for this purpose and what we require are the muscles of iron and nerves of steel. We pray to God to give us sufficient courage and strength to fulfil our promises and programmes for the maintainance of peace, progress and prosperity and to get rid of poverty and illeteracy.

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# BEAT IT!

By



RUKHSANA IHSAN
*2nd Year M.B.,B.S.*

PUFF—puff—pant! Am I tired? I think I deserve some rest, but the irony of fate is that the minute I stop—pang, that is the end of one's life. I am terrebilly sick of being quiet so today I must talk.

It was on a gloomy, black day, about thirty-five years ago, when Bob sailed forth into this world along with me. Lamentable day, it sure was, and since that day all I have been doing is pumping and panting. Good Grief! I thought "what a terribly boring job it is. All there is to do is to allow that repulsive dirted fluid which the fashionable tongue calls, "Blood" into my right upper territory, and then kicking it into the lower past and out towards the lungs. Trespassing is permissable once or even twice over a certain property of one's own, but oh, no Sir, not for Mr. Blood, for after a passage of only a split of a second, the Tidied Blood comes knocking on to my left upper door!"

It hurts my ego. I thought of protesting, and so I stopped working for a little while.

Lo! Everything around me went cold and poor Bob went blue. Some smart people knocked and thumped at the roof, but I kept mum. I heard them crying, sniffing and blessing poor Bob. Suddenly I felt my spirits to elevate and I swell with pride. "The whole system of Bob's body depends on me! "I chuckled and let the blood flow again

I never meant to go on a strike again and together with the brain I work pretty well. The Brain is quite away but we stick to a treaty—I give him Blood and he, well—he orders me on how to act.

Shsh I hear heavy breathing. "Bello, Buddy, you've been pumping very fast today—calm down."—That is the left lung groaning. "Don't itch me to pump faster-you balloon".

"Gone are your days of working and beating fast, you fibrilated bag," said the lung sarcasticly. It was too much for me so I ejaculated—"You can't talk much, you bacilli—invaded sac."

"Sorry to interrupt your organships," This is the vagus nerve—hell of an interrupter, but, the Brain implores you to regulate yours—elves." Thank you, pale face," the lung panted.

The Vagus retaliated in a calm voice—

I will advise you to culminate the usage of scaldy language, and co-operate with us, for the nervous system has gone beserk.'

It is all your fault—you unworthy organ." The lung whispered to me. Our advice fell on deef walls, and you insisted to flutter and to carry on armorous relationships with another heart. you had no sense about you and you lost yourself completely." I did what every other heart would do. I pointed, "Alright, if you were incapable of ensnaring that insipid the heart you should have braved it all and spared us from the trouble," chimed



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in the right lung. "Ah Brother, he persists to be stupid, do not....."

"Groan. Cut in the liver. "The abscess in me is eating me up. For Health's sake, can't the Brain stop the mouth not to allow that cursed alchohol to enter? My complexion! It is being destroyed! (sigh) Cordo, you have ruined us".

I do not condescend to speak to that vain organ the liver. "You are right again, my dear Hepata," The left lung thoroughly agreed with the liver, "I feel like asking my twin lung to help me and squash this hideous pump, but, woe the Tuberculosis Bacillus has weakened me."

Alas, blamed and cursed I am from all around. A wish I had not missed my beat when I heard a tiny she heart beating in rhythm with me. Many a beat were missed since I got absorbed in Cardmia. Disaster came head long on me and Cardina beat no more, and was silent forever. It was then that the once proud Cards known for his efficiency through out the body lost his well known activity, and got sick.

Bob's Brain came to be known as an absent minded object. The body losti ts defence powers and day in and day out aliens invaded the organs. I fear, I cannot hear it any longer.

Poets praised me to the skies, writers created myths around me. I am the centre of man, and man is the centre of the world. I am the world's most talked object, and am very important for my body; but now I have realized that with every beat of mine I bring tortures and misery to my fellow organs. Today I feel I must put an end to this torment and become stone. So goodbye cruel world!


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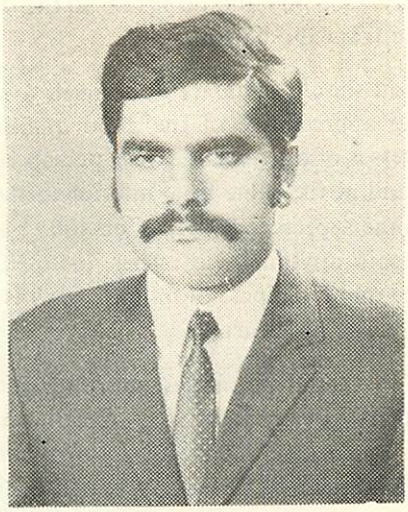
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# Something on Personal Ethics

By

NAZIM AQIL

*3rd Year M. B., B. S.,*

ETHICAL culture includes and embraces all the branches of self culture. Ethics teaches the whole duty of man. All our thoughts and actions belong to the domain of ethics. The personality of a person is moulded and judged by ethics.

Although ethics is divisible into personal and state, they are both inter-linked and one cannot flourish without the other. Here I will, only, undertake the study of personal ethics.

First, and foremost is the building up of one's character. For this parents and also teachers plays a very important role. As an isolated person struggling all by yourself, you cannot make much progress. Life begets life in moral as well as biological realm. Moral growth is a process of suggestion and adaptation and not of ratiocination. One should not be a blind follower, should listen with obedience while the ultimate decision is the acception or rejection of the teachings.

Next, is the virtues of friendship. Friendship is useful not only for ordinary purposes like social get togethers, conversation, mutual aid as in times of troubles, but the highest use of friendship lies in mutual encouragement and inspiration for the development of personality. In case a mistake is made by a friend in a society, it should be rebuked, rather than make it a point of gossip.

Another important aspect of personal ethics is meditation. Daily meditation is as essential for moral health as daily wash is for physical efficiency. In meditation, we should not only pray for the well being of our dear and close ones but rather for the well-being, progress and guidance of the whole mankind.

Now we come to the virtues of personal ethics. The foremost in this regard are earnestness and unselfishness.

Earnestness consists in choosing development instead of pleasure as the principal aim of life. Pleasure allures us with a fair but false light that brightens the path but at the end of this path are ignorance, disease, frivolity and stunted personality. Those who choose pleasure as the way of life are disinclined to exert themselves sternously in any way. They hate mental and physical exertion. They catch the froth and foam on the surface of life and are too lazy to dive in deep for hidden treasures. They make everything easy for themselves. By choosing pleasure you may have fun and frolic but you will remain a dwarf in mind and soul. The development of personality is the aim of all earnest men. If we lack in earnestness we are more like an ape than man. If moral development is sacrified for pleasure than one will never feel the happiness and exaltation that are gifts of love, self discipline and aspiration.

The social bond makes us responsible for all as all are for us. We should not grudge for our money or time when others need it, If we are educated then we should try to spread our knowledge to as many and as far as possible. Democracy without education is the rule of knaves and fools.

Now we come to another important point and that is "patience". We should be patien with all especialy with those who are ill tempered or have a bad nature they are the victims of heredity and lack of education. Anger cannot help things rather it stirs up your personality and brings up all the mud and slime from the bottom.

You should cultivate in yourself a habit of being appreciative of the good qualities and successes of a person. Every person is superior and at the same time inferior to the other in some aspects. By being envious one does not gain anything, he rather losses his own peace and happiness of mind. Envy is a vice that yields no returns.

You should be modest and must not over estimate yourself and see yourself with your own eyes rather than with a pair of magnifying field glasses. Modesty is the antedote of pride and vanity. You should learn modesty with comparing your achievements with those of great people of the world.

One should also cultivate in himself the love for justice. Human society is like a herd of beast, not founded on justice. In the jungle the strong prey on the weak. But justice is the glory of man and his civilization. Justice gives everyone his due share. She is the guardian of organized society, its surest defence and rampart against disorder and violence. Love of justice is a cardinal virtue that must be cultivated as it makes one conscience of the rights of the others. It will make one an alien and a stranger in society but one must not be afraid of that, if he has to cultivate love of justice in others.

# KHANUM—BI

By

ATIYA SHAREEF

*and*

AISHA MUZAFFAR

*III Year M. B., B. S.*



CORPULENT, old, with a very wrinkled countenance, greedy eyes, she smiled and an equally sly "Thank you". That about gives the description of Khanum Bi.

When I first saw her, I thought her an object of pity for she could hardly walk and remained bed to an iron bed, the whole day satisfying her voracious apetite with all the food she could possibly get hold of. Her only domain was the telephone, which I later found was a handy insrument in her hand through which she bullied people and extracted as much money as she could out of them.

I first met her when my mother phoned me from home (anxious to know how I faced the first week at the hostel) a loud hoarse voice penetrated my ears calling my name. I came out of my room and saw Khanum Bi beckoning to me. "Kya Hai Khanum Bi," I asked gently as I came towards her. "Khya Hai, Telephone, *hai aur kya hai*?", she said angrily. I went into her room grumbling about some throat trouble and not being people's servant. Her anger made me angry too, all the sympathy that I felt towards her was momentarily gone, but I later found that she screamed at every body for no reason and meant no offence. By that time my anger had cooled down too. I looking at her from my room, I wondered what she must have been like when she was young, pretty perhaps, but surely her nature must have been a different one for in her eyes I could see a flicker of kindness, in her smile a touch of ladness, and in her walk a weaviness not that of old age, but defeat. Then what were the circumstances that moulded her nature? I wanted the answer from Khanum Bi herself.

A few days later my friends decided to make some pudding. For quite sometime I had wanted to speak to Khanum Bi but I did not know how to go about it for her mood was very irritable and I feared another rebuke. The pudding gave me an idea so I took her share to her hoping the sight of it would soften her a bit. The result was amazing for with a "*Bibi ye mere leyea hai kya*" she took the plate unceremoniously out of my hand. She

made me sit with her and started chatting in a most aimable manner, but when I tried to make her talk about her past, she brushed the subject aside. I was not so friendly any more, therefore I excused myself and came back to my room.

With my busy college life I soon foregot all about her and one day with a mind to dust my room I went about the task of searching for a duster when an *aya* came in and said that Khanum Bi wanted me. I wondered why, but went any way, and was shocked to see her pale face and sunken eyes—she seemed to have been ill for months. I sat be side her, I tried to talk but she was restless and obviously wanted to say something and suddenly she said "I know once you wanted to know my past, I will tell you today. And as she narrated her story, looking into her eyes I felt as if she had gone into the past to recall every moment of it again.

Her childhood had not been a very happy one, her mother had died at her birth and her father had remarried. Married off at the age of fifteen to a man she did not know, she was happy to leave home full of hopes for the future, I think that was the only time when she was really happy. Her husband never cared much for her, and her desires to be cared for and loved were never realised.

Ten years later came independence and in the riots she lost her husband and barely managed to bring herself and her 3 sons across the border. She worked hard to bring them up and educated them. and started looking forward for a better future but destiny had not yet finished with her. Her children now grown up are well established and look down upon her and are ashamed of the poverty which surround her, specially since they have married in better families, so that they presume their past to be dead, and with that their mother too.

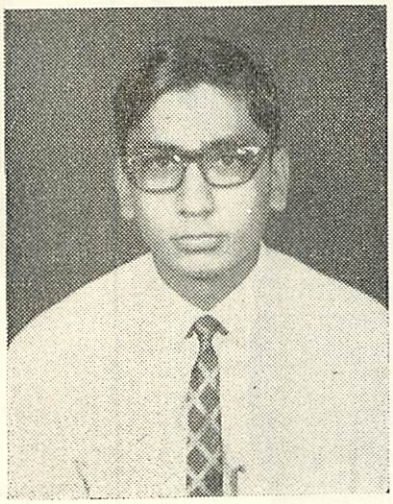
Left alone once more and bitter than ever before, fate brought her here and she dissolved her misery in food and released her spent up emotions on every body around her.

As I came out of her room the doctor went in, my mind was in a turmoil and I thought Oh God! how many more must have passed through the same and yet had courage to pull on. How many were carried away by the stream of hopelessness, and how many fought back to emerge into a world which would give them nothing but more miseries:(—hope perhaps!).

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# Critical Anatomy of a Modern Gril

By



Dr. ZAFAR HUSAIN
*M. B., B. S.*

A boy was called naughty before
And all the abuses he got therefore,
A girl was then an innocent Nun,
And got the admiration of everyone.

In her Buffo there is a Rose,
On her face there a Pose,
She has no interest in poetry or prose,
An only to theatre that she often goes.

Thus with that fancied tear's spear,
Orwith an "Amson's" butter smear,
She changes the examiner's mood's gear,
For male examiners—Oh' there is no fear.

To drive something into her brain,
Will only result in your brain's drain,
For her cranial cavity is so very dense,
That she totally lacks common sense,

But a modern girl—Oh' Boy'
She thinks that she is so very coy,
That in this world many a guy,
For her would even willingly die.

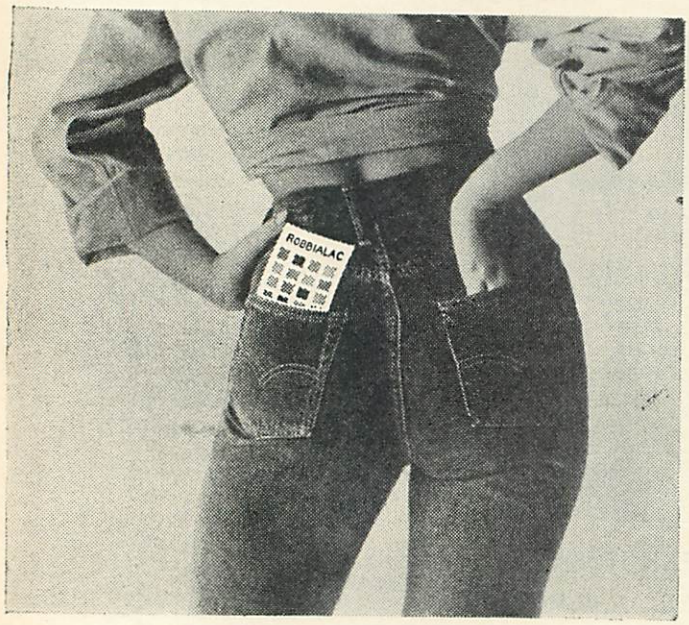
Then you may ask how the hell,
She passes exams: so very well,
But in her she has that fancied tear,
Which to the Examiner's heart is a spear.

Low for her is like a play,
Which she practices every day,
That is they often will say,
To be social, happy and gay.

The girl's common room in any case,
Is a good and lighting place
Or atleast a place to powder their face,
Especially in the crucial examination days.

Mark my words Dear Boys!
If the girls continue the present trends
In future chaste women be so scarce,
That marriage would be just a force.

# Don't just stand there-do something!







## Something!

Choose a mood...Choose a wall. Choose a colour...Careful now. 62 ready to use fresh colours- each to mix and match with all your moods! Decor at once assumes a new dimension. So sleek. So pleasant. So soothing. So vibrating. That's VIP plastic emulsion paint...the new Robbialac quality emulsion -easier to clean, harder wearing. Smoother, more sophisticated finish.

Give your home the VIP treatment

***Thank goodness for colour!***
***Thank goodness for ROBBIALAC!***

VIP-3

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# SOLITUDE



By

Dr. DURDANA MOID

*M. B., B. S.*

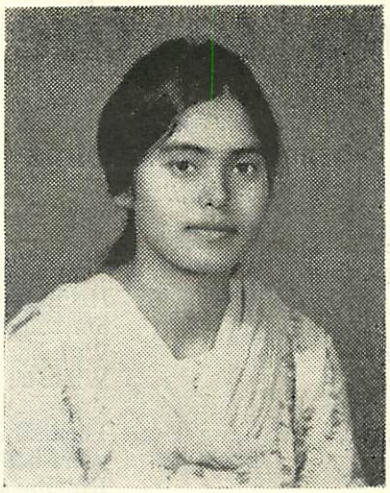
I walked along the sea shore,
The sky was clear and blue,
I held your hand in mine and felt,
So very close to you.

There were no clouds as in my life,
I fancied at that time,
The shore was gay with misth around,
And youth was at its prime,

We talked of what our future held,
And what the past had been;
I did not know I had talked outright
To one who was unseen.

The seagull's startling cry I heard,
It woke me from my dreams,
I looked for you, but could not find,
Oh, hero of my dreams,

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Amin H. Karim MD



# "NOT TO SEE"

I tried the path in an aimless way,
Can't proceed a step without a sway,
Other's I listen tread on faster than me,
For I have heard they have the eyes to see,

What for I am deprived of the blessings,
For I have the eyes but not to see,
How my inner souls cry out in dispair,
Alas! there are none to see my tears,

And none to care for me a bit,
Silent thought I am with that treat.
How I envy the lot with light in the eyes,
For I am plenged in the darkness till I die,

Luckier are those who have the eyes to see,
And look at me who have the eyes but not to see.

# "Conspiracy of Nature"

By
JEHAN ARA JANU
*Final Year M. B., B. S.*

I have friends who are
No more with me,
I lived a life which is
dead to me now,
I had wishes, wrecked
By the cruel nature,
Man's ship has innocent start
nearer to reach the shore
For some get lost before
you reach the peak,
And some are never to be seen,

# Shadows in the Night

By
Dr. NOMAN SIDDIQUI
*M.B.,B.S.*

Whenever fullmoon blooms at night.
I see two shadows walking,
They walk together
For hours altogether
Holding their hands so tight.

I see him now holding her face,
His hands trembling with love,
Her eyes are closed
Her lips are part,
While their hearts are running a race.

I used to see them everytime,
Coming and going together,
Yet I can swear
I used to fear
Their love might wear with time

I do not know what happened there,
Between the two of them,
Or what was wrong
Or their love wasn't strong
To hold them close and dear.

They sit on a bench to take some rest,
His head on a pillow of her lap,
She smooths his hair
With her fingers so fair,
While he lies calmly in the nest.

Then all they could hear
Were bells everywhere
Ringing with all their might.

I thought I was wrong in thinking so,
As true love never dawns,
But why is it
Now they do not sit
For hours and hours to go.

Now whenever the moon is in full tone
I see myself walking
And my shadow all alone.

# "The Present"

Oft have I thought when I shall die,
And people will burry me in my grave,
Where I shall sleep, Where I shall lie,
Till God will call me to thesky.

They do not know now what to do
Or how to solve this puzzle,
Well, taken to God was I for a Cue
For he can now only say whereto.

There they weigh my good and bad,
And They come some-how equal,
To heaven as such not you my lad
To put me in hell will be so sad.

What have you brought for me he said,
From the world you have been to
I gave him what I always had,
With all the hope he won't be mad.

He goes to heaven and not to hell,
Oh Yes Almighty but why, do tell.
To heaven he goes due to his art
For he gave me nothing but a shattered heart.

# " *THE DEAD* "

By

Dr. ZAFAR HUSAIN

*M.B.B.S.*

Medicine is no doubt a noble profession
But I should make here the confession
That the poorest of the poor save the nation
Though it may sound like a paradoxical motion.

They are unclaimed at the last travel
But devoted for noble cause the life's novel
In which I try to pen their sacrifice
But even all my power can't suffice

They have given up their last treasure
Of which the value we can't measure
Touching the depth of nobility indeed
not in theory, but in deed.

The broken and disturbed parts
Are knowledge carrying carts
In which we are passengers
Receiving Medicine's messengers

For this only, feel I, their breath ceased,
Whom the misery in life chased
Day by day the woe increased
In various angles the life is teased

They always struggled and toiled for others
Of whom, no doubt can be proud their mothers
Image of purity their action and thought
Marking them noble but death caught

Who make us doctors?" I ask myself
Trying all the prejudice to engulf
And answer then. It is the dead
Who by poverty and misery are bred

When I first entered the hall
They were lying supine all
With hands stretched and legs spread
Telling me I have to tread.

They talk in their own dialect
Much of which I oft recollect
They stare at me straight into eyes
Reminding me of poors' cries.

Their looks pierce through the dark weather
Go higher and higher altogether
Dear ching for their goal in Heaven
Looking the world's ground uneven.

Their blood clotted to make our blood
Run fastly in life's flood
Not being drenched in it, but
To save them who are in woes put

Though they pass away, for us they care
Giving up their bodies bare
For they want the world at ease
And make us doctors for pains to cease.

# "HEROIN" [diamorphine]

By

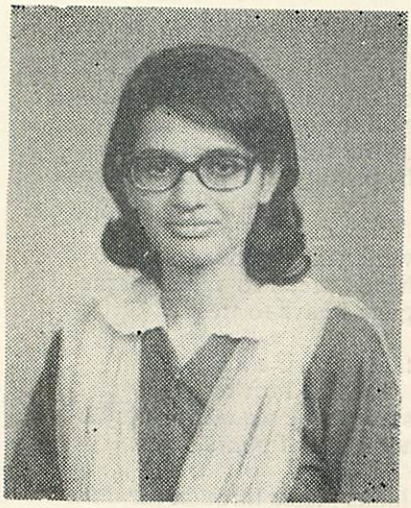
ZAINUL ABIDIN

*2nd Year M. B., B. S., HYDARABAD, L. M. C.*

Thy name is Analgesic,
Thy actions are Anaesthetic,
Thy features attract me as Hypnotic
Your voice acts as Narcotics.
Although I know,
You are not mine,
But I am your addict;
Believe, for me,
All the girls are emetics.

# Dilemma for a Friend

By



ASMA S. QURESHI

*IV Year M. B., B. S.*

She stands upon the threshold
Her expectant eyes on my face,
Her ears straining to hear,
Her thoughts searching my mind
Waiting for my word!

What may it be?
That may seal her fate and mine!
So close to each other
And yet so far way
Into a world of gloom,

A life of deceit and lies
Of illusions built to be broken
What may I say———?
That she may not turn away

And close the door behind her.
What can I give her?
Except my friendship————?
But will it be stronger

Than the mirage?
That she is being shown yonder.
After which she will run till eternity
And when she realises the futility,

It will be too late———too late!
for she will have closed
The door behind her!

# "MAGNIFICENCE"

By

HUMAIRA BEGUM
*2nd Year M. B., B. S.*

Bathing in sunshine, beside the flowers,
Gleamed in radiance, bussings showers,
Deers drinking water from the twinkling rill,
Deers running down from a steep low hill,
They ate and drank and home wards ran,
And happily reaced with skin all tan—
Jumping gallantly, stopped, the roes,
When heard the barking of fierce foes,
All scared to death stood still as a stone,
Not a quick whisper—not a meak moon;
Then turned to their leader, a hundred eyes,
Who stood among them—royal and wise,
With a quick decision pointed right,
Where lofty trees, no trace of light,
With grateful looks they sprang over there,
As life is dear—one has to care.
With conscious ears and lager nose,
Watching as the last one goes,
Standing with a dutiful pose,
"They are out of danger—far from foes.
A growlsclosely, trembled the dear,
And he horror of the fear,
Of being grabbed by wolves—ran for life,
But Oh! ook late—too late to survive,
For six wtld wolves with eager teeth,
Made him fall, he hardly could breathe,
Their teeth went down his slender neck,
A fountain of blood—their skin all wet.
They left him soon and there he lay,
On the deep stained grass—his strength away,
With all his might, opened his eyes,
Saw the east dusk with deep sad sighs.
On his nose dropped trickles of blood,
And helpless tears on the soil were stud;
He looked at the place his fellows hid,
Then a silent farewell—forever he bid,
I've done my duty, the least but best,
Now in place my soul will rest,
You'll find a leader—wise and good,
And forget me soon—you all should.
Then a struggling wave his body bore,
That broke like ripples on the shore,
With closing of his eyes, the sun went down,
And night grew cold and wind was sound.

# Ban the Bomb



By

FAUZIA QUDDUS

*IVth Year M. B. B. S.*

That's how it was,
That's how it'll be,
With no one left
And nothing to see.

As was in Nagasaki,
And Hiroshima too—
Anywhere else as well,
With atom, and in hell
Land us all the faster,

Think not so the masters,
That they will join in too;
And make a merry fire,
Though thats not our desire,
Warning lands be not us,

So exclude us from the fuss.
Since you cannot fire,
Without making our bonfire,
So Ban the Bomb,
And end the war,

Both the cold and the hot,
For though the hot burns and destroys,
The cold long preserves and is none coy.
Perfectly happy be not us,
But prefer this state to being trussed up!!

# *Her Bounty is Boundless*

FAUZIA QUDDUS

*IVth Year M. B. B. S.*

The morning glow pierces the shadow of night
The stars disappear as the sun comes in sight,
Preceded by dawn which brings in its light,
A farewell to dark thoughts and goodbye to frights.

The sunbeams are messy, the frolic, they're bright,

They dispel the mist very fine and so slight,
There twinkles the dew she's a queen in her right,

But as day climbs higher she fast takes to flight!

Oh, hurry! Oh huny spring's come she is new
She's taking her bearings you can look in too,
On her new dress, wonderful what a view!
Could ever you dream how these colours she sew?

She's wearing the blue of the sky, very high,
The soft cuddly clouds make her shawl passing by,

Her emeralds the leaves as on velvet she lies,
The world holds its breath, wind escapes as a sigh.

The roses her rubies and diamonds the dew,
The stuff golden sunlight, beautiful, no jew,
Compare with her treasures his hoards so few,
With magic she turns everything into new.

The air is so fresh and so fragrant with day,
It's calling you out, so come out and be gay,
Spring is blooming, at its height and the blue jay,
Is having the time of its life, naught to pay.

Life is vibrating, there is so much to say,
Every heart is blooming and there is a way,
To get what you want, go where you will-you may!
Happy and joyous, merry, loughing and gay.

Spring has arrived and she is leading us right,
With a promise of boundless bounty so bright;
When her beauty unfurls gently in full way—
And we're happy again till the end of our days.

# MY ANSWER

By

MUDASSIR M. DAR

*4th Year M.B.B.S.*

As I scrawl these lines
Your plea, those plaintive words
In haunted vale of my perturbed mind
Are still echoing
Last evening, when shine of lagging sun
In Birds' weary eyes
Was gradually dimming
The air was squeaking
With receding steps of
Panting day—parting day
Your supple hand
Breathing in my hand
We strolled leisurely
On velvety grass
We both were quiet
Till you stopped for a while
Your glistening eyes
Eclipsed with cloud of tears
Through tender lips
Quivering perhaps with fear
You besought,
"Why don't you adore me?"
I gazed in your sobbing eyes
Oh, only my answer
They'd need, I thought
But something from inside
Refrained me
And under lamenting shades
Of your damp lashes
I walked away
And as I scribble this letter
Though again something from inside
Refrains me
I dare tell you my answer:
"Honestly I tell you sweetheart
Possibly I can not belong to else one
Not even you, the dearest one
Until I learn to belong to myself
And that I do not do, a s yet."

# CADAVER OF LOVE

By

ABDUL SAMAD

*4th Year M. B. B. S.*

O'my lovely dame, O'my silly dame,
After 24 hours love with you,
This fact I came to know,
That it is of no use,
To love any more with you,
Because you are so hard,
And exams are approaching fast.

Keeping all these facts in mind
I wish to make you remind,
That I'll postpone my love,
For next coming 4 months,
With these conclusive words.

I'll forget your blue eyes,
I'll forget your rosy cheeks,
And also the delicate lips,
And keep a heavy stone of patience,
Right over my injured heart.

I'll close all the doors,
As well as all the windows,
And also the ventilators,
Of my tender heart.

And wherever I will be,
Your memory will always remain with me,
And as long as my heart will beat,
It will call you with every beat.

I'll forget once I loved you,
I'll forget once I cherished you,
I'll forget once I prayed for you,
In short I'll forget you in all.

With these few humble words,
I make halt my train of love,
With the hope that my sweet heart,
Will surely take a due regard.

O'my lovely dame, O'my silly dame.

# "OUR GUIDES"

*Anonymous.*

(*Impressions of a New Comer*)

Shivering and excited we entered the place,
There before us they sat down with grace,
We tried hard to sum up each new face.

I. He was not very tall who came up and spoke,
He spoke with confidence for words did'nt grope,

He welcomed us saying,"You 'll work hard I hope",

We summed up his character in not very long,

We soon saw his sense of humour was strong,

A diplomatic dictator and I know I'm not wrong.

II. In a hurry flurry she came and sat down,

'My car had broken in the middle of the town,"

Sorry I'm late, she said with a frown,

In the times to come she proved to be good,

Though reluctantly I'll add it depends on her mood,

Ma, am's advice to us was your genes you must hood.

III. Next introduced was a quiet man to us,

Introduction, a help full teacher who'd never create a fuss,

There was a air around him that won him our trust,

He was a true gentleman we soon came to know,

He was the sort who's respect would grow,

This opinion though hasty didn't suffer a blow.

IV. Next brought out was an oddly fair face,

Was he one of us, he seemed out of place,

His countenance though right lacked much grace,

He belonged to the great Mangolian race?

But no————

He was the efficient most teacher we learnt in a day,

Of teaching they say, he has his own way,

Attendance hurry or it will be the devil to pay.

V. He says" Hyper-pro-tee-nimia" in the real national way,

And "We the Biochemists" his favourite say,

He'd talk of Pultan madan and lots every day,

Not at all a bad teacher if suggest I may.

VI. "The History of Medicne", Hmm, our gore fathers said,

And he'd go on talking of the long forgotten dead,

Until reluctantly one developed a pain in the head,

But history of Medicine became interesting towards it's end,

And quite willingly, our ears we did lend,

Superb was the way the ancients Sir'd fend.

VII. Hepatectomy was what we heard him-saying first,

Towards the end of the lecture, "Plasma proteins", Ugh words, worst,

Untill with the "anti-haemophilic factor"
we were about to burst

Of his teaching we have no complain
to make,

His excellent expression keeps one wide
awake,

A gentleman alright and no fake!

VIII. You've no rhythm or rhyme he'd say with
disgust,

If you talked in his class, with anger he'd
flush,

He doesn't like the tendency to talk so
hush,

At dinning stuff in one's head he's not at
all bad,

One of the good teachers we've so far had,
"Red shirts and red", he's funny, by God!

IX. One, walks into class then stares into
space,

Is he in this world though there seems
rare trace,

Imagine he looks right through one's face!

Microscopy remember, the home
made ace!

**Lastly,**

With respects and apolgies!

We do respect them all,

For they're" our guides" Is Law!
their call!

---


*With Best Compliments*

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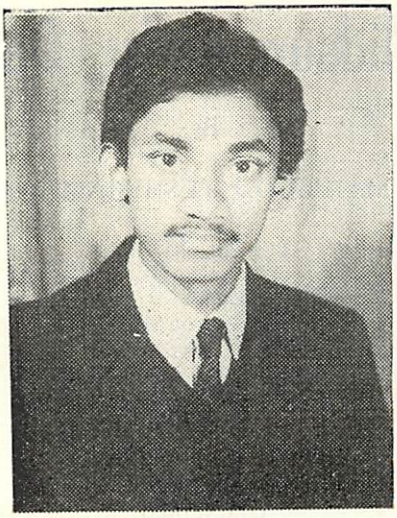
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# THEN WE WILL BE IMMORTAL

By

MD. MOKHDUM-E-ALAM MUSHRAFI

1st. Year M.B.,B.S.



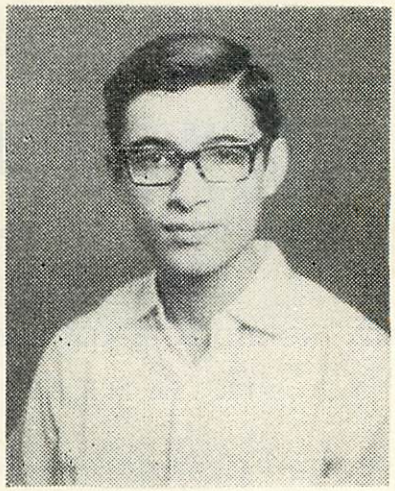
When we hear
The rackless sound
Of breath
Of the fearful
Death
We begin to please
God
By the wicked pray
For our life
As anoilless lamp ray;
It is the Best Sign
Of our slavery
Of the drudgry;
But—
We are the man;
The best creation
Of the heaven:—
Why should we
Make cry?
We will invade
The empire of "Death"
With a emphetical Breath
Of Laugh;
Then the death
Will come to our hand
And we will be
Immortal
In the history
Of man!!

# Midsummer's Day

By

MAHMOOD PESHIMAM

II Year M.B.B.S.



I,
Know not why
But in this town
So true a summer's day
Be cursed for its charming heat
But yet if thou doth ask
My very soul within;
This it reveals
Undaunted

Heat,
If it be
Is quenched,
But by the breeze,
The filters through the trees
To but soothe the worries,
That it drains away
Endowing bliss
Ardently.

Zenith:
When spy
These shining eyes,
The vastness is but king
Serenity—its palpable shadow
Arouses none, but the soul
Enchanting joy,
To but bring,
Novelty.

Enclasped
In that domain
Of fathomless blue
Teasing the lust for beauty
Stealing the picture from thine eyes
Behold! a few scattered cotton
Make the blue silk
Decorated—to
Fabulous.

Clouds
That do travel
Come from where? who knows,
In that gorgeous sea above
Slowly pushed by puffs of wind
Soundless and ceaseless,
Well beyond sight,
To destiny,
Unknown.

Light,
so very much
Is their thought
That gravity but ceases
For the soul to give them company
To see the world from above
But forget what troubles
This heart below
Constantly.

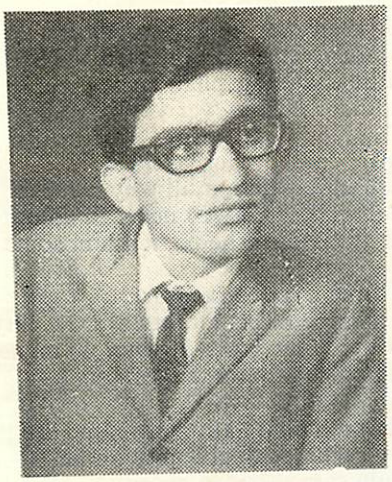
Beauty,
May momentarily
But soothe the mind
And even live till eternity;
Alas! the beauty of this world
Cannot change ailing facts
That do mar life
Bringing sorrow
Mercilessly.

# The Little Angel

By

ZUBAIR FAROOQUI

*1st Year M. B., B. S.*



One sunny evening Ihappened to pass
A solitary figure kneeling on the grass
His attention strictly to his prayer set
On a shabby, torn grave yard mat

I entered slowly by the door
AsI wanted to see still more
The boy was dressed in shabby dress
His face so dirty, his hair a mess

I silently approached the solitary weeper
As grew quickly the mystery deeper
I saw at once, he his prayer said
Exposed a garland that he now held

The beautiful garland on the grave he kept
Then slowly away from it he stepped
I walked ahead towards the grave
Nothing was written on the epitaph save

Here lies someone who we know
Still with us though not so
With no identity to ever show
Of any relation to pray for her soul

She's no one to weep, no one to moan
For her, as we for dead of our own
So O kind stranger stop once by this stone
And pray for her soul as it be our won.

I couldn't stop now for the child was far
I tried to follow him but late be the hour
So I again went, on my way
For today it be impossible to stay

For a week or so this figure I saw
Whenever I came, whatever the hour
Till one day when to the grave yard I came
Strongly today it did not look the same

The little boy was no where to be seen
There was no indication whether he'd been
To the graveyard this day it be
So I resolved to find and see

I searched for him long and wide
I looked around side to side
But I could not get the glimpse of he
The little angel who looked, to me

I silently tried to retreat out
Near the doorway sat an old man stout
He asked me what did me here
To roam about the graveyard near

I asked him whether he had seen
Where my little angel today had been
To which he looked at me, with a smile
He used to come here for a while

Where he be gone, naturally asked I
Always at this time near here he'd lie
Why did he come to the grave a s such
Which showed no identity at all so much

The old man replied with a cool smile
As I said, he used to come for a while
Be summer, be Autumn, be Winter or Spring
This be the place the little boy'd sing

He used to be here, night and day
And here only he'd always stay
I interrupted in a hurry and I said
Why he'd stay here, that poor lad

The old man replied he was small
Too Small to stand by the wall
This little chapan orphan be
His mother killed in war you see

This little chap on her lap he'd lie
Did not understand at all why
His mother disappeared never to come
To the grave yard she be, tell him some

So he came to this graveyard to stay
Get a glimpse of his mother ever he may
And weep at the grave of who, no name be
Hoping one's his mother you see

People who come to the grave and see
Some kind hearted have pity on he
Give him some alms in charity
And always a sweet garland buy he

Then to some unknown grave ventured he
And let the garland at the foot be
He knew nothing of food or time
Occasionally I shared with him my lime

Then good old man, I again asked he
Where my sweet little angel be
Who looks to see, to find his mother
In a name less grave without ashudder

The old man replied his tone low
Your little angel you'll never know
Today he half starved made out his way
To buy and bring a garland he may

A sweet kind sir gave money to he
So out making his way he went, you see
A small cat caught in the middle of the road
When a speeding car that way quick showed

That little angel to the rescue went he
And saved the cat, I think you see
So certainly to a short walk want he
And returned to the grave yard soon be he

I asked silently having a hope new
Where was he then, he of the few
Whose love and affection was so great
That it could never finish at any rate

He replied, as I said it he
To the grave yard, returned he
And many were the people with him who came
None who knew him or his name

Yes to the graveyard back was he
Not to moan, this could not be
Forhe'd come to join many as he
Wholly here, still nameless you see

I saw a beautiful garland on his grave kept
So sweetly distinguished from the rest
I walked nearer on to the grave
Nothing was written on the epitaph save

Here lies someone who we know
Still withus, though not so
With no identity to ever show
Of any relation to pray for his soul

He's noone to weep, noone to moan
For him as we for dead of our own
So O Kind stranger stop once by this stone
And pray for his soul, as it be our own

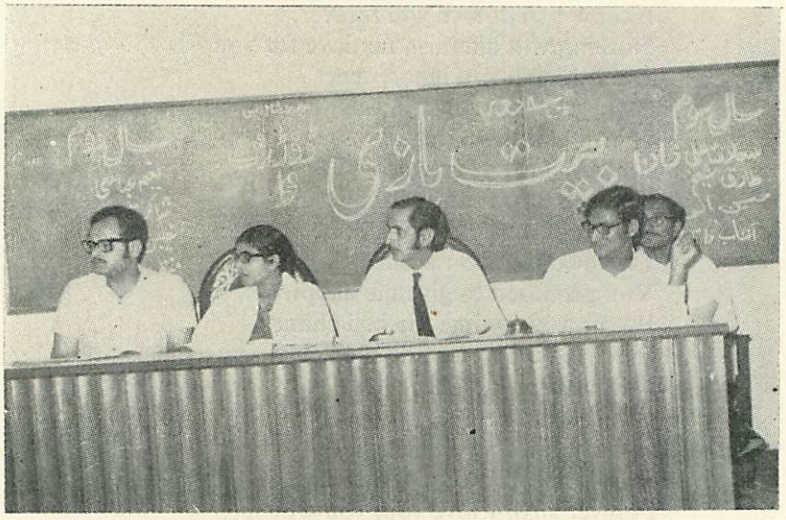
*Anonymous,*

# DURING LOVELY HOURS

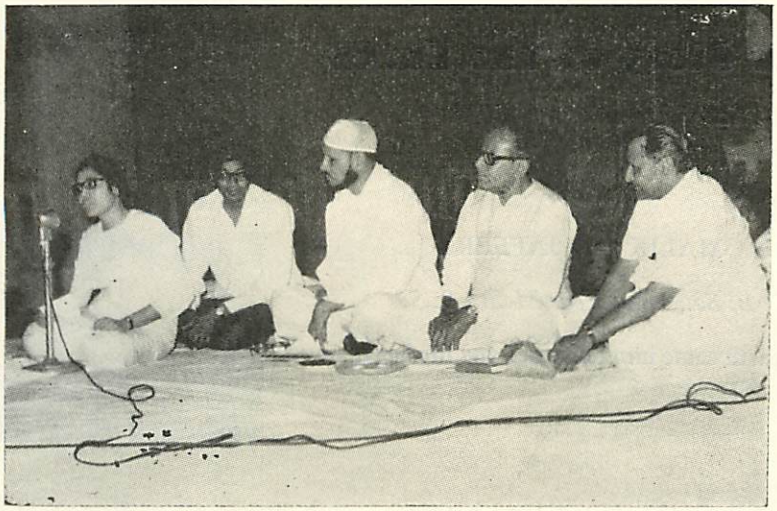
A day has never passed,
A night has never gone,
When I do not think of you,
But of course dear—
You do not care that I sit and mourn,
Are you honey that much vain,
Is your love no love at all,
Don't you care that today,
I lie at your feet and weep in pain,
When I remember all the things,
You ever said to me
The tender feelings and the kindness,
You showed ever so graciously.
Thinking of the future,
When late at night we sat together,
You always assured me,
Honey I shall love you forever,
When you begged and begged and begged
from me,
The one thing I could not give.
And now that I have given it,
You throw it away cruelly,
Without caring in the least,
I know I shall love you forever,
Nothing will diminish my love for you,
Even though you ignore me,
As if I am no longer in this world;
A bird chirps—a dog barks
I always hear your voice,
It lingers in-cessantly in my ears,
And goes on a rumbling noise,
I know once upon a time,
You promised to give me happiness,
But now everytime the bell chimes,
It brings memories full of sadness,
Is it nothing to you,
Is it a forlorn hope,
Have you forgotten honey,
That you ever whispered to me,
Forever shall I love you, you will see,
Though I do not know the answer,
I sit at my path and wait,
For the day when you will return,
But I am afraid that day will be too late.



*Mr. Teepu Siddiq Qureshi*
*Lit. & Deb. Secretary*
*D. M. C. S. U.*



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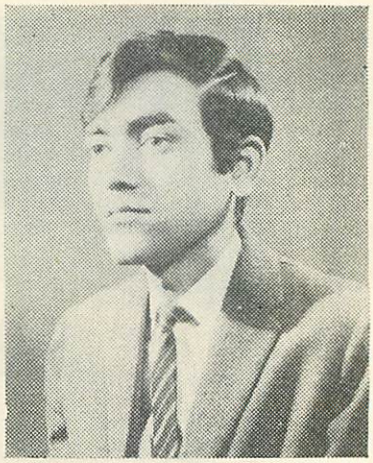
# The Story of The Earth

*(Man's Evolutionary Stages and The future of Man.*

By

MALIK A. JAFFERY

*B. Sc., Final Year M. B., B. S.*



**How earth came into existence and life began on it:**

IT is said that earth existed long before there was any form of life on it. Scientists believe that the earth came from the sun There were certain centrifugal forces in the sun which threw all the planets into the space around the sun. In the beginning there was no water and no atmosphere on earth. How conditions became favourable for the existence of life on earth, is not known. It is said that life began on the earth when conditions were favourable for it to begin. As far as the earliest forms of life is concerned no evidence is available about it. Fossel study shows that the earliest forms of life were algae and bacteria and simple unicellular animals. Later came the fungi and worm-like animals. Then some kinds of invertebrates came. On the plant side, only those plants that lived in water were present. Then comes the period during which rock layers in the earth's crust formed, and this era is also divided. This era is of thousand of years duration. During this period there were only sponges, oysters, earthworms, some vertebrates, and fish-like animals. The first vertebrates to appear in this era were amphibions, which dominated the land and then reptiles appeared. On the plant kingdom side, huge ferns and other plants such as horsetails and club mosses covered much of the land surface of the earth, there were huge forests of these plants. These conditions remained for hundreds of thousands of years. By and by, the reasons about which nothing is known, the surface of the earth began to change and climate became less humid. These huge forests were buried. During these days conditions on earth were such that these forests were preserved instead of decaying; upon these forests more and more layers of earth were put. Through the action of intense pressure from above. and heat in the earths crust, the huge forests became the coal beds of today. One can imagine what incredibly huge these forests would be, which are supplying us coal still today in nearly every part of the world.

**The age of Dinosaurs and the Ice age :**

Rock layers show that there were 20 different orders of reptiles, only four of these have survived to the present. These reptiles roam-in the forests of coal age. They became very big in size, and some of these reptiles developed into the largest land animals ever existing on the earth. These are known as dinosaurs. They grew to more then 100 ft. in length. Some weighed upto 75 tons. Some walked on four legs, some stood partially. The largest

unimaginable dinosaur, would have weighed as much as a whole family of modern elephants. Their legs were like the trunk of trees. In comparison to their size, their brains were very small but quite adequate. Many had accessory brain due to their large size, which was situated at the tail ends of their spines and was used to co-ordinate the movements of the massive limbs. Recently in 1870 a huge lizard remains have been unearthed in Wyoming. It had a small accessory brain nearly of a hen's egg size situated in the tail end, and also a nerve centre ten times larger near its hips. The Chicago tribune published a poem in honour of the lizard:—

You will observe by these remains.

The creature had two sets of brains,

If something slipped his forward mind,

It was rescued by the one behind.

These huge reptiles survived more than 80 million years, their main weakness being their blood not their brains. They had no ways of regulating the temp. of their bodies. Scientists differ as to how dino-saurs disappeared. Some say that the early mammals that came into existence during the age of dino-saurs may have eaten or destroyed the eggs of the dino-saurs, this may be one reason. Glaciers covering hundreds of square miles have moved across continents. These glaciers advanced, receded and advanced again, carrying soil, sand and rocks and deposited these in large hills as they began to melt. They also cut deep gorges and left depressions which formed many large and small lakes of to-day.

These glaciers brought many changes in plant and animal life of the glaciated and nearby regions. During the many thousands of years required for these ice sheets to advance and recede, many living things which were previously tropical survived by adapting themselves to the cooler temperatures. Some living creatures moved to parts of the continents, not invoded by glaciers and as warmer temperature followed, glaciation tended to advance north again. As these extra severe geological changes produced rising continents and falling temperatures, jungles and dinosaurs vanished together. Smaller glaciers may be seen in the United States, in the Glacier National Park and Rocky Mountain National Park.

**After the Dinosaurs :**

During the days when the dinosaurs dominated the earth some repties deveioped wings. Biologists believe that ancient birds and the present day birds have developed from flying reptiles. Aricheopterys was one of the earliest forms, it had feathers like a bird but tail like a reptile, strong teeth and claw like feet extending from wings. These forms existed 100 million years ago. Birds have had a long history on the earth. Birds and mammals appeared about the same time. These were the first warm blooded animals while fishes, amphibians and reptiles were cold blooded animals. Warm blooded animals are better able to adapt themselves to changes in the climate. This is why birds and mammals survived the age in which reptiles became extinct. On the plant life side, seed bearing plants were known to be present.

**Age of mammals.** (*Man's early ancestors*) *The "Prosimians."*

They existed for a very long time before they became the dominant forms of life on the earth. Some of the early forms underwent gradual changes over the extensive period and became the types of mammals found on earth to-day.

Man's early ancestors were mammals related to the present day African elephan

shrew which had a trunklike nose. They outlasted the dinosaurs because they were warm blooded. These animals are called, "prosimians". They found safety in trees, and multiplied rapidly throughout the world. In the beginning these animals had no eyes but their sense of smell was good, but in the trees the sense of smell was not so useful and it was difficult to go after the food in the leaves and branches. Now the sense of sight was needed and these animals developed sense of sight by evolutionary process. Long snouts of the prosimians grew shorter and the face became flatter. The eyes moved from the sides to the front of the head. Priosimians stayed in the trees for about 50 million years.

Later some of the prosimians came down to earth. There was no monkey stage between prosimians and the first ape man that walked upright. Monkey evolved from prosimians and remained monkey. Oranguatans, chimpanzees and gorillas also evolved from prosimians about 50 million years ago and remined orangutans, chimpanzees and gorillas. Man also evolved from prosimians. Fossil remains show that the first man to appear on the earth lived first in central Asia. Millions of years passed between the first appearance of man on the earth and the development of modern man.

**The Peking Man** (*Cave man*)

In rocks that were deposited at least a million years ago, there are found pieces of stones which show that these have been shapped by human hands. Since these were found in a cave near Peking, China, man who left them is called Peking man.

**Neander-thal man :**

He was dwarf like in size, had stooped shoulders, and long arms. He was a hunter. The implements he used were superior to the Peking Man. There were found drawings on the walls of his caves. He lived 100,000 years ago.

**Cro-Magnon Man :**

He lieved in Europe 20,000 years ago. He exterminated Naenderthal man. He is believed to be the first known member of the present species of man. He had more highly developed culture, and used furs and ornaments made of shells and ivory. It is said that Cro-Magnon man was equal to modern man in both mental and physical ability. Modern civilised man live though very differently from Cro Magnon Man, only because of a knowledge which has accumulated.

**The Future Man :**

In 20,000 years which have passed since the cave dwelling days of Cro-Magnan Man, the human race has under gone great cultural changes and development. The modern man has big brain. This big brain is disadvantageous for the continuance of human species. According to one theory, the nervous system is a kind of creeping ivy on the human body frame, it is a parasite that has been growing fat on the rest of the body. It uses up about 25% of the oxygen inhaled. This may be interfering with the working of organs much more important as for as survival is concerned. The higher incidence of stomach ulcers. high B.P. and other diseases that flare up during emotional stress support the idea that our enlarging brains may kill us.

Man may be replaced by another species, and disappear altogether or may continue like the chimpanzees or gorilla. What animal can replace us? It might be an advanced type of ape or one of the living prosimians, like the large eyed lemur: (mammal common in Madagascar, nocturnal in habit).

There will be change in the form of life which survives in the millions of years to come. New forms of life will develop and vanish as living forms have done from the beginning of time....The story from the rocks of the past will be continued in the new rock layers to be laid down in the future.

This world will go, that world shall come,
We won't be there, though there shall be some,
This earth shall go, the sky shall be low,
Thou only shall be there for something to sow.

....*Malik.*

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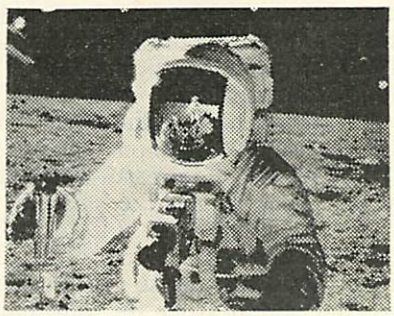
# Space Technology and Lunar Exploration

By

SHAKIL AHMAD KHAN

B. Sc. *2nd Year* M.B.,B.S.

EVERY star being a sun, each sun having several planets and most of the planets with one to several orbiting satellites (*moons*) the vastness of the Universe is beyond imagination; in the eyes of the great historian Toynbee, the situation is so complex for human brains so as to cause not challenge and enthusiams but a feeling of suppression. The brains, however are clever enough not to see this unexplorable side of the Universe and to confine the space missions to our own solar system, which although not in the physical reach of the present generation may become accessible in future.



Measures to explore the moon, our only satellite and the nearest target, began just after the Second World War, when the intellegencia of the world realized of consuming their 'brain-power' in something but war. Rocket launching and to make it go in the desired direction was demonstrated by Germans during the War and their V-2 rockets provided basis for further research on the subject. The Union of Soviet Socialist Republic (USSR, Russia) poineered moon exploring attempts and was soon followed by the United States of America. Space race between the two big powers was not long; USA in 1969 clearly showed its supermacy over USSR in reaching to the moon. Both countries working independently adopted and worked out several space exploration programmes and the technological achievements of both sides deserve equal praise. If USA has reached the moon first, USSR has demonstrated the unique method of landing, of returning space craft on land which seems to be superior and advantageous to the sea landing method of USA.

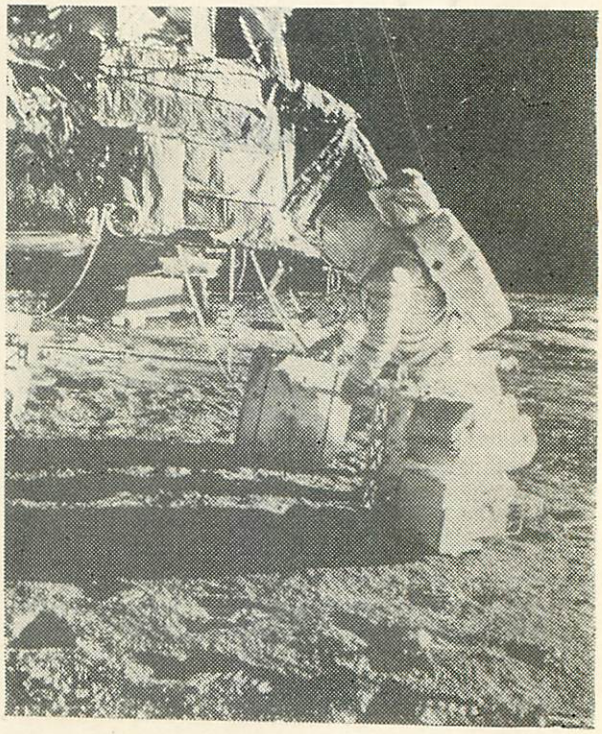
The last two years of the 7th decade of the 20th centuary are correctly called the years of 'space achievement'. It was in these years that Neil. Armstrong and Edwin E. Aledrin, the most talked about astronauts, landed on moon surface in July, 1969, and brought launar land samples from the Sea of Tranquility, and that a second sample was brought from Sea of Storms four months later by Apollo-12 craft, and that USSR obtained the samples from a different site, Sea of Fertility, in Sept. 1970. by its unmaned, automatic space craft, Luna-16.

The lunar module from the main space-craft of Apollo-11 landed at the Sea of Tranquility on Sunday, July 20th, and the two astronauts who spent 22 hours on the moon surface apart from scientific work performed certain ceremonies. A flag was erected, and a plaque and statements of the leaders of many nations of the world were left there along with the mementoes of US and Soviet astronauts who had died earlier in space explorations. Further these important research instruments were installed on the moon-surface by these astronauts. One was a Swiss instrument to record frequency of bombardment of solar particles on the suface. Another was a seismometer to record movements on the moon surface, and within a period of four months it recorded 30 events. These were postulated to be tremors from moon-quakes. The Lamout Geophysical Observatory of Columbia University which detected these tremors has calculated a hot moon interior of 9.3 miles thick from the strength of the quakes. The third instrument was a honey-comb reflector. It was successively used on August 1st by Lick Observatory of California University to measure the exact earth to moon distance. A

beam of laser light was sent through a laser-gun mounted for the purpose on the 100 inch telescope of the observatory; the beam of light was detected when bounced off the reflector on the moon. By noting the time taken by laser beam to be reflected back, the earth to moon distance of 226,970 miles was calculated. It, probably is the most accurate earth-moon distance ever calculated within the accuracy of plus minus 150 feet.

Apollo-12 was fired on Friday, 14th November, 1969 from Cape Kennedy, Florida, and remained in space for 10 days. This second manned space-craft stayed in moon orbit for 3 days and 17 hours; meanwhile its two astronauts Charles Conard and Alan Bean spent 38 hours outside the main craft and 31 hours, longer than Apollo-11 men, on the moon surface, Unlike Apollo-11 which landed at Sea of Tranquility, Apollo-12 module landed at a different site, The Sea of Storms. Using stereo-camera, infrared rays, spectrographis processes many photographs of the future landing sites were taken from the main space-craft of Apollo-12 which kept on orbiting the moon for 38 hours. Lunar module astronauts also dismantled some components of an unmanned space craft that was lying on moon surface since its fall in 1967. This crew also installed six scientific research instruments.

The more recent event in lunar exploration is the soft landing of USSR unmanned Luna-16 on the Sea of Fertility, on Sept. 19, 1970. This area of moon, located towards a bit eastern side was first to be explored. Not only Tass, the only news agency of Russia, but also Jordan Bank Observatory, Britain, and Bochum Observatory, West Germany, reported the successful soft landing of Luna-16 on moon. This automatic space craft after touch-down on moon, carried out a series of technological operations being controlled from a base on earth; drilled moon rocks, transported it into the reserved space in the spacecraft and then sealed it hermetically. The uplift from moon as well as the return journey were controlled by nuclear powered batteries which inspite of very low night temperature on moon (—172;) Centigrade) worked extremely well. The space craft landed back in USSR successfully. And so, for the first time about a year later than USA, Russia also successfully obtained lunar samples from an area unexplored by the two Apollo flights. The analysis and findings of the rock sample brought down by Luna-16 is not expected to be made known to other nations of the world.



*Analysis of Lunar sample:* A group of leading scientists carried out the examination and analysis of 48 lbs. of lunar rocks brought by Apollo-11 craft from the Sea of Tranquility. Geologists claim that these moon rocks are atleast 3,500 million years old and support the theory of moon being a fragment which ripped off the earth when the latter was young. All round, the surfaces of the rocks are pitted, probably due to meteroitic impacts. The rocks on crushing released atomic gas particles, the so called solar wind, derived and stored from the sun and composed of noble gases as argon, xenon, ireon etc. The lunar dust is non igneous and has been termed brecia. Biochemical analysis has revealed no trace of organic matter whatso-ever, hence no life, in any from is now suspected on moon; nor has any good or bad effect of lunar dust been noted upon the living organisms of earth. Chemically the lunar rock is very different from earth rocks. It is reported to contain high quantities of elements such as chromium, titanium, yttrium, zircon-

ium which possess high melting points and are rare on earth. The earth on the other-hand is rich in elements of lower melting points such as lead, bismuth, sodium, potassium etc. which are scarce in moon rock samples.

Although biologically the moon is dead, geologically it is 'alive' since it contains an active hot interior which not infrequently causes volcanoes and quakes on moon. Dr. Goles of Oregon University claims that the composition of lunar rock, is similar to the basin of Pacific Ocean. He also claims that the moon dust is about 4,400 million years old, and according to him the lunar dust unlike the rocks has found its way down from the higher areas of moon and therefore represents the composition of moon elevations. Dr. J. Zanringer of famous Max Planck Institute of Heidelberg, Germany however, has reported a lower of age of 3,500 million years for lunar dust. The lunar sand, unlike earth is not stationary but keeps on rotating. Dr. R.L. Fleischer of California University has calculated an overall turning time of lunar-soil to be every 4 million years as compared to more frequent. 15,000 years, on earth.

**Benefits of Space Technology:**

The byproducts and research intermediates of space technology programmes have also exhibited their usefulness to fields other than space exploration. For example, a type of heat absorbing roof-top paint, less expensive and improved artificial teeth, and methods of preserving food in very hot climates etc. are the spin-offs of space technology and are increasingly being made use of. Shock absorbing aluminium tubes which were originally designed to soften landing of space craft on moon have now successfully been used in elevator shafts as a safety device and are being tested on helicopters and aeroplanes to lessen the damage and injuries in emergency landings. Light weight, strong plastic prepared for rockets are now used to build railway cars. These plastic rail-cars, strong enough for routine work, weighless than steel ones, lower the load on the locomotive and therefore increase the speed. Certain alloys worked out in space research have been used in the preparation of dental plates and other dental appliances which are said to be less expensive, lighter, thinner and finer than those available in clinics at present.

Because of advancing space technology, a physician in a small town of Pakistan may, in near future, consult, for example, a heart specialist thousands of miles away, via a communication satellite far out in space, and both doctors although thousand of miles away, may hear the heart beat of the patient simultaneously and discuss the best possible treatment. And because of a similar communication satellite, at present in use, called the Early Bird orbiting the earth, people in London see and enjoy colour T.V. programmes relayed from a T.V. station in New York. The space research has certainly provided much more benefits than what are mentioned above and will no doubt yield more in future.

# "Medical Science and Outer Space"

By

SHAMIM AKHTAR

*2nd Year, M. B., B. S.*

SPACE medicine is a new and a very wide subject. It deals with effects of certain factors on our normal organism and various hazards and problems which we have to face in the space.

As we know, life on earth grows according to habitual rythms e.g., if we take food at twelve noon, we will be hungry at twelve. These rythms are nothing but conditioned reflexes. Moreover, our physiological processes depend upon alteration of day and night, winter and summer.

What about the conditions in outer space? There is a cycle of days and nights and summers and winters. All biological rythms break down and in case of orbiting space ships, the conditions mentioned alternate very rapidly. Here, doctors are directly concerned with those conditions which are necessary, to acquire a comfortable condition in space. New conditioned reflexes must be introduced and a new habitual rythm is produced. There are two basic modes of investigations for medical research workers in this connection.

(1) Different conditions of space Flight are produced in laboratory and their body effects are determined. But, it must be realised that some conditions e.g., weightlessness etc., can't be produced on earth.

(2) Direct observations of human beings in rocket flights and space ships. Doctors, on earth, watch astronaut's conditions constantly. Their E.C.G., pulse rate, and other datas are relayed on earth.

From these observations and investigations it is suggested that what are the body reactions at different heights and what will be the best situation for pilots to assuem.

At 1500 meters, breathing is impossible. At 24,000 meters, pressurized cabins are necessary with a system of chemical air regeneration. At 36,000 meters — 40,000 meters cosniec rays begin to present a real danger for astronauts' health. Still higher, the action of ultra violet rays starts. So, pressurized suits having self contained oxygen, heat and radiative protection are used. There is high gravitational load and then transitional fall into condition of weightlessness. So, co-ordination and orientation are essential in the space. As we can't produce a condition of weightlessness on earth, we have to depend on direct observations of space men. Its effect of oxygen consumption, carbon dioxide output, taste and appetite are determined. It does not effect vital functions viz. blood circulation, respiration and digestion. But, if it is prolonged for a longer time, it can effect co-ordination of movements. It also has certain psychological effects which affect different people in different ways.

Gorgine found it fine, felt light and easy to handle the things. But, still it is a mystery to explain it as pain or pleasure.

Even higher, there is absolute silence, sound waves can't be propagated. Light is no longer seen dispersed in the atmosphere, it is dark, very dark. There is an additional state of solitude, psychologically probably the most dangerous of all. These conditions strike the astronauts' nerves, create psychological tension resulting in visual and aural hallucinations. The best way to provide protection is to create best possible flight conditions and intense training. Now it has been developed that hallucination, neurosis

and psychological break down disappear if a person is busy in work. It was also thought that weightlessness may effect paristaltic waves. Now it is proved that paristalsis passes along the walls of gullet normally even in the absence of gravity and appetite is sufficient.

A new hazard which is brought into existence by x-rays, atomic energy, radio-activity and now by outer space is radiation sickness. It is due to radio-active irradiation. Small doses of radio-action may display them in five or ten years in the form of Leukaemia. It is a disease in its own right but after radio-active irradiation, it occurs more frequently.

There are also acute forms in which symptoms display themselves immediately after exposure to radiation viz. sickness, nausea, apathy and prostration. So radiation sickness is one of the hazards of space conquest and must be taken into account. American and Russian scientists have radiation protection as an essential element in their space flight programmes.

These hazards can be studied by the help of embryo as it is very sensitive to environmental changes. Absence of gravity may be dangerous as it has no orientation and may develop in any part of the egg. Space embryology may solve mysterious problems of bilateral symmetry.

Each flight raises as many questions as it resolves. Space medicine incorporates practically all the medical and biological sciences. With rapid advance of space medicine we will have to revise the bounderies of bio-sphere. Medical science, though the youngest but a glorious future, is for it.

Reference—"Outer space and man" by VLADIMIR TALMY.

## MODERN SCIENCE DEFINES WOMEN

| | | |
|---|---|---|
| *Symbol -* | ... | *DO.* |
| *Accepted Atomic weight :* | | 120. |
| *Occurance :* | ... | Found wherever man exists, seldam in free state. |
| *Physicial Properties :* | ... | Boils at nothing, may freeze any minute, melts when properly treated, very bitter if not well used. |
| *Chemical Properties :* | ... | Very active, posseses great effinity for Gold, Silver, Platimum and Precious Stones. Violent reactian when left alone, able to absorb great amounts of expensive food, turns green when placed beside a better loaking specimen, ages rapidly. |
| *Uses :* | ... | Highly ornamental, useful as a tonic for low spirits, is probably the most powerful (income) reducing agent known. |
| *Caution :* | ... | Highly explosive. |
| *Variations :* | ... | All present day models are isotopes of the original Eve. |

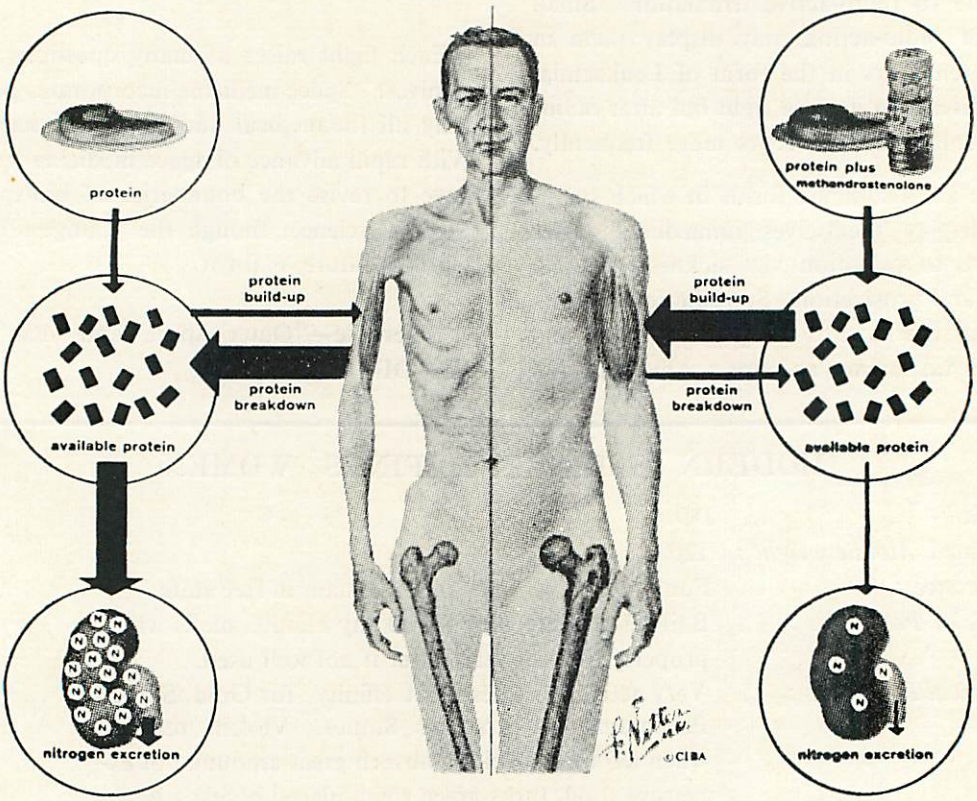
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*V. Wynn and J. Landon : Brit. Med. J. 1961/1, 998.

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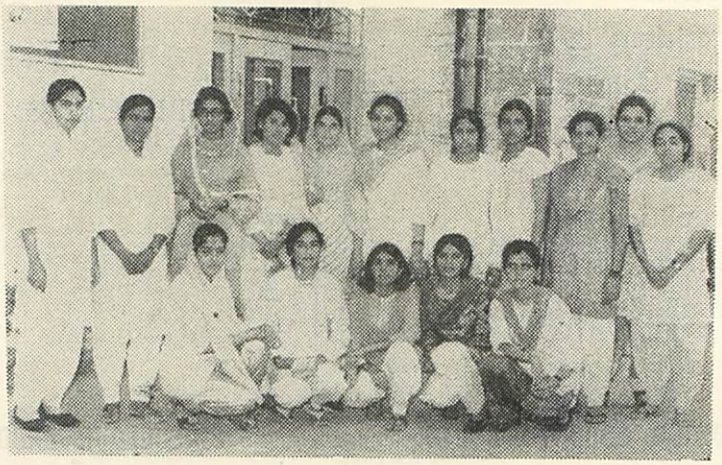
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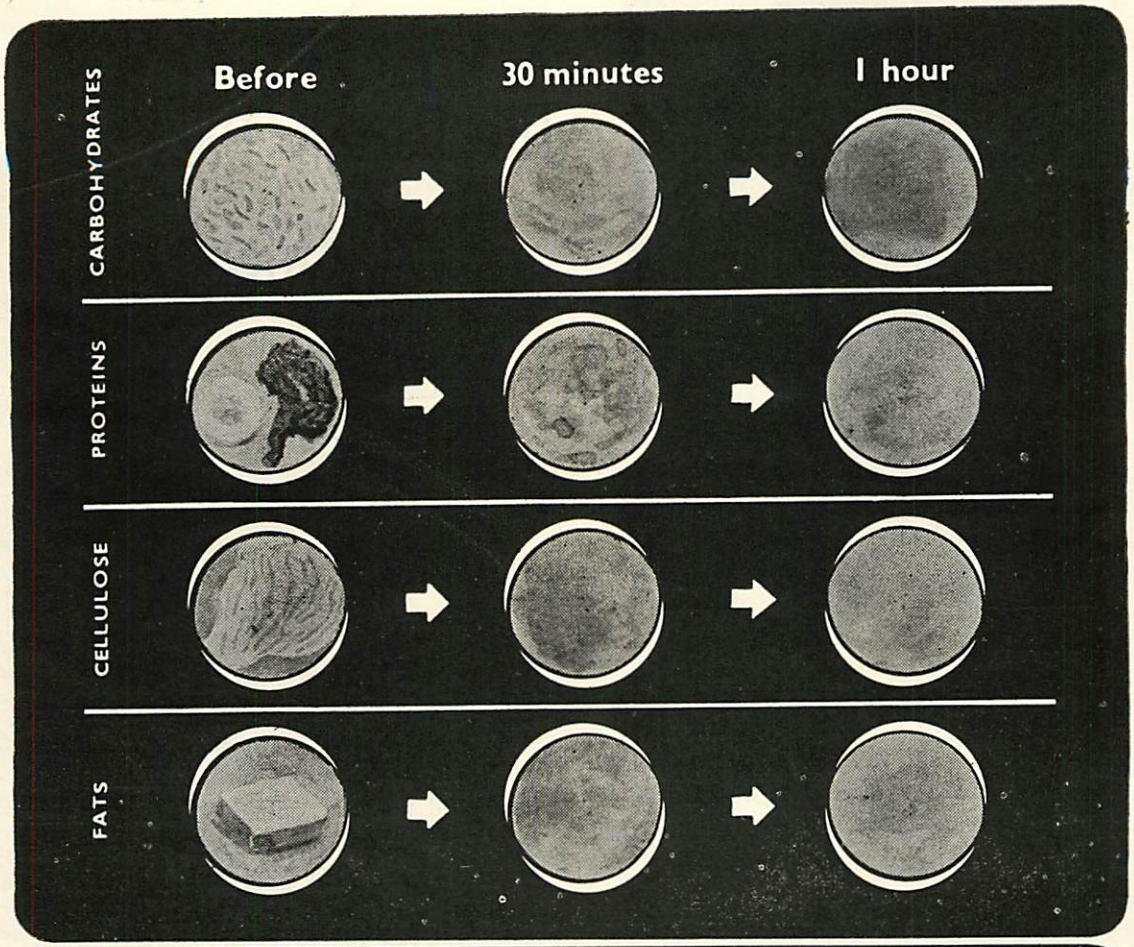
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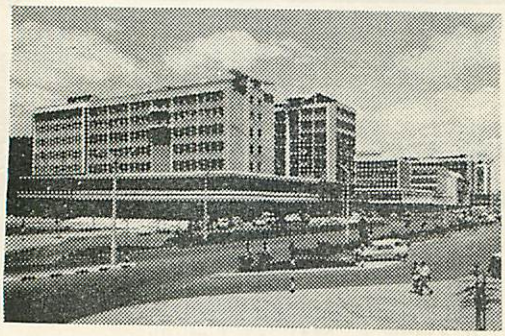
# The Earthly Paradise East Africa

By

AZRA HATIMALI

*Final Year M. B., B. S.*

NAIROBI—the capital of Kenya is situated at 5,500 ft. on the plateau of Mt. Kenya. It enjoys a perfect climate—hot sunny days with cool evenings. Nairobi—apart from being a garden city is also the modern bustling city that dictates the pulse best of East Africa.



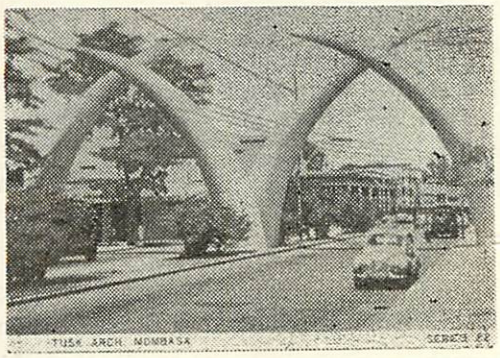
Government Road, Nairobi

Whilst in Nairobi, one must visit the National Park, only three miles away. There is a wonderful variety of game, rhino, leapord, lion, cheetah, giraffe, zebra, ostrich, and many more beasts and birds. There is also the world famous Animal Orphanage where stray and helpless baby animals are cared for by men of the Parks. You can even shake hands with a baboon or scratch the back of a leapord in the National Park Orphanage.

Then there is the lake Nakuru Bird Sanctuary. Even if your favourite colour is not pink, you cannot fail to be amazed by the concentration of more than one and a half million flaminges on the soda lake of Nakuru. With a back-drop of green hills, they present an urforgettable picture as they hunt for small crustacae. Besides the flamingoes, countless other species add colour and fascination to this Sanctuary. To get there, a drive along the spectacular Great Rift Valley, with the escarpment dropping away 4,000 ft. below you, is well worth the trip.

**The coast :**

An Arab Jahazi sails serenly along the Kenyan coast past palm—fringed sandy beaches that stretch for mile after mile. Smart hotels, right on the sea front provide easy access to the paradise that awaits you along the Kenyan coast. Swimming, surfing, goggling and skin diving are all part of the exciting holiday at the coast.



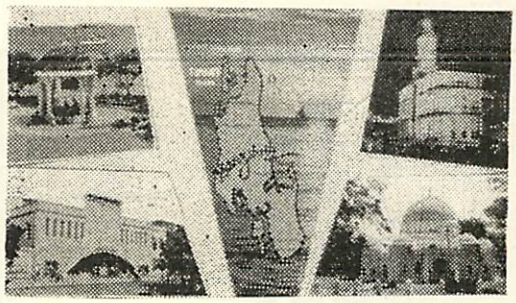

Tusk Arch Mombasa — seaport of Kenya.

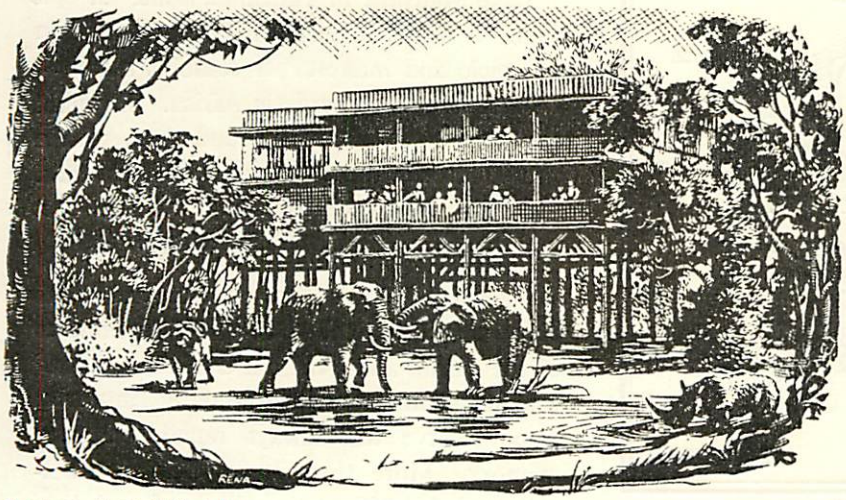
Malindi, the pearl of Kenya, set in the tropical azure of the Indian Ocean will give you a holiday that will for ever be unforgettable. Cool breezes, hot sun, white coral sands, whispering palms, and ancient Arab dhows nuzzling themselves in small harbours older than time. Malindi is just another part of the paradise that is East Africa.

Tsavo National Park (Kerya)—one of the biggest in the world—is larger than the whole of Wales! Here flora vies with fauna for attention and the time you spend in the Park will never be wasted. Tsavo is one of the few parts of Africa with hope for the vanishing herds.

The mighty Nile, (Uganda) thundering through a 20 ft. gap and falling in a 140 ft. torrent to the swirting waters of the Murchison Falls below, is a fascinating sight indeed. The country side is wild and untamed abounding with Uganda's teeming-herds of wild game.

Less than 100 miles away, the Queen Elizabeth National Park has a superb selection of wild birds and enormous concentration of hippo. The park is famous for its tree climbing lions.





*Treetops - the hotel in a tree*

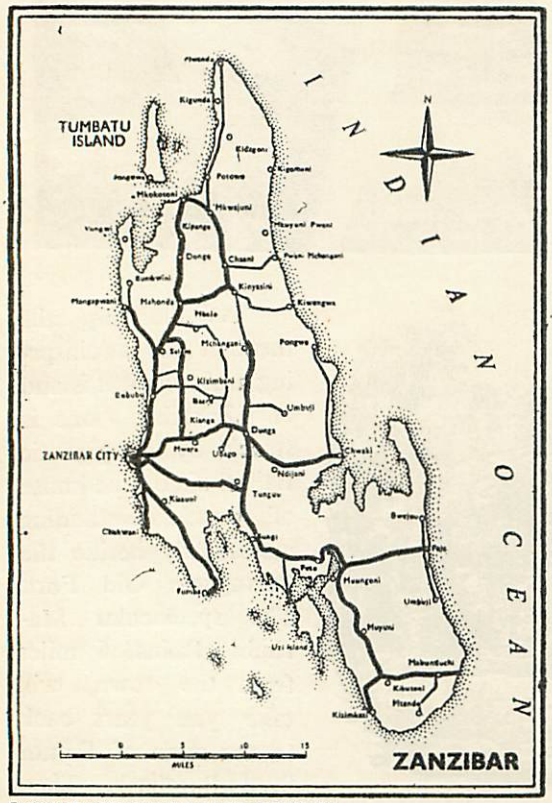
As the ship sails through the aweinspring archeological island of Zanzibar one is struck by the gigantic Bait-el-ajaib, the house of wonders standing majestically beside the Portuguese Old Fort. The spectacular Marhubi Ruins, 6 miles from the town, will take you years back to the reign of Sultan Syed Barghash. Then



*Street in Zanzibar's Stonetown*

It is one of the world's legendary tropical islands, with a long, crowded history and an uniquely romatic atmosphere. The classic greeting that Zanzibar gives one is the pungent, spicy scent of cloves, there are clove treas growing almost everywhere.

there are the sandy, coral beaches fringed with swinging palms adding to the beauty of Zanzibar.




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**ZANZIBAR AND PEMBA**

The capital city of Tanzania Dar-es-Salaam, through comparatively a small town, is attractive in appearance. It has a beautiful, land locked harbour, from which it takes its name, Dar-es-Salaam, the Arabic for the Haven of Peace". It is a town of tree-lined avenues, Independence Avenues. being a brilliant sight around Christans time when the colourful acacias are in full-bloom.

Lake Manyara in Tanzania, is like an epic film. It isvast, colourful and never ending in spectacle and interest It contains some of the finest buffalo herds in Africa. Elephant and rhino are always found there with a profusion of antelopes and other wild animals. The Park, which is in Tanzania, contains vast numbers of resident and migratory birds.

Ngorongoro, this huge extinct crater has been variously described as, one of the wonders of the world, and 'Africa's Garden of Eden.' The first sight of this breath-taking Tanzanian game reserve will always remain in your memory. More than 10,000 Masai tribesmen and 100,000 cattle will be found here

apart from the vast herds of wild animals. The crater is 20,000 ft. deep and 10 miles across; the crater area is over 100 square miles. Beauty and the beasts certainly blend in the fairyland setting of Ngorongoro (Tanzania).

These are but a few places of East Africa, one cannot afford to miss.

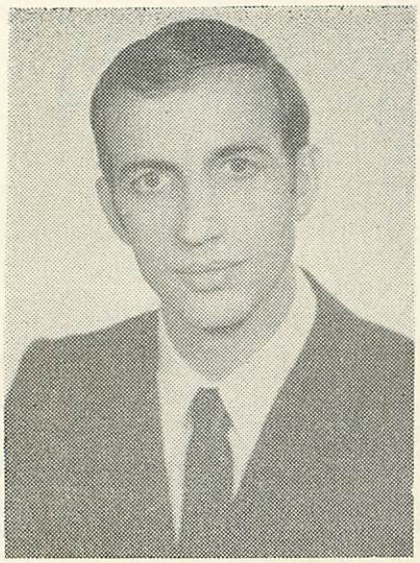



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TANZANIA

## PANEGYRIC PERIMETERING PELLAGRA.

*Pellagra is the predestined penalty plying people who perversely persist in partaking of pale, perserved, potted, purified, polished, pickled, pared, pauperized, pathetic, pallid, puerile, paltry, parboiled, puny , pusillanimous, pediculous, piddling, prostrated, proprietary, and patent pap, pathetically passing as provender among penurious or parsimonious paupers and a perverted populace, due probably to paucity of pence or perspicacity, or possibly to a pernicious predilection for palatable provisions. Pellagrous patients provide a pitiful pathologic picture of palsy and paralysis, and are peculiarly prone to prunitis, porphyrinuria, parethesia, paralogia, and paranoia. Not to protract this platitudinous peroration, please preach and propagate the policy to our procrastinating and perishing population, that they prevent pellagra by the pleasant prophylaxis ,of polishing off plenty of peas, potatoes, pot-likker, parasnips, parsleys, paprika, pancakes, porridge pears, pie, pineapple, peppers, papays, pawpaws, and proteins as pork, pigeons, pheasant, pancreas, and pemmican.* (EDITOR)



# ISFAHAN

NASSER JADALIZADEH.

FINAL YEAR M.B.,B.S.

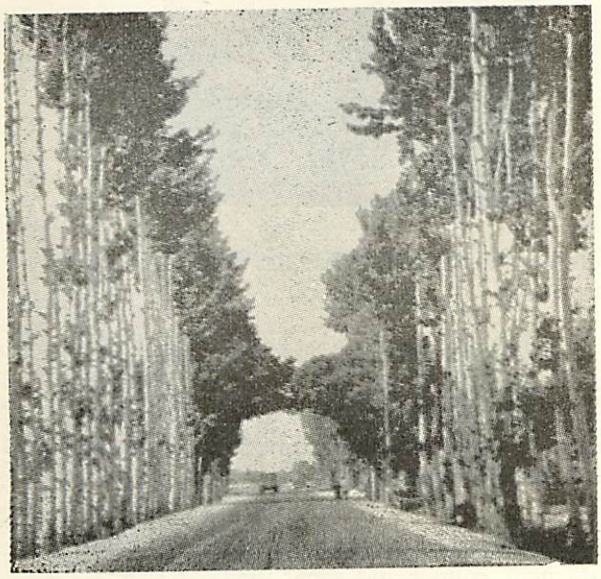
ABOUT nine hundred years ago, Iran's famous Poet, Philosopher writer and traveller in one of his quotation, explained Isfahan as, a town situated on a plain, with its pleasant climate and flowing streams, and inside the town are found fine structures.

Isfahan is an ancient city which, according to fables, was founded at the time of Tahmourass as Keykarous. In history there have been references to this city's existence from the Achaemenid era. And today, after the passage of centuries, this prosperous city resembles a large garden bounded on the north and east by a stretch of desert. In the south Mount Saffeh reaches into the sky and to the west of the city, gardens, groves and pastures undulate for miles. The bountiful Zayandeh Rud flows through the city. The numerous streams and canals that emanate from it, lined by bushy trees that provide a heavenly shade, irrigate the entire city and plantations on the outskirts.

It is true with the famous Persian Saying "Isfahan Nesf-e-Jahan" which means, Isfahan is half the world, for besides the explaination of the outskirt of the city as mentioned above, this city during the Safarid era (16th and 17th centuries A.D.) was a city of gardens and palaces, a city of trade and politics and according to Chardin, the celebrated French traveller who passed greater portion of his life in this city in the latter half of the 17th century, estimated the then population to be between 600,000 and one million.



Isfahan lies at an elevation of 1,590 metres above sea level, and at a distance of 420 kilometres from Tehran. The administrative Capital of the 10th Provinces, Isfahan, today has a population of more than 400,000.



Many factors such as the existence of a University, many spinning and weaving mills, productive agriculture and the constant flow of tourists contribute to making Isfahan the second largest city in Iran.

During the reigns of both the Seljuks 11th and 12th centuries and safarids, with Isfahan as the Capital of both dynasties, Persia's Islamic art reached its zenith. Outstanding examples of the simple but glorious architecture and the unparralleled brickwork of the Seljuks, miniatures, mural paintings, decorations, town-planning and of course the finest polychrome tiles of the Safarids are still to be marvelled at in Isfahan. In fact, this city is itself an immense museum, where a dreamy atmosphere and oriental art at its perfection have gone hand-in-hand to produce a vast and superb gardens.

Isfahan is extremely rich in monuments of great artistic value. The brief out look of this city I have tried to put in the best way I could, and I leave the rest for the reader to go and see the beauties of this great ancient and historic city of Iran.

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# The Tragedy of The Hashemite Kings.

By

ZAHIDA YASIN

*2nd Year M. B., B. S.*



**Sharif Hussain**

| Prince Ali | Prince Abdullah | Prince Faisal |
|---|---|---|
| Abdul-Ala | Talal | Ghazi |
| | Hussain II (JORDAN) | Faisal I (IRAQ) |

THE Ottoman Empire had boldly with stood mounting attacks from all the 4 sides, but time it seemed, now was running out for the Turks.

The British conspired with Sharif Hussain of Mecca promising him a free United Arabia in return for help in ousting the Turks and breaking their centuries old sovereignity in the Mid-East.

A decade had gone by since the Ottoman Empire had been mercilessly fragmentated with the abdication of the last Sultan.

Empire rule was a thing of the past, Turkey was struggling bravely for survival now. In the wake of all these events emerged a United Arabia, with the bedouin dynaty of 'Hashemites' as its sovereigns under the leadership of Sharif Hussain. Thus were born the Hashmeite Kingdoms of Saudi-Arabia, Jordan and Iraq. Of the Sharif's 3 sons, his eldest Ali, stayed with him to rule Saudi-Arabia.

Prince Abdullah marched on the trans—Jordon declaring it 'The Hashemite Kingdom of Jordan. Meanwhile the youngest of the 3 sons Faisal Ist, ascended the throne of Iraq.

Thus by the end of the 40's the Hashemites were firmly established. In the years that followed this new-born Empire flourished and prospered.

King Abdullah Expanded Jordonian boundaries right across the banks of river Jordon. He liquidated all the warrior desert tribes who dared to oppose him and came to be regarded as Abdullah "The Fearless".

King Faisal I of Iraq was a reasonably tolerant man, calmer and sober than his energetic elder brother in Jordon. Nevertheless he successfully suppressed Kurdish rebellions in Northern Iraq.

Prince Ali the eldest, faithfully, stood by his father, to the end. Just as things were going on so well, the below fell! Ibne-Saud over-ran Saudi-Arabia, and thus began the tragedy that still continues. Sharif Hussain died suddenly followed by Prince Ali, who left behind son Abdullah.

King Faisal Ist of Iraq who had literally given up his life for his country's welfare, was becoming more and more unpopular. Grief—stricken he abdicated, shortly afterwords he was taken ill and died in exile.
He was succeeded by his son Ghazi. King Ghazi ruled for a very short time, being victim to a car-accident in his middle thirties.

Meanwhile anti-social elements began to rise in Jordon, until finally King Abdullah, was shot through the head on the premises of Al-Aqsa Mosque. With a bewildered grand son wildly clutching at his blood-soaked garments. Abdullah was succeeded by his son Talal.

At that time Iraq was being ruled by Prince Abdulla, reagent to the throne, until young King Faisal II could assume royal responsibilities. His Excellency was a reserved man ruling with great strictness. His family pride kept all around him a hand's length away. He was a conscientious and hard working watch-dog to Faisal II throne.

At the age of 18, Faisal II ascended the throne. His care free manners and young age won him instant popularity. In addition his sincere efforts towards the welfare of Iraq won him nation-wide respect.

But he was a Hashemite, could he enjoy this success for long? No , for this was only the "Lull before the storm" and God! What a storm!

A wave of discontentment started gaining momentum in Early 1958 mainly against the reagents' strict rules and the so called treaty of Muri-as-said, The prime-Minister. Early one morning the royal palace was seized by revolutionaries and the entire royal family at Iraq, from the young King, to his aged grandmother were murdered in cold blood.

Prince Abdul-Ala and Nuri-Said were killed and their bodies dragged behind jeeps through the streets of Baghdad, until they were multilated beyond recognition. Thus fell the Hashemites at Iraq, and God, still silently watched!

In Jordan, the only surviving Hashemite Kingdom, things were going from bad to worse. King Talal had to abdicate due to mental illness. In the midst of all this turmoil King Hussain ascended the throne at the age of 17. The same revolutionary elements that had ended Iraq's royal family tried to oust Hussain. But he turned out to be a much tougher nut to crack. Or, then may be the lord, almighty, who had so far been an indifferent spectator, decided to intervene. The loyal Bedouins of Jordon rose as one in their support for the young king. This very support probably saved his life.

Hussain turned out to be a mixture of his energetic grand-father whose death he had witnessed as a boy, and with a streak of silent pride belonging to his great uncle. These qualities enabled him to cling valiantly on to a rickety throne that can topple over any minute, or will it?

Who knows, the Hashemite tragedy still continues? Only time can tell.

# Persians' Contribution to Medicine



CYRUS LITKOUHI

*Final Year M.B.,B.S.*

VARIOUS nations of the ancient times (i.e. the Chinese, the Indians and the Greeks) have contributed to the knowledge of the world. They tapped at the useful resources of the various aspects of the human knowledge but it were the Persians who paved the way leading to the present methods of observation and experiment which ultimately opened the way to progress in the scientific researches for the modern advanced nations. Instead of purely theoretical and philosophical solutions the natural phenomena, the Persians introduced the practical experiments to delve into the mysteries of nature. They did not only preserve the legencies of human knowledge inherited from the ancient nations but also led the world to new fields of researches and inventions which basically laid the foundation of what was later on done by the European nations and termed as the "Renaissance".

As Islam appeared on the horizon of civilization and began to spread, things began to move faster and intellectual activity resumed its march forward more rapidly than before. Peace on earth and the welfare of humanity were the messages which underlined the scientific researches of the Persian Muslims. They produced masterpieces in almost all arts, but medicine being one of the fundamental sciences, which had a direct bearing on the welfare of the people, received much of their attention.

In a nutshell, let me elaborate the contributions of some of these intellectuals to our present medical sciences. "Al-Razi" and "Ibn Sina" have become household names in medicine and surgery.

ABU BAKAR MUHAMMAD IBN ZAKARIYA AL-RAZI was born in Rey in 850 and about him Max Meyerhof says: "He was undoubtedly the greatest physician" of the Islamic world and one of the great physicians of all times". He was the head of the great hospital of Baghdad.

His book "*Tibb Mansouri*" was a stupendous encyclopaedia of medical study which remained an unrivalled text book in many European medical academies for a long time. In all, he wrote 113 major treaties, invented and contributed a vast amount of research information in the fields of obstetrics, gynaecology and ophthalmology, His great original contribution to medicine is however his special study of measles and small-pox. His treaties on small-pox and measles were reprinted as late as nineteenth century, containing the first clear account of these two diseases.

Al-Razi was the first scientist to give us a book on paediatrics. He for the first time, compiled scientifically the theories of nature and the properties of the mainerals and arranged the chemical elements into various groups.

He compiled "Al-Hawi". This included the work of the Persians, Greeks, Syrians and Indians as well as his own opinions and experiences. His treatise dealing with general medicine was widely published in western universities. Through his researches he found out Alcohol and Sulphuric acid and introduced them to the scientific world.

ALI IBN-AL-ABBAS, the Persian Physician, expanded the science of physiology by publication of his famous book "Al-Kitab-Al-Maliki" which was later on translated into Latin, French, German and English. His special field of research was dietetics, but he made equally important discoveries in obstertrics. He was the first physician to stress the importance of uterine contraction during labour. He was the first to explore the functional details of the capillaries.

In pharmacy, IBN RABEN TABARI is one of the brilliant scientists who vastly enriched this vital branch of medicine. He has written a large number of books, among them are: "*Hifz-e-Sehat*" and "*Kitab-e-Din-o-Dolat*". He also published many other books.

He devoted his life to the study of plants and herbs used in medicine. Moreover, he propounded theories about the effect of climate on health and physiological changes it causes in the body.

ALI-IBN ABBAS AHWAZI (MAJUSI AHWAZI) brought a revolution in Surgery and cardiovascular diseases with his new techniques. His book "*Kamel-al-Sanaat*" was translated into Latin in 1492 in Italy and then in 1522 into French. It was the standard text book of Surgery for years in Europe and Asia.

Even better known in other fields is that great figure, ABEN-ALI-AL-HUSAIN-IBN-SINA or AVICENNA (980-1037), who laid down the first principles of the medical practice and who remains the universally acknowledged pioneer of the medical philosophy. His "Al-Qanun-Fid-Tibb" which superseded the Majusi's standard text-book "*Liber Regius*" was the most extensively sought medical compendium in Europe and Asia for a long time. Ibn-Sina made many contributions to the knowledge about venereal diseases and discussed gonorrhoea and syphillis. He described the features of pyloric stenosis and gasteric ulcer, and wrote originally on the diseases of liver and the gall-bladder.

His book "*Canon medicina*", the most famous medical book in history, supplanted the dictatorship of Galen. It remained the text book of all European universities for six centuries. He has written more than 120 books in Persian and Arabic.

Much of the credit in medical sciences which western nations attribute to themselves is actually the fruits yielded from the hard work and devotion of these Persian Scientists. "He who sows the seed does not necessarily reap the fruit".


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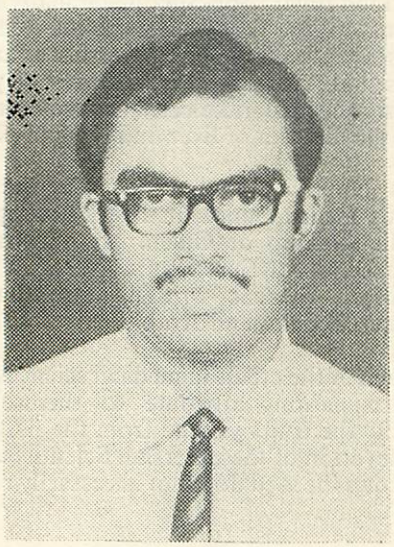
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RAILWAY BOARD

*KARACHI.*

# The Foundations of Democracy

By



IQBAL AHMAD MEMON

*4th Year M. B., B. S.*

WHERE shall we search for the foundations of democracy? In the origin of the word, or in the 'use' of the word, or in its high sounding principles and theories safely preserved in modern books, or in the actual realization of this humanitarian faith in the lives of people wherever that may be?

Obviously, there is no magic in the word as such and much less in its origin. We know enough about the hierarchy of superior and inferior classes of men and the institution of slavery in the Greek and Roman societies. There is also little consolation in the modern use of the word which has come to be qualified variously as 'British' democracy, 'French' democracy,' American 'democracy or 'Russian' democracy. It is all politics, as one can clearly see through it. Each political power has its own nationalism to suit its own political purposes. It is, therefore 'our democracy' to suit' our own purposes'; it is 'our own idol' for our own worship'. It is either a regional democracy or a national democracy. As such, we are beginning to realize its failure. We are also beginning to realize that there is a talk-democracy, and there must be some 'do-democracy'. It is the pious hope of the modern intellectuals that, what our talk has failed to achieve, our acts will surely accomplish. Indeed, it is a very hard nut to crack for the modern mind.

The difficulty is that we have not yet got rid of our sectarian thinking. We are not able to come out of our own shells, our own politics, and our own social values, to stand aloft and look around whether democracy is the exclusive property of one nation, or other also can participate in it; whether it belongs solely to the West, or the East has also contributed to it; whether the politicians alone are its custodians, or only the common man's faith can protect it; whether it is all economics and politics, or it is also a social faith, and as such, implicit in human values; whether Churchill, Roosevelt and Stalin have talked of it, or Jesus and Mohammad (may peace be upon him), in turn, have enunciated and perfected it by dedicating their lives to its cause.

Democracy is the heritage of whole humanity. All the people have the share in it since all the prophets of humanity were the first exponents of a truly human democracy. They gave the first principles of fatherhood of God and brotherhood of man. All the prophets without distinction, came with this mission and advanced its cause in accordance with the conditions of their time, place and circumstances. This could be illustrated from the nobelest work of each of the prophets of God, the earliest as well as the latest of them, I choose to illustrate theory and practice of democracy advocated by last of all the prophets, Prophet Mohammad

(may peace be upon Him). Since he is nearest to us in time, we can see his work clearly in the light of history. His contributions are particularly important because he advanced the prophetic mission of his predecessors and finaly accomplished it, not only in theory but in the actual life-actions of the community.

The most significant contribution of Mohammad (sal'm) to the cause of humanity in general and the work of his great predecessors in particular consist in the fact that he for the first time enlarged the scope of human democracy from its hitherto 'national' limitations. This was in keeping with the needs of his times which heralded the dawn of the modern age. His advent coincided with a new era in human history when human race was no more in its childhood but had reached the intellectual and social maturity of a 'fully grown-youth'. His work, therefore, could not be limited to a particular tribal stock as was of Moses among the Israilies; nor could his mission be confined only to the Jews and the Gentiles of his times. His message and mission was for all the people, for the entire stock of mankind. He had come to establish unity of faith and unity of purpose among manking. Unity of faith was established through the conception of one God for all. The other equally important part of his mission was to establish the unity of purpose in the lives of all human beings. As such, his message was not concerned only with the life in this world. How man should live his life on this earth so that it may be contributed to the best success here as well as here after, was the task of his mission. This 'way of life' which he himself demonstrated through his own life-actions and through the co-operative living of the new community of 'Muslims' with whom he worked, laid the foundations of a universal human democracy which was called by a better and all-inclusive name of 'Islam'.

"DEMOCRACY IS A KINGLESS REGIME INFESTED BY MANY KINGS WHO ARE SOMETIMES MORE EXCLUSIVE TYRANICAL AND DESTRUCTIVE THAN ONE, IF HE BE A TYRANT".

—BENITO MUSSOLINI

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# The Sick Quiz

By
SHAKIL AHMED
*B. Sc. 3rd. Year, M.B.,B.S.*

**Note:** If you answer all correct then better go and get checked up by a psychiatrist.

(1) What's the best remedy for insomnia?
(*Chloroform*)

(2) In which case the skin is yellow, and still it is not jaundice?
(*In case of a Japanese*)

(3) How can you recognise an unmarried doctor?
(*A happy doctor. Never comes to the clinic two days in a row from the same direction. Never Mrs. any fun.*)

(4) What's bacteria?
(*The back-door to a cafetaria*).

(5) What's the best contraceptive?
(*No.*)

(6) How can one look young?
(*By hanging around with very old people*).
or
*Hang around with student politician*).

(7) What's the advantage of college education?
(*It gives an opportunity to work for somebody who did not go to school*).

(8) Whose motto is, 'To itch is human, to scratch divine?'
(*A dermatologist*)

(9) What's anti-body? (A girl's brother's physique)

(10) Which 'degree' one has to acquire for good status? For example, M...B.B.S. Ph. D. & M. O., etc.
(*J. O. B.*)

(11) What's Appendix?
(*One who is wanted to be touch out by every doctor—on a date.*)

(12) Where air is food?
(*In tyres, baloons and student politicians*).

(13) Two is a couple three's a crowd: what four & five.
(*Nine*)

(14) What's Angina Pectoris?
(*A greek actress*)

(15) Who is an adultress?
(*A female adult*)

(16) Elaborate the abbreviation, V.D.
(*very done*)

(17) Who is Genius?
(*The boy who will not attend classes for months, and then will convince his professor that he had cold.*)

(18) Whose idea is wedding?
(*Bride idea*)

(19) What's an eye opener?
(38—24—36)

(20) Any thing special about Drive-in?
(*It is the only place where you can get run over by a car on the way to toilet*).

(21) What's cataract?
(*An optholmologist sport, car.*)

(22) Who is a criminal?
(*No difference from the rest of us..except that he got caught*).

(23) What will you call a cat that has just been given its own fish market
(*Bride*)

(24) Why surgeons wear masks while operating?
(*So that if operation fails nobody knows who did it.*)

(25) Are tranquilizers habit forming?
(*No—if you take them everyday*)

(26) What's varicose veins?
(*A condition seen when one's pan is leaking*).

# CAR QUIZ

By



FAUZIA F. QUDDUS
*IVth Year M. B., B. S.*

**Scoring:** (*here*)

1. Which was the first motor company in the world and when was it established? When was its first car model manufactured?
2. What is the present land speed record?
3. At present what is the maximum no. of cylinders found in road production cars?
4. What do the initials FIAT stand for?
5. Are radial ply tyres better or cross ply tyres?
6. Which company manufactures maximum number of cars?
7. Which company manufactured the first turbine powered car and when did it manufacture it?
8. Which company's symbol is a prancing horse?
9. Can a smaller engine produce more power than a bigger engine?
10. Name the fastest road production car which has been driven at that speed?
11. Which car was voted "Car of the Year" of 1969. by seven European car magazines of seven different countries?
12. Name the world's two best body designers or coachbuilders?
13. What do the initials M.G. on M.G sports cars stand for?
14. Name a twelve carburettor car?
15. What is meant by a sports job?
16. In automatic transmission better than manual. transmission?
17. Is there or was there ever a car with an ejection seat?
18. Which car has the maximum number of door?
19. What is the name of the car which has an emergency door in the floor.?
20. Can you move a car from standstill in the fourth or the top gear?
21. Name the company which has a test track on the roof of a five storyed building and is unique in the world?

## ANSWERS TO CAR QUIZ

1. The First motor company in the world was Diamler Benz, it was established in 1885. The first car model was manufactured in 1886.
2. The present land speed record is 622.407 mp.h.

3. The maximum no of cylinders is twelve which is found in Ferran and Lamborghim. Two Italian manufacturers.

4. Fabrica Italiana Automobili Torino, which in english means. Italian Factory Automobiles in Turin.

5. Radial ply tyres are much better than cross ply tyres as they provide more road grip.

6. General Motors, U.S.A.

7. It was made by the British Rover Company in 1950. It was called the Rover Turbocar JET I.

8. Ferrari's symbol is a prancing horse.

9. Certainly yes! e.g. Fiat 124 (1200c.c.) and the Volkswagen 1300 (1300c.c.). Compression ratio of the Fiat is 8.8:1 and that of VW is 7.5:1. Therefore the B.H.P. of the Fiat is 65 and that of VW is 52. Thus maximum speeds are Fiat, 87 m.p.h. and VW 78 m.p.h.

10. The four litre, twelve cylinder and twelve carburettor Ferrari GTB. 4. Berlinetta has been driven on the road at 176 m.p.h.

11. The FIAT 128. (Not yet introduced in Pakistan).

12. Pininfarina and Bertone. (Both Italian).

13. Morris Garages. Where the first car of this make was made and afterward named.

14. Ferrari and Lamborghini, each make three models with twelve cylinders and twelve carburettors.

15. Simply a sports car.

16. Manual transmission is better.

17. There was the James Bond Aston Martin.

18. The twelve seater Checker Aerobus Lionousine to a car having eight doors. It is American.

19. Caught you there!! There is no such car.

20. Yes you can, but with special techniques

21. It is one of the many FIAT car plants in Turin, called the Lingotto plant. It is famous for its uniqueness throughout the world.

**Scoring :** Give yourself one point for one correct.

| | | | |
|---|---|---|---|
| 19 | — | 21 correct | excellent |
| 16 | — | 18 correct | very good. |
| 13 | — | 15 correct | good |
| 10 | — | 12 correct | fair. |
| 7 | — | 9 correct | poor. |
| Below 7 | | | V. Poor. |

# A COLLECTION OF JOCKES

By

SHAKIL AHMED

B. Sc. 3rd Year MBBS.

**Idiocy :**

THE professor is giving demonstrations to medical students. "Now please observe, boys. I place this worm in this test tube of water, and please note, he happily swims around in there with no bad effects. Now watch what happens when I place this same worm in abeaker of alcohol. See! He shrivels up and dies. What lesson do we learn from today's experiment, boys?"

Student "If you drink whisky, you wil never have worms."

A sailor ran up to the officer of the deck and mumbled something in his ears. The officer yelled at him, "Sing out, man! Sing it out!"

The sailor took a deep breath and sang;
"Should old acquaintance be forgot
And never brought to mind?
The captain fell overboard;
"He's half a mile behind.

"Sir, I can't pay the hostel fees this month."
"But you said that last month!"
"I kept my word, did'nt I?"

Doctor after diagnosis: "You, Sir, are a schizophrenic with paranoiac tendencies.

"What's that in layman's language, Doctor?

"You are a latent creep!"

* * *

In Moscow an American is explaining to a local man, We got liberty. "Back in home, in Washington, an American can stand on the capital building's step, and shout to the world "the President is a BUM!"

"Ah, my friend, "Answers, the Russia,n" Here, too, a Russian can stand on the step, of the Kremlin and shout 'The American President is a BUM!"

"Doctor, I am going to a rattle snake country, and I came to see you to get a bit of advice on what to do in case I get bitten by a rattle snake."

"Well, if a rattle snake bites you on the hand, you must immediately draw the poison out with your mouth and spit out the poison." "Doctor. What if he bites me where I sit down?"

"That's when you find out who your friends are!"

The old women tapped on the sleeping parrot's cage, and said, "Hey, birdie, wake up— can you talk?"

"Sure" said the bird, "Can you fly?"



# Quotable Quotes

By

AZRA HATIMALI

*Final Year M.B.,B.S.*

1. Wherever there is a secret there must be something wrong. *Lockhart.*
2. Experience the name men give to their mistakes. *Oscar Wilde*
3. Speak softly and carry a big stick; you will go far. *Theodore Roosevelt.*
4. The temple of our purest thought is silence.
5. A word once uttered can never be recalled. *Horace.*
6. We walk alone in this world, Friends such as we desire, are dreams and fables. *Emerson.*
7. In the night there is peace for the old and hope for the young *Shaw.*
8. Though Pride is not a virtue, it is the parent of many virtues —*J. Churton Collins.*
9. The golden rule is that there are no golden rules. *Shaw.*
10. In every parting there is an image of death. *George Eliot.*
11. No path of flowers leads to glory. *La fontaine.*
12. Faith is a higher faculty than reason *Bailey*
13. He that studies revenge keeps his own wounds green. *Bacon.*
14. Hatred is a settled anger. *Cicero.*
15. A man is never as unhappy as he thinks he is, nor as happy as he had hoped. *La Rochefoveauld.*
16. Contradiction should awaken attention not passion. *Fuller.*
17. Hearts do not break; they bend and wither. *H. W. Thompson.*

# WORDS OF WORTH

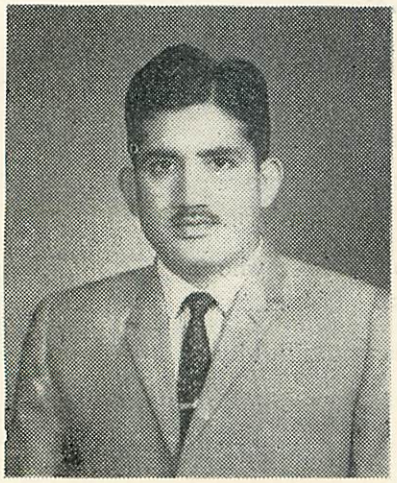
By

TALAT ANJUM

*1st Year M. B. B. S.*

1. Education is a cheap defence of nation.
2. To accept good advice is but to increase ability. (*Jotne*)
3. Advice is seldom welcome, those who need it most, like it least. (*Jownson*)
4. We give advice by bucket, but take it by the grain.
5. The worst man often gives the best advice.
6. Admiration is very short-lived passion that immediately decays upon growing familiar with its object. (*Addison*)
7. Only the actions of the just smell sweet and blossom in the dust. (*Snieley*)
8. Actions are ours; their consequences belong to heaven (*Sir P. Frances*)
9. The actions of men are like the index to a book, they point out what is most remarkable in them (*Wromas*)
10. Distances sometimes endears friendship and sweeten it. (*J. Nowell*)
11. Ability is a poor man's wealth.(*M. Wren*)
12. Of all earthly music that reaches furthest is the beating of a truly loving heart. (*H. W. Beecner*).
13. Old wood best to burn, old friends to trust and old authors to read. (*Bacon*)
14. The mission of art is to represent nature not to imitate her. (*W. H. Hunt*)
15. The best part of beauty is that which no. picture can express (*Bacno.*)

## Talking Points



DR. MUZAFFAR IQBAL CHUGTAI

1. No one becomes guilty by fate, (*Seneca*)
2. Time enough to think of the future when you haven't any future to think of (*Shaw*)
3. Freedom our pain and plenty our disease. (*Drydem*)
4. He not made a beggar by banqueting upon borrowing (*Apocryple*)
5. Poverty is the morning dream of great minds. (*Lamartine*).
6. It is astonishing how little one feels poverty when one loves (*Bulower—Lytton*)
7. Reading is thinking with some one else's head (*Schoper-haver*)
8. Flattery, the land made of the vices (*Gicero*)
9. Make yourself necessary to some-body. (*Emerson*).
10. Enervation (Love of the world and dislike of death) is the death of a nation. (*The Holy Prophet*).


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*from*

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# QUOTATIONS
## Collected By

JAVAID HUSSAIN KASURI
(*Final Year*) M.B.,B.S.

Ability is of little account without opportunity.

We always love those who admire us, and we do not always love those whom we admire.

If wrinkles must be written upon our brows, let them not be written upon the heart. The spirit not grow old.

Stndy until twenty-five, investigation until forty, profession until sixty, at which age I would have him retired on a double allowance.

In youth the days are short and the years are long; in old age the years are short and the days long.

Never argue at the dinner table for the one who is not hungry always gets the best of the argument.

There is no cosmetic for beauty like happiness.

Beauty is truth, truth beauty.

In bed we laugh, in bed we cry;
And born in bed, in bed we die;
The near approach a bed may show
Of human bliss to human woe.

Believe only half of what you see and nothing what you hear.

A heathy body is a guestchamber for the soul; a sick body is a prison.

Some books are to be tasted, others to be swallowed, and some few to be chewed and digested.

If your lips would keep from slips
Five things observe with care:
To whom you speak, of whom you speak,
And how, and when, and where.

When wealth is lost, nothing is lost;
When health is lost, something is lost;
When character is lost, all is lost;

A man of courage is also full of faith.

Eat to please thyself, but dress to please others.

The man who makes no mistakes does not usually make anything.

An excuse is worse and more terrible then a lie; for an excuse is a lie guarded.

If you would not be forgotten as soon as you are dead, either write things worth reading or do things worth writing.

Young men think old men are fools; but old men know young men are the fools.

Fortune truly helps those who are of judgment.

The best way to keep your friends is to never owe them anything and never lend them anything.

The only way to have a friend is to be one.

True friendship is a plant of slow growth and must undergo and withstand the shocks of adversity before it is entitled to the appellation.

Gold begets in brethren hate;
Gold in families debate;
Gold does friendship separate;
Gold does civil wars create.

Every guest hates the others, and the host them all.

I have learned to seek my happiness by limiting my desires, rather than in attempting to satisfy them.

Refuse to be ill. Never tell people you are ill; never own it to yourself. Illness is one of those things which a man should resist on principle at the onset.

Some people's hearts are shrunk in them, like dried nuts. You can hear'em rattle as they walk.

A good tree cannot bring forth evil fruit, neither can corrupt tree bring forth good fruit.

I love my country better than my family; but I love humanity better than my country.

There is a no death: the stars go down to rise upon some fairer shore.

He that is not jealous is not in love.

Some women blush when they are kissed some call for they police, some swear; some bite. But the worst are those who laugh.

Soul meets soul on lovers lips.

Man loves little and often, woman much and rarely.

Love is an ocean of emotions, entirely surrounded by expenses.

Love's like the measles-all the worse when it comes late in life.

Love is often a fruit of marriage.

Love a grave mental disease.

Blue eyes say, "Love me or I die"; black eyes say, "Love me or I kill thee".

It is better for a woman to marry a man who loves her than a man she loves.

The physician heals, Nature makes well.

I firmly believe that if the whole materia medica as now used, could be sunk to the bottom of the sea, it would be all the better for mankind and all the worse for the fishes.

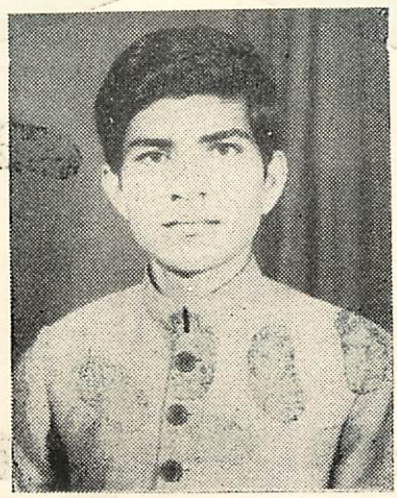
Nothing begins, and nothing ends,
That is not paid with moan;
For me are born in others' pain,
And perish in our own.

The pain of the mind is worse than the pain of the body.

Tears are the silent language of grief.

# Thoughts to Think

By



S.M. INKISAR ALI
*III Year M. B., B. S.*

The longest journey begins with a single step,

To speak is to sow, to listen is to reap, to work is to pray,

Personal beauty will fade but beauty of the mind endures for ever,

He that falls in love with himself, will have no rivals.

Activity breeds prosperity,

Luck is what happens when preparation meets opportunity.

A fool dreams of wealth, wise man of happiness.

Truth is not only stranger than modern fiction, but more decent.

If skill could be acquired by watching, dogs will become butchers.

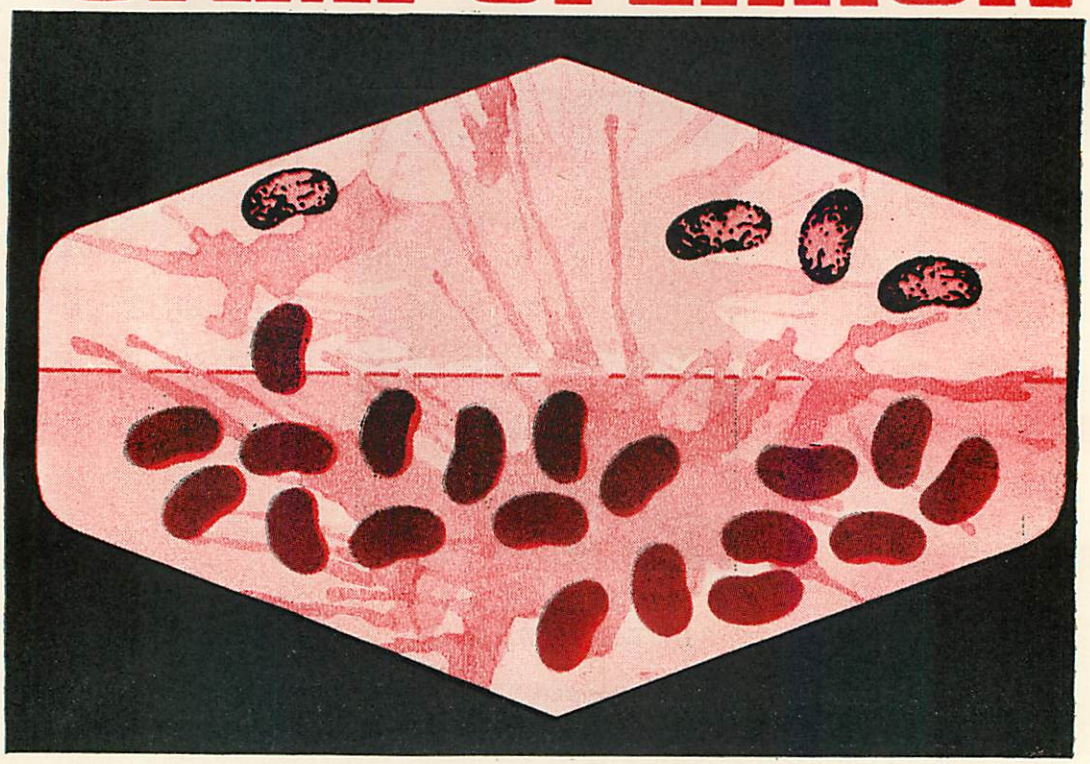
If you discourage hope you cripple recovery.

Water cleans everything except a guilty conscience.

Thorns and roses grow on the same tree.

It is the tears of earth that keep her smile in bloom.

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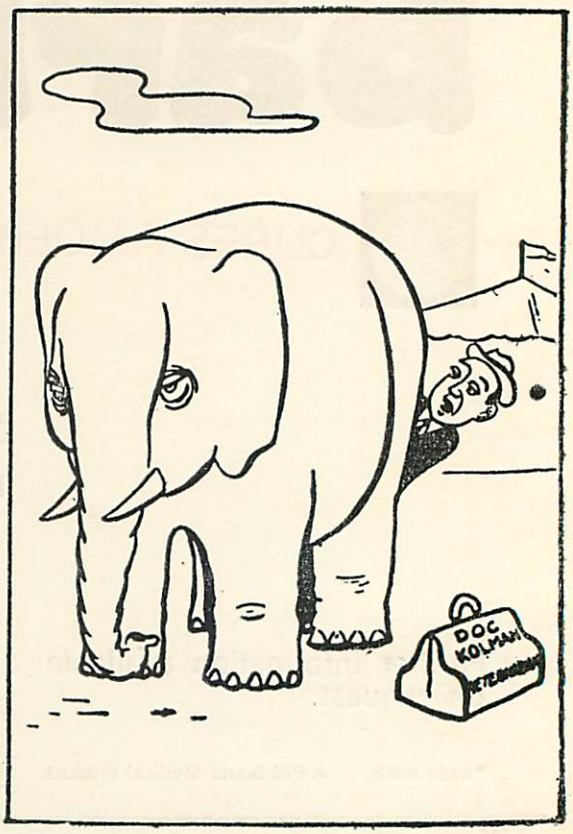
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# good humour



*Hey! Stop it.*



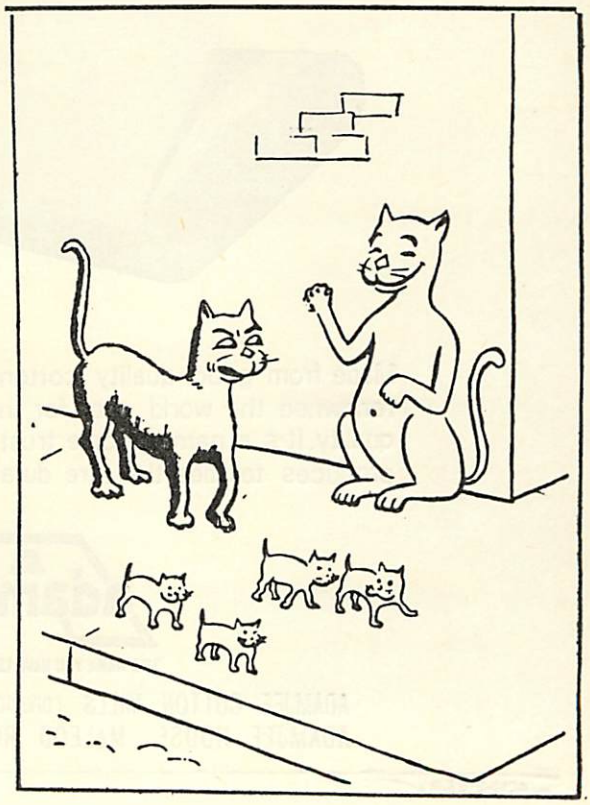

*Now Cough.*

Scanned by Office of
Amin H. Karim MD

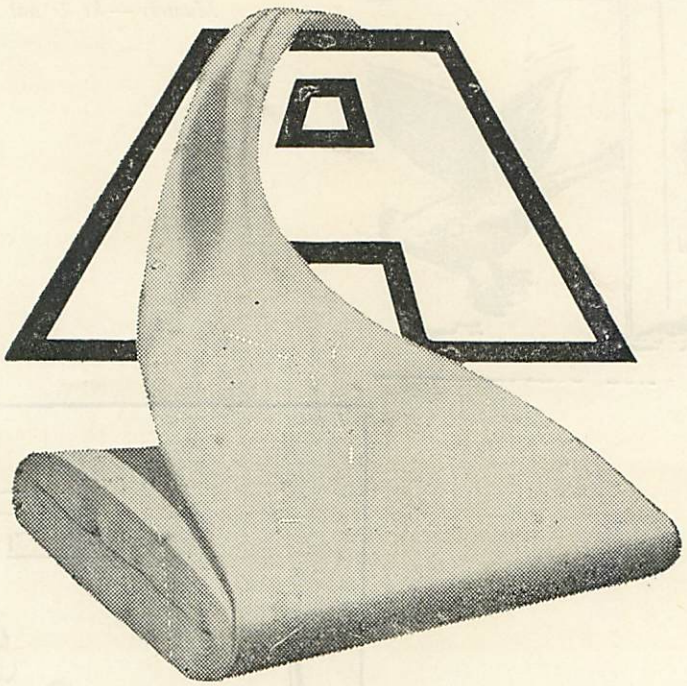


*Mummy — he is not leaving me*

*You double crosser, you said, you would only just wrestel.*



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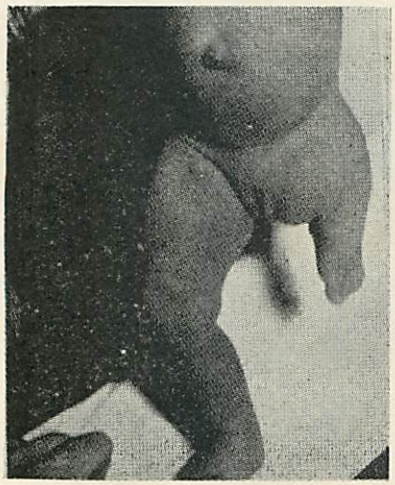
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|---|---|
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| Phenacetin U.S.P. | 250 mg. |
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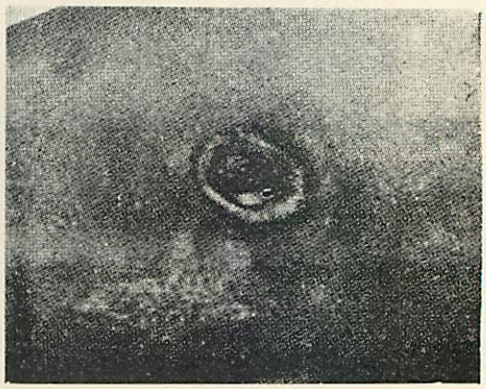
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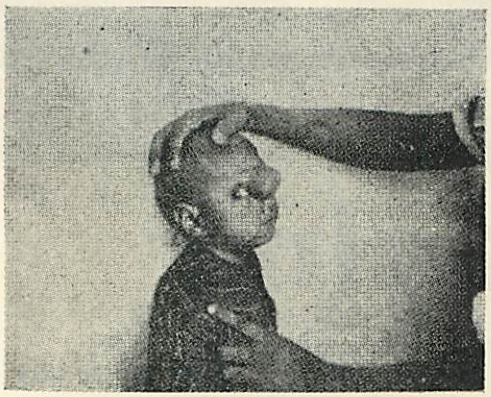
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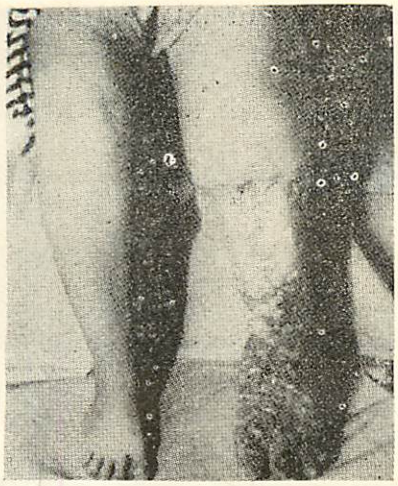


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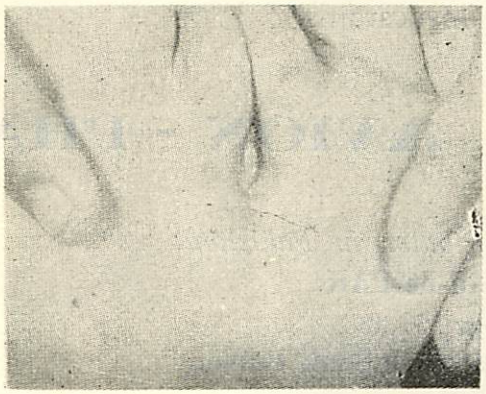


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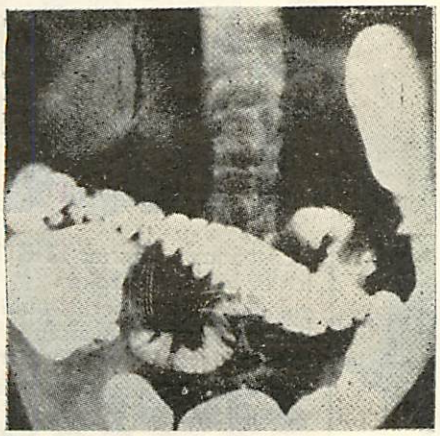
# SPOT DIAGNOSIS



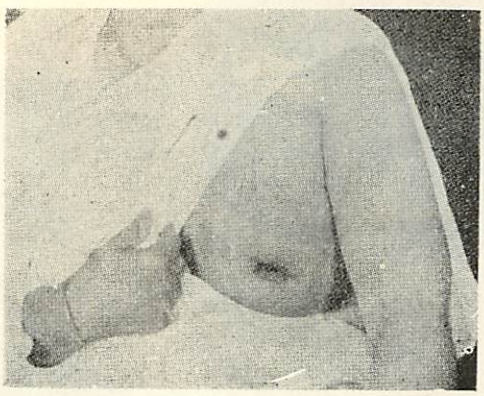
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8

( Answers on Page 306 )

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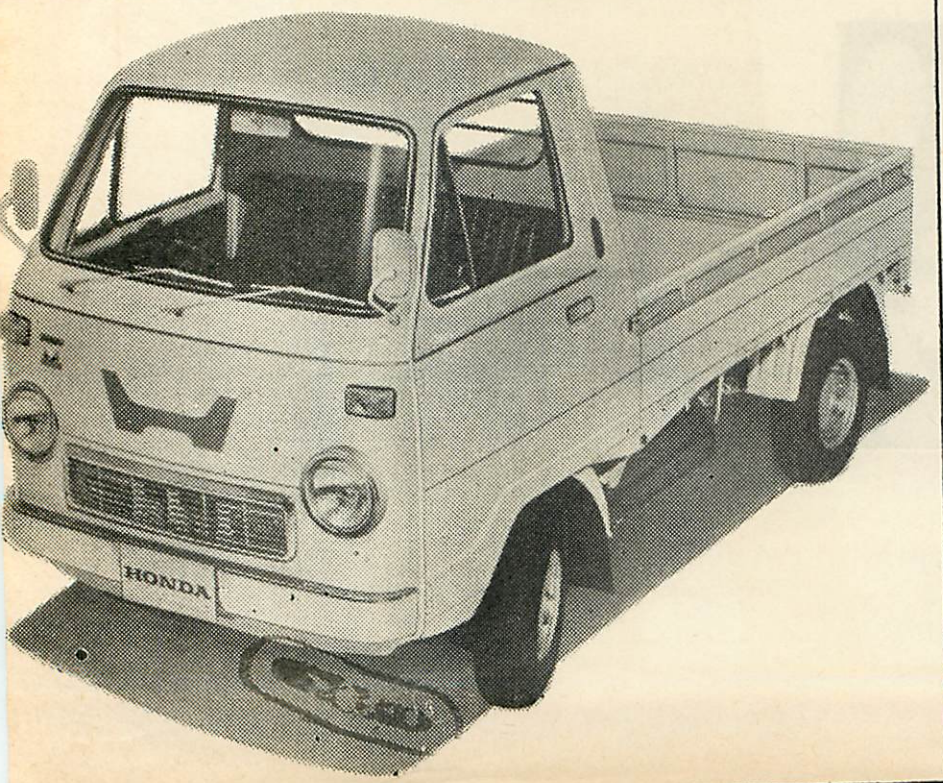
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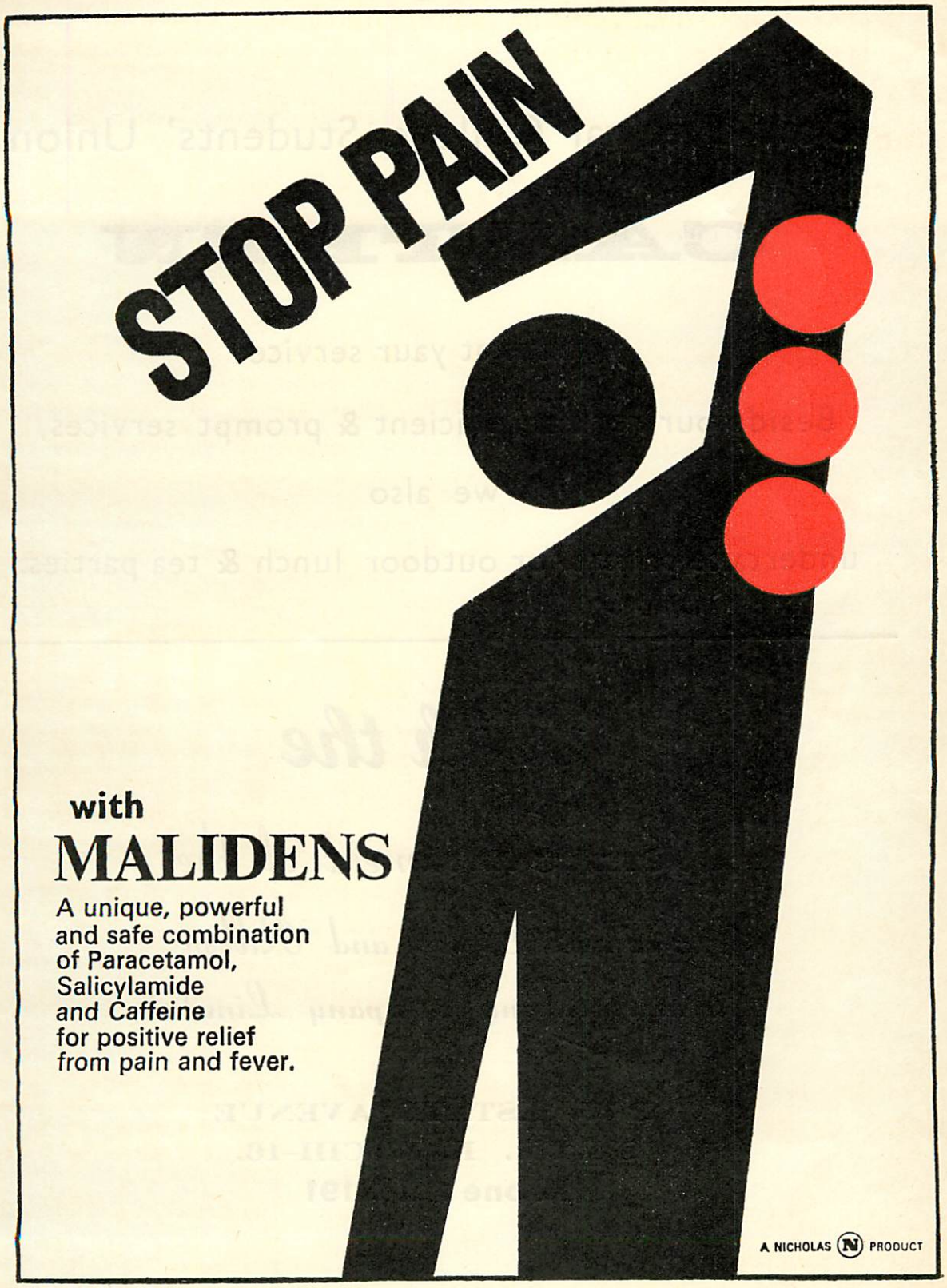
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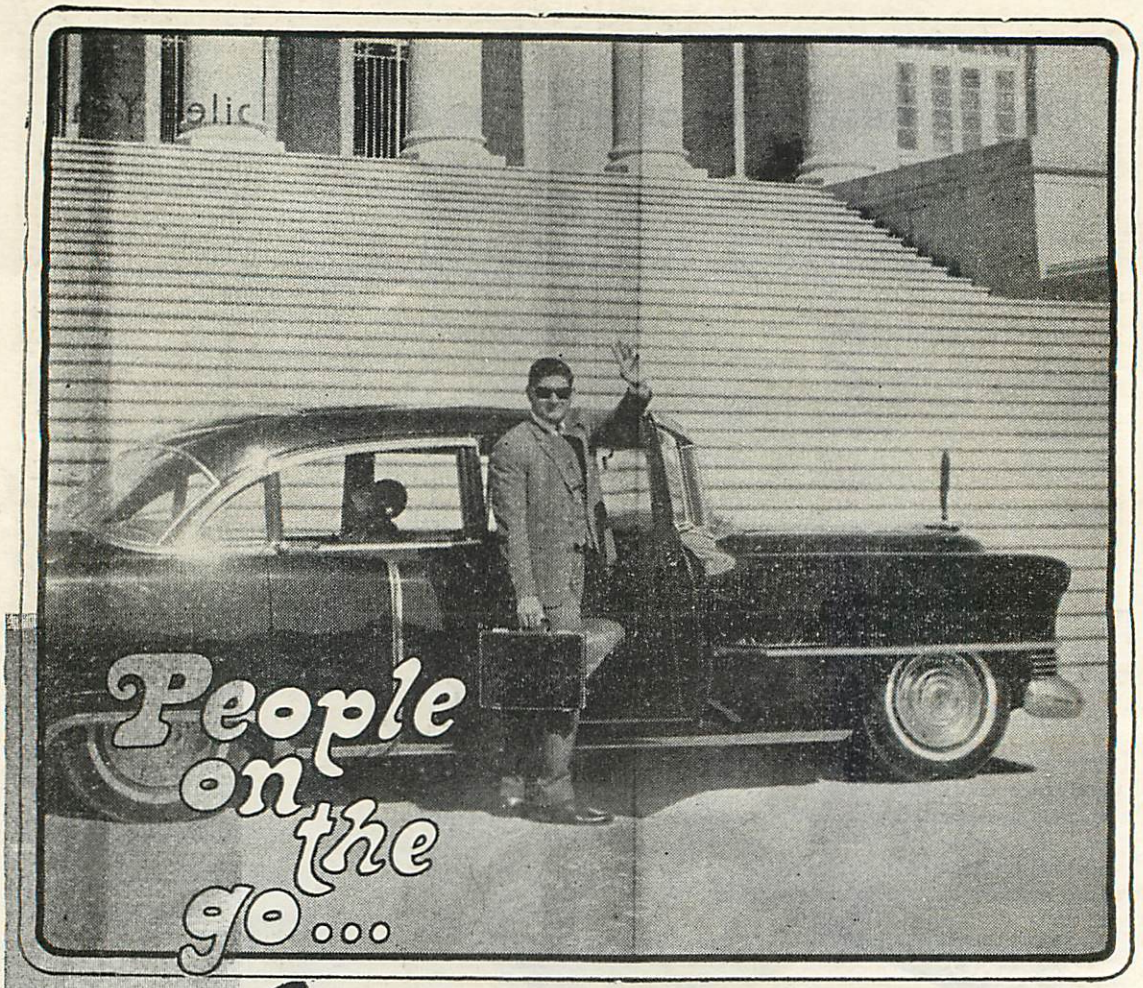
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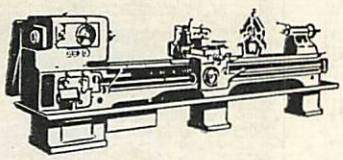
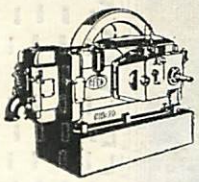
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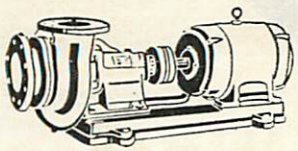
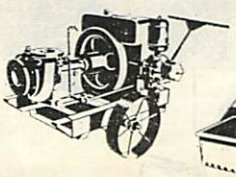
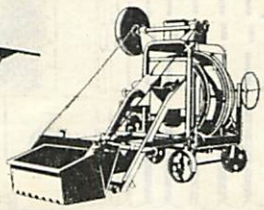
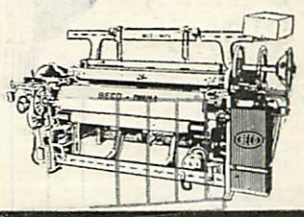
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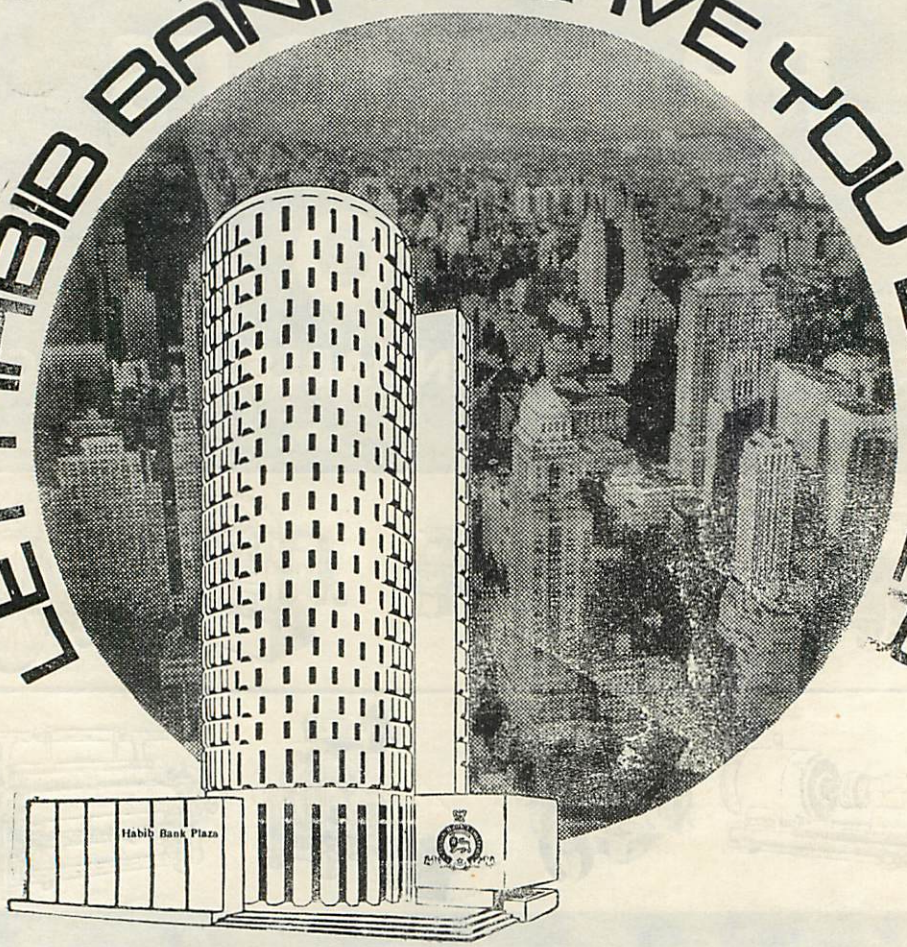
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# Magazine Secretary's Report

I HAVE great joy and pleasure in placing in the hands of the readers this belated Silver Jubilee Edition of DOWLITE INTERNATIONAL, for which they had been waiting so impatiently with unabated enthusiasm. The delay is very much regretted and hundreds of possible reasons range out of my pew.

My colleagues in the Magazine Committee, the Editorial Board and myself have done our best possible to bring out this issue well in time and with more and more informations and an interesting issue than the previous ones. Being the College's official Annual Magazine, I thought it necessary to postpone the publication till the different secretaries could give in their respective reports, but this year, most unfortunatly, due to the repeated postponement of the annual examinations and then later on due to certain political situation unfortunately prevailing in the college, they were not permitted by the higher authorities to continue certain other activities, inspite of the other colleges having their activities continued.

Nevertheless, I have managed to cover some of the activities of some of the secretaries, who have sent in their reports and photographs and to whom I am very grateful. While on the other hand it is most unfortunate that on repeated request to the Clinical and the Gynmkhana secreteries who do seem not to recognise this Magazine as the official organ of the college, thus ignored sending the reports of their little activities which too they had at the cost of other general students.

**Improvements and Originality :**

Several improvements and originalities have been included in this issue. To start with, we have made different sections for Foreign Contributors, Home Doctors, Respected Staff and the Medicos. Besides there are other sections reflecting the different college activities. These sections originally designed and prepared by Mr. Usman Sadiq, Baluch whose work is paraise worthy.

**Articles :**

It is gratifying to note that in this year's issue in contrast to the previous issues, we have published the maximum number of articles in every section. The articles written by our medicos show that beside their brilliant medical knowledge, they also know literature, historiy, poems, and so on.

As far as possible the authors' picture has been printed along with their article.

**History of our Institution :**

It indeed gives me great pleasure and pride and a feeling of satisfaction to have been successful in presenting to dear readers the history and the back-ground of our this noble institution. It is worth mentioning the amount of hardship and the investigations I had to undertake to produce this history in this form. To mention a few, I had to have repeated correspondence with far off foreign places like U.S.A., U.K. and India. To trace out something about Sir Hugh Dow, consulted several authorities like the British Council, its High Commission and its Foreign offfce in London, Pakistan Information Centre, Sind Secretariate, old news paper (The News Ghazette), Karachi Yatch and Sind clubs, some of the prominent citizens of Karachi, Libraries and many such other authorities. I owe my sincere thanks and gratitude to our ex-Administrator, Prof. M.A. Shah who very kindly, for days till late night helped me with the History of College and some of the important Photographes.

*I am grateful to Prof. Mazhar-ul-Haq and Dr. M.A. Ansari for the Historical Pictures, valuable advises and the sincere help they gave me. I am also highly obliged and grateful to Mr. Siddiqui of the Pakistan National Archive Department, without whose help this publication would have been incomplete.*

**History of DOWLITE Magazine :**

*Publication of this magazine started from* 1950, *when it was called* "**The Dow Medical College Magazine-Annual Number**" *The then Chairman of the magazine section was Prof. A. Wahid. With few exceptions this magazine has been regularly published every year. This Silver Jubilee Edition* 1970-71 *is the* 18*th issue.*

*It was the* 1*st point in the manifesto of Mr. Noor Ali Shah, the candidate for the post of Magazine Secretary, in the election held on* 19*th of January* 1957, *to give a suitable name to the College Magazine. On being elected to the post, accordingly, he invited suggestions for the same. Non of the suggestions received were appealing. Finally the name* ', **DOWLITE**" *was selected . The same name was officially selected in days of Mr. Brohi Hasan, Ex-Magazine sectretary, under the chairmanship of Prof. A. Wahid in* 1951. *Thus the name* **DOWLITE** *was selected for reasons of being simple, meaningful, good sounding and contained the name Dow in it.*

**Title Cover :**

*Being the Silver Jubilee Edition, I thought it very appropriate to reflect the College and Hospital and their background on the title cover. On the top right hand side is the old structure which was demolished and the present College building shown in the foregrond was constructed. While on the top left side in the hospital and its latest development, the auditorium. To give it an Islamic touch the college mosque is produced on the lower left side.*

**Achievements :**

*The Pakistan Pharmaceutical Manufacturers Association have recognised* **DOWLITE** *Magazine as the official Annual College Magazine, and I hope like this year, they would again helps us in the years to come. They would send a circular to all the association members requesting them to adverstise in this magazine. I am indeed very grateful to Mr. Abbas, the Secretary of the Association who very generously helped and advised me throughout.*

**Writers' Forum :**

*Under the auspices of this forum, an interclass essay competition was held, where several students participated, and prizes were distributed for the same. I am grateful to Surgeon M.R. Shirazi, Chairman writer's Forum, who took a very keen interest in the society and my thanks to Mr. Irfan Ali the Vice-President of the Society to have conducted the competition very successfully.*

**Photographic Society :**

*A two-day colourful All Pakistan Inter-Collegiate Photographic exhibition was held in which more than* 400, *pictures were exhibited. There were three groups, one of Black and White prints, one of Coloured Prints and the Third group was of Coloured transparencies. Three Prizes for each section were distributed. Fortunately the trophy come to our College while in the individual Coloured Photography it went to a student of Chittagong.*

*In order to give all the Photographs a uniform look, beautiful photography mounts were printed and all the pictures were mounted on them.*

*I am grateful to Dr. Nusrat Ali Shaikh, Director, Skin & Social Hygiene Centre, the Chairman of the Society, to have come over as the Chief Judge, and help us with the same. My Thanks ar to Miss Shaesta Gilani, secretary of the society for her sincer hard work. My thanks are also to Agfa-Gevert Co. for their generous donation.*

**Arts and Crafts Society :**

*A two days Arts and Crafts exhibition was organised under the auspices of this Society. Over three hundred exhibits were demonstrated. The Art Section was sub-divided into, water colour, oil paintings, pencil sketch and caliography. Each section had three prizes and certificates.*

*In the Crafts Section, there were again sub-division like, handicrafts, imbroaidary and fabric painting. Here too three prize and certificates were given in each section.*

*I am indeed ve.y grateful and highly obliged to Miss Azra Hatimali, the Vice-President of the Society for her most sincere and hard work, and Mr. Usman Baluch. I congratulate them for their most encouraging support they showed, till the last minute of the exhibition, and thus made it a grand success I extend my deep gratitude and thanks to Mr. Rahi Principal of Art School and Dr. Shaukat to have come over as the Judges.*

**Flower Show :**

*For the first time in the history of our college an Inter-collegiate and an Inter Class Flower Exhibition was organised. This was a very colourful one, and as many as about 80 exhibits were demonstrated.*

*The flower show was of two section, a potted flower section and a cut flower section, this was further sub-divided into two more groups, a wet arrangement and the dry arrangement.*

*I am grateful to Mrs. Habib Patel and Mrs. Razzak Mohd. to have come over as iudges for this flower show exhibition despite their many pressing preoccupations. I am also grateful to the Press to have covered the whole exhibition and the prize distribution ceremony.*

**The Namood-e-Sehar :**

*This is the Urdu Annual Magazine of our college. Till today it had not been given a due consideration and as much importances as that given to* **Dowlite** *the English Annual Magazine. This year a lot of stress and hard work has been done on it. and is brought upto the level of* **Dowlite** *or even better in some respects. Unlike the previous issues, it contains about 270 pages in contrast to about 150—160 pages. All the potraits, have been pencil sketched plus more photographs, more and better articles, beautiful designs and many other good changes have taken place.*

*I am very grateful to Mr. Usman Baluch and Mr. Nasser who very painstakingly got down for hours in preparing these sketches. Further more, I am highly obliged and grateful to Mr. Saddaqat Ali Choudhry the managing editor who very honestly and sincerely put a lot of his precious time and hard work to bring this magazine in this shape, His excellant work is praiseworthy, I owe my sincere thanks and gratitude to him and his pannel of worker and helping hands.*

**Regrets :**

*It is regretted that owing to shortage of space and other unavoidable circumstances articles of some of the doctors and students could not be included in these issues of Dowlite and Namood-e-Sehar. This should at no cost dishearten them from contributing again for these magazines in the later issues to come.*

**Acknowledgement :**

*To start with, I take this opportunity to thank all friend, colleagues, supporters and well wishers to have trusted their precious vote on me and got me elected to this post, and gave me a chance to help them in this respect.*

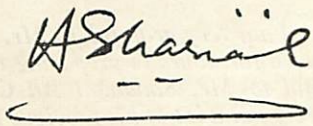
*I am chiefly indebted to our respected Professor Fazal Elahi, Professor of surgery, Dow Medical College, Civil Hospital Karachi, the Chairman of the Magazine Section to have had accepted the chairmanship for the same. I am grateful to him for he has, despite many pressing preoccupations, always willingly given me suggestions and guidance in every respect, from the editorial, title cover, set-up of the Magazine to its individual articles. I am highly obliged to him, for inspite of his busy schedule programme, he came over and presided as the chief guest and distributed the prizes in the Inter Collegiate and Inter Class Photography, Arts & Crafts and Flower show exhibitions.*

*It was indeed very fatherly of our honourable Administrator, Professor A. Wahid, who is also the Patron of the Dow Medical College Students' Union, to have given the Magazine Section the permition to have its exhibition organise in the new college building inspite of some inconveniance, I deem it an honour and a previlage to be the pioneer in utilizing this new block, I am also highly obliged to him to have come over and inaugrated the exhibition.*

*I extend my sincere thanks to the Foreign Contributors, our honourable home doctors our respected Staff and the Medicos, to have send in their most valuable and interesting articles,. My thanks are also to Mr. Arif Hashmi, Mr. Masood Mr. Jamil Mr. Zubair Farooq, Tahir Mahmood and Mr.Juzar Ali, and other colleagues of mine for their sincere help. I am very grateful to Mr. Asif Ali Mansuri the President of the Union for his ever support and help that he offered in every respect to the Magazine Section.*

*I would be failing in my task if I do not express my heartiest and sincere thanks to the college administration and its very kind staff especially Mr. M. Ahmed, the administrative officer, Mr. Iqbal of establishment branch, Mr. Rashid of the students' branch and Mr. Malik of the store department. My thanks are also to Mr. Shamim and Mr. Shamshad the college typiest, who very willingly helped me in typing the necessary documents.*

*Last bust not the least I owe my sincere thanks to Mr. Sh. Mohd. Hussain and Mr. Saadiq of Process Pakistan and Liberty Printers, and to their kind and most helpful staff who printed this Publication. My thanks are also due to Mr. Ameen of Royal Blocks for making all blocks printed in this magazine.*



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*(Hashem Shariat)*
*Editor and Magazine Secretary*
*President*
*Photography, Arts & Crafts Society*
*and Writers Forum, Dow Medical College*
*Students' Union*

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**(Editor)**

# Summery of Dowlite International

**Edition** **18th issue Silver Jubilee**

| | |
|---|---|
| Date of going to Press | 24th. February 1971 |
| Number of blocks made | 283 |
| Number of Ground Printing | 21 |
| Pages Printed on offset | 22 |
| Number of Foriegn articles | 9 |
| Number of Home Doctors articles | 6 |
| Number of staff articles | 16 |
| Number of medicos articles | 66 |
| Number of Messeges | 9 |
| Number of Biodatas | 19 |
| Number of Farewells | 3 |
| Number of obitnaries | 4 |
| Number of Pages | 468 |
| Number of advertisments | 72 |
| Quality of Paper used | Art Paper |
| Supplied by : | Victory Stationers |
| Printed at ; | Liberty Printers and Process Pakistan |
| Blocks made by : | Royal Blocks |

Date of complition of Dawlite International July 1971

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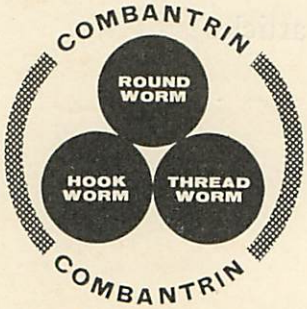
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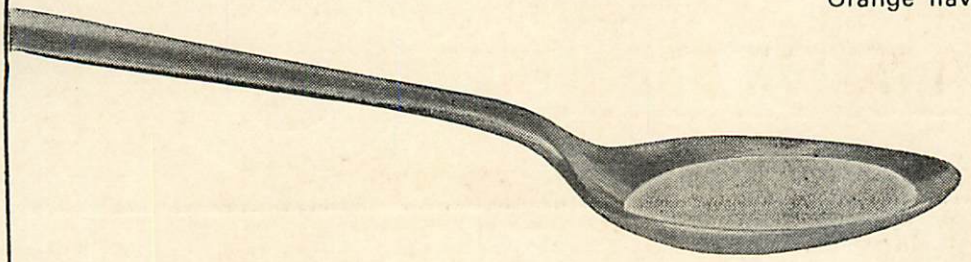
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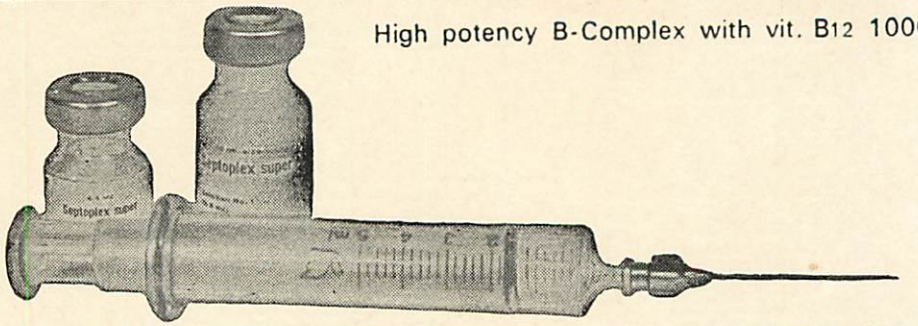
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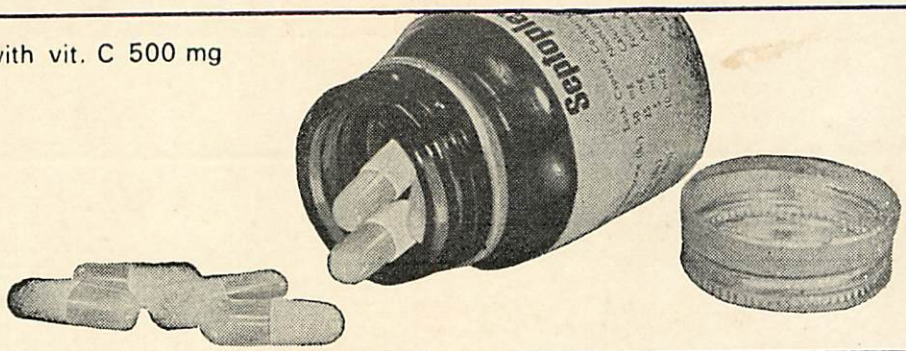
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