ELIXIR

nber 1-1963

H.K. $4.00

a truly scientific approach to cough therapy

single - entity,
non - narcotic
antitussive

LETUSIN™

(levopropoxyphene, Lilly)

effectively controls
useless cough
without added opiates

Scientifically
conceived
tested
evaluated

clinical advantages:

- does not produce codeine constipation or antihistamine sedation
- retains its antitusive effect without development of tolerance.
- 'Pulvules' may be carried conveniently in pocket or purse.

for carrying in pocket or purse
PULVULES LETUSIN 50 mg. 100 mg.

Usual dosage: Children over 25 kg.—50 mg. every four hours.
Adults: 50 or 100 mg. every four hours.

wide margin of safety

for those who prefer liquids
SUSPENSION LETUSIN 50 mg. per 5cc. teaspoonful.

permits normal expectoration

Usual dosage: Infants and children up to 25 kg. — 25 mg. (½ teaspoonful) every four hours. Children, 25 to 50 kg.—50 mg. (1 teaspoonful) every four hours. Adults — 50 or 100 mg. (1 or 2 teaspoonfuls) every four hours.

ELI LILLY INTERNATIONAL CORPORATION

Distributors:

Y. C. WOO & CO., LTD.
SOUTH CHINA MORNING POST BLDG.
HONG KONG
Telephones: 34295, 37496

INDIANAPOLIS
INDIANA
U. S. A.

Lilly

'Stemetil'

trade mark brand

PROCHLORPERAZINE

for prevention
and treatment

Available as tablets, syrup
and injection solution

An **M&B** *brand Medical Product*

MANUFACTURED BY

MAY & BAKER LTD

DAGENHAM ENGLAND

BRANCH OFFICE

P.O. BOX 599 · HONGKONG

MA 644

THE TREATMENT OF ROUNDWORMS AND THREADWORMS

Preventing Re-infection

Roundworms: Ascaris lumbricoides

The mature, female roundworm produces an average of 200,000 ova per day and when sanitary conditions and personal hygiene are inadequate, the infection can spread rapidly. Where infection levels have been allowed to build up in a community, re-infection presents a problem which cannot be ignored.

Further, Ascaris ova can survive for long periods and in cool moist conditions, such as in the soil where crops are growing, survival for up to five years has been reported. (Watson, 1960). The ova have a protective sheath and are resistant to antiseptics and other chemical substances. They are, however, destroyed by exposure to direct sunlight, dehydration being the main factor.

Roels-Broadhurst and Demaeyer (1958), in a group of 196 children cured by treatment with piperazine, found that 6% were re-infected after three months and 61% after six months. This was the level of infection prior to treatment. Regular treatment was, therefore, suggested by these and other workers, as the only practical means of controlling Ascaris levels in heavily infected areas.

In a study carried out by Biagi and Rodriguez (1960) in an isolated Mexican village, the 529 inhabitants were each given a monthly dose of piperazine for eight consecutive months. The initial infection rate was 28% and, at the end of the trial, ascariasis could not be detected in any of the inhabitants. Mature worms, capable of contributing infectivity to the soil were not seen in post-treatment stools after the sixth month and it is concluded that eradication of human ascariasis can be achieved by repeated mass treatments at monthly intervals.

It has been shown that the length of the life-cycle from ingestion of ova to mature worms producing ova is approximately eight weeks. The importance of the timing of the repeat treatment is clearly seen; the worms being eliminated before they mature. Only in this way is the life-cycle broken.

Monthly treatment of all members of a community thus offers a possible means of eradication of roundworm infection. Spasmodic treatment in a less organised manner can reduce the level of infection but will be much less effective and will, in the end, be more expensive.

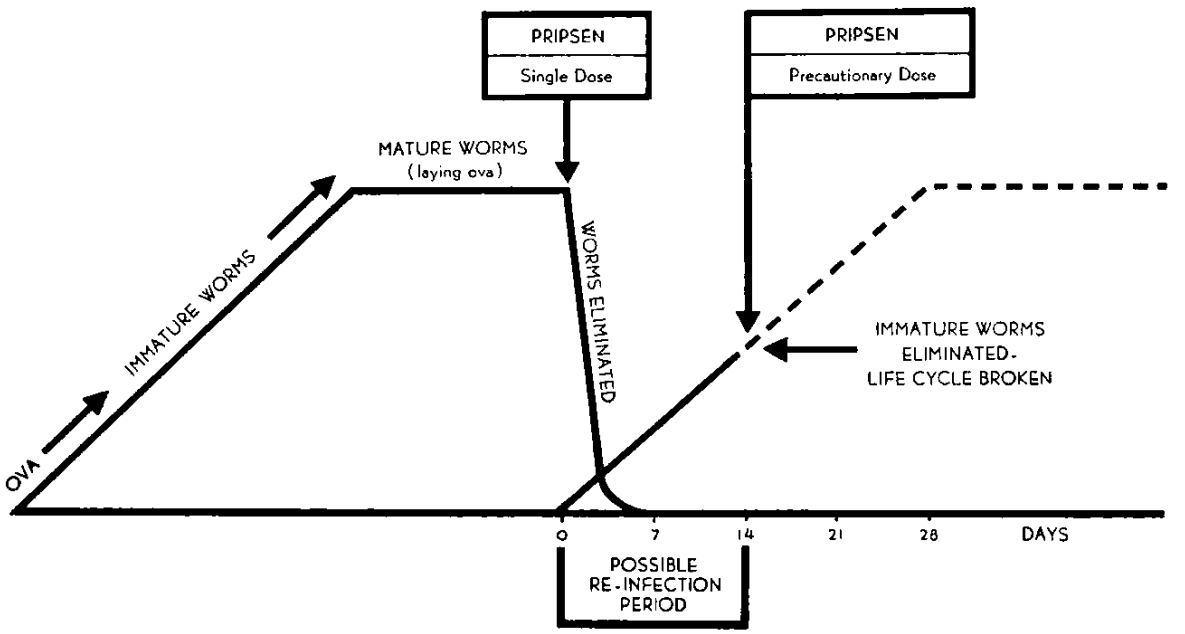
Threadworms (Pinworms): Enterobius vermicularis

The general principle outlined above, namely eradication of the infection before the worms mature, can also be applied to break the life-cycle of the threadworm.

Here, re-infection is principally associated with infected clothing and bedding and adherence of ova to the skin in the peri-anal region. Personal hygiene is, thus, an important factor if re-infection in the period following treatment is to be avoided: cleansing of the patient's skin, and the boiling of under-clothes and bed linen to destroy ova, are important. This will eliminate the majority of infective ova and the removal of infected house-dust, particularly from the bedrooms and lavatories, will further reduce the risk of re-infection.

Cure-rates of virtually 100% are achieved with either a single dose of Pripsen, (piperazine and standardized senna), or fourteen doses of piperazine alone given over seven days. However, despite this, re-infection occurs.

Threadworm ova survive for up to fourteen days, but a large proportion of these are non-infective after seven days. Thus, re-infection occurs mainly in the first seven post-treatment days and will have ceased by the fourteenth day. The worms mature approximately four weeks after ingestion of ova and a second treatment after fourteen days will remove the immature worms, thus, breaking the life-cycle. It is, therefore, possible, with two treatments timed in this way, to eradicate the most persistent threadworm infection.



PREVENTING RE-INFECTION — THREADWORMS

It has been repeatedly shown that where the infection has been established for some weeks, all members of the family are usually infected and all should be treated at the same time, or they will re-infect each other.

It will be seen that whereas in the case of threadworms it is possible with two doses to eliminate the infection, the same is not true of ascarids, as the ova can survive in moist earth for a number of years, although those exposed to strong sunlight will be destroyed within a few days. Efficient sewage disposal clearly plays a vital role in controlling this infection.

Heavy Ascarid Infections

Platman (1962) and other workers have shown that although single-dose treatment is effective in most cases, in heavily infected cases cure is unlikely, although the majority of the worms will be eliminated. Second and third doses given to these patients have resulted in 100% cure-rates in these resistant cases.

The importance of relating treatment to the life-cycle of the worms and the period during which the ova remain infective, is clear. Single-dose treatment has obvious advantages, both in convenience and to facilitate proper timing of doses.

At present, Pripsen is the only single-dose treatment which is effective for both roundworms and threadworms.

References

Biagi, F. F. and Rodriguez, O. (1960) *Amer. J. Trop. Med. Hyg.*, 3, 274.

Platman, S. R. (1962) *S. Afr. med. J.*, 36, 240.

Roels-Broadhurst, D. and Demaeyer, E. M. (1958) *Brit. med. J.*, i, 944.

Watson, J. M. (1960) *Medical Helminthology*, London: Bailliere. p.129.


Pripsen
GRANULES
Granules 10 Grammes
Pripsen
A SINGLE DOSE TREATMENT FOR ROUNDWORMS AND THREADWORMS (PINWORMS)
A SINGLE-DOSE TREATMENT FOR BOTH ROUNDWORMS AND THREADWORMS (PINWORMS)
10 Grammes (160 gr.)
Pripsen
REGD
GRANULES
MADE IN
WL
ENGLAND
ROUNDWORMS & THREADWORMS
NEW! ONE-DAY TREATMENT
Made in England by WESTMINSTER LABORATORIES LTD. London N.W.1

Senokot

STANDARDIZED SENNA GRANULES AND TABLETS

WESTMINSTER LABORATORIES LTD., LONDON N.W.1

RE-EDUCATION OF THE CONSTIPATED BOWEL

Many clinical reports have confirmed that standardized senna, used in controlled dosage and given nightly during the period of treatment, has a re-educative effect on the constipated bowel. A regular habit time can be established during treatment, and this persists in most cases when treatment is gradually withdrawn. The dose used is minimal, one which prevents recurrence of constipation on the one hand and avoids loose stools on the other. The use of this regimen offers a new approach to treatment.

Constipation is often considered to be an unimportant condition, but to those caring for old people, chronically constipated children, and to those concerned in the reestablishment of normal bowel function in women following childbirth, successful treatment is of considerable importance. The correction of constipation in such cases contributes much to the happiness and well-being of the patient.

Campbell-Mackie (1959) states:

> "The introduction of standardized senna marks a step forward in treatment in that it provides a safe and physiological means of restoring the natural function as quickly as possible."

This re-educative effect has not been reported with any other drug used in this condition, and the possible reasons for this unique action of standardized senna are examined below.

The Peristaltic Reflex

The normal movements in the alimentary tract are produced by a neuromuscular reflex within the wall of the gut. It has been established that intraluminal pressure from the gut contents is the natural stimulus. This is transmitted through a number of sensory plexuses to the motor (Auerbach's) plexus and so to the circular and longitudinal muscle layers, producing co-ordinated muscular activity. These neural elements are continuous throughout the alimentary tract and are probably responsible for the controlled passage of food through the gut.

This intrinsic mechanism acts independently of the central nervous system, although it may be affected by it, particularly under conditions of stress.

Bulbring and Lin (1958) have shown that peristalsis is triggered off when the intraluminal pressure rises above a threshold value. The tonus of the intestinal muscle is clearly an important factor. The difference between the sensitivity of this mechanism in a dilated, atonic gut, compared with the normal condition with average muscle tone, is probably the major fundamental cause of delayed transport of contents and, thus, of constipation. The treatment of this condition should then aim ideally at increasing the tone of the musculature, particularly of the colon, sigmoid and rectum, to its normal value.

The Action of Senna

Even a small fall in muscle tone could have a marked effect on the motility of the section of gut concerned. This is apparent when one considers that in life the total length of the gut is 8 — 10 feet, whereas in death this is reported as 30 feet — a difference due to muscle tone.

The defaecation mechanism is initiated by a pressure stimulus from the recto-sigmoid, and will also be dependent on the tonus and sensitivity of this organ.

In animal experiments, many workers (Lenz, 1924; Straub and Triendl, 1937; Okada, 1940; Leboeuf, 1949; Valette, 1949; and others) have found that the administration of senna not only produces increased peristalsis, but also an increase in muscle tone, which lasts for many hours, even after defaecation. The loss of tone and sensitivity to intraluminal pressure is, thus, apparently corrected by senna.

Gordonoff (1927) demonstrated a consistent increase in tonus with senna, a paralysing effect with rhubarb, and variable results with cascara. It is possible that this action of increase in tonus applies only to senna.

The action of senna then, is in effect, to sensitise the neuro-muscular mechanism to the normal pressure stimulus. This sensitisation of the intrinsic mechanism applies to both the large intestine and the defaecation reflex. The selective action of senna on the large intestine is important and was first demonstrated by Magnus (1908); it has no action on the small intestine.

It is interesting to note a distinction reported by many workers between non-propulsive activity of the gut (mainly segmentation) and propulsive activity (peristalsis). It has been reported that the first effect of senna is to abolish non-propulsive motility, increase the tone of the musculature, leading finally to the triggering off of a peristaltic wave.

Clinical Reports

The action of senna, demonstrated in animal experiments, has been confirmed by a large number of clinical reports. Extracts of some of these are given below:

British Encyclopaedia of Medical Practice — Cumulative Supplement (1962)

"Trials of this standardized preparation have been prosecuted in many hospitals throughout Great Britain upon subjects aged 3—86 years, with results that show it to be a valuable ally in the cure of chronic constipation . . . . "

"Constipation."

White, M. and Dennison, W. M. (1958)

" For some years we have used a standardized preparation of senna (Senokot) in the treatment of children with stubborn constipation. The usual dose is one teaspoonful nightly and this is gradually reduced and eventually discontinued. There has been no evidence of habit formation."

" The Treatment of Bowel Dysfunction in Infants and Young Children."
Campbell-Mackie, Mary (1959)

" Carefully graded dosage of standardized senna ('senokot') was found to be of considerable value in the establishment of normal habits in 58 of these 60 cases. Its action is educative, it is easy to give and liked, and it is cheap."

" A Clinical Study for the Correction of Constipation."
Peyton, T. R. (1957)

" . . . . the action of the senna glycosides as a stimulant of Auerbach's plexus within the lower colon . . . . re-establishes normal neuro-muscular sensitivity and reflex function with eventual development of regular bowel habits."

" . . . . Judicious and intelligent administration of this drug should produce satisfactory results in the correction of constipation in almost all cases."

" Physiologic Rehabilitation of the Constipated Colon in Women."
Herland, A. L. and Lowenstein, A. (1957)

" This standardized senna derivative, as predicted on experimental grounds, acts in a way almost indistinguishable from the normal physiologic mechanism, and . . . . rehabilitates and re-educates the constipated bowel toward resumption of normal reflex activity."

" Bowel Rehabilitation in the Chronically Constipated Patient."
Lowy, A. (1960)

" The results indicate that this senna preparation is an effective bowel corrective capable of establishing excellent control of constipation in the majority of patients, irrespective of the severity or duration of the disorder. In 40 per cent of the patients full establishment of normal bowel function was obtained without a maintenance dosage."

" The Use of a New Standardized Senna Derivative in the Management of Puerperal Constipation."
Suarez, J. et al. (1960)

" In our study, the large majority of untreated patients had had no bowel movement as late as the fourth day, while practically all treated patients had resumed normal bowel activity by that time."

" A method of management of puerperal constipation that permits us to reduce the frequency of post partum enemas from 83 to 1 per cent of all patients, cannot be termed less than a complete success."

"Bowel Motility — A Problem in Institutionalized Geriatric Care."
Smith, C. W. and Evans, P. R. (1961)

"Constipation in aged patients can be relieved by the administration of senna preparations, which stimulate peristaltic action physiologically and reproduce spontaneous bowel movements. Since it also restores normal bowel function, senna permits eventual discontinuance of therapy. Side effects of treatment are minor and transitory."

"The Treatment of Constipation in Mental Hospitals."
Haward, L. R. C. and Hughes-Roberts, H. E. (1962)

"The remarkable potentiality of Senokot for long-term re-educative programmes is reflected in the reduction from 44% of 210 patients receiving various laxatives regularly at the start of the trial, to 8% after three months' treatment."

"The Treatment of Constipation."
Lancet Annotation (1962)

"These conditioning techniques in the re-education of the bowels are important contributions to the health and well-being of the inmates of our mental and geriatric institutions."

Clearly the object of treatment of constipation must always be the restoration of normal, regular bowel function, and standardized senna, used in controlled dosage, has proved to be a valuable ally in achieving this aim. Restoration of normal bowel habits often require a little time and must include correction of faulty diet, where possible. The results can be very rewarding.

The control of dosage has been made possible by the standardization of this natural drug, which has been raised to the status of a modern therapeutic agent.

References

Brit. Ency. Med. Prac. Cum. Suppl., (1962) p.197.
Bulbring, E. and Lin, R. C. Y. (1958) *J. Physiol.*, 140, 381.
Campbell-Mackie, Mary (1959) *Practitioner*, 183, 732.
Gordonoff, T. (1927) *Arch. exp. Path. Pharmak.*, 126, 48.
Haward, L. R. C. and Hughes-Roberts, H. E. (1962) *Gut*, 3, 85.
Herland, A. L. and Lowenstein, A. (1957) *Quart. Rev. Surg. Obstet, Gynec.*, 14, 196.
Leboeuf, H. (1949) *Thése Doct. Pharm.*, Paris.
Lancet Annotation (1962) i, 1010.
Lenz, E. (1924) *Arch. int. Pharmacodyn.*, 28, 75.
Lowy, A. (1960) *Internat. Rec. Med.*, 173, 303.
Magnus, R. (1908) *Pflüg. Arch.*, 122, 231.
Okada, T. (1940) *Tohoku J. exp. Med.*, 38, 33.
Peyton, T. R. (1957) *J. nat. Med. Ass.*, 49, 388.
Smith, C. W. and Evans, P. R. (1961) *Geriatrics*, 16.189.
Straub, W. and Triendl, E. (1937) *Arch. exp. Path. Pharmak.*, 185, 1.
Suarez, J. *et al.*, (1960) *Internat. Rec. Med.*, 173, 639.
Valette, G. (1949) *C. R. Soc. Biol.*, (Paris) 143, 74.
White, M. and Dennison, W. M. (1958) *"Surgery in Infancy and Childhood"*, London; p.196.

ELIXIR

Journal of the Hong Kong University Medical Society

PRINCIPAL CONTENTS

	Page
Foreward	5
Fact, Fancy, and Opinion	7
Are We Over-medicated?	9
Elixir Cover Design Competition	14
A Junior Clerk (♂) in the eyes of	16
The Sea	18
Free Energy and Biochemical Systems	20
Physician Training — American Style	25
Medicine and Literature	32
Knitwit	38
The Discovery, Development, and Significance of Nalorphine	40
Quo Vadimus?	48
The Gantlet	50
A Day in the Anatomy Study Room	52
There be none of Beauty's Daughter	54
News from the Gazette	56

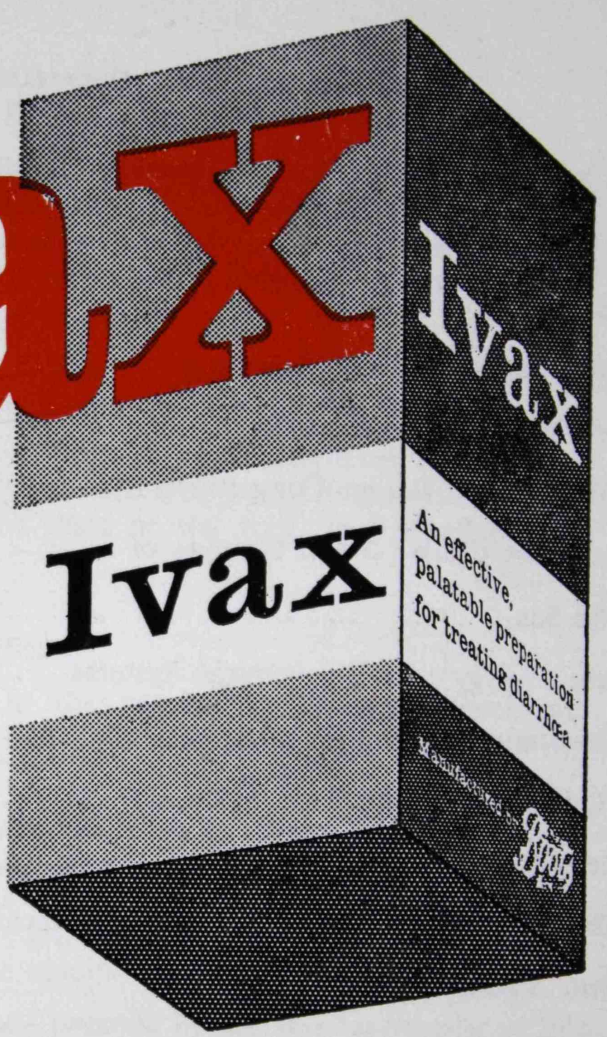
The opinions or assertions contained herein are the private ones of the writers and are not to be construed as reflecting the views of the Medical Society, Faculty of Medicine or the University at large.

Number 1 1963

Editorial and Business Address:
The Department of Physiology, Hong Kong University.

Printers:
Ye Olde Printerie, Ltd., Hong Kong.

Ivax



for the treatment of diarrhœa

contains three active ingredients:

3

NEOMYCIN:

SULPHAGUANIDINE:

KAOLIN:

Ivax, therefore, possesses the following important properties:

PROVIDES PROMPT RELIEF: consolidates the stools, suppresses the infecting organisms and soothes irritated tissues.

PLEASANT TO TAKE: the creamy, fruity flavour is readily accepted by patients of all ages.

NON-TOXIC: no serious side-effects are likely in the short time that the preparation is administered.

Ivax is indicated for the treatment of 'summer diarrhœa', bacillary dysentery, food-poisoning (including salmonellosis), infantile diarrhœa and other specific and non-specific diarrhœas.

Boots

Literature and further information from

SWIRE & MACLAINE LTD., P.O. BOX 579, HONG KONG

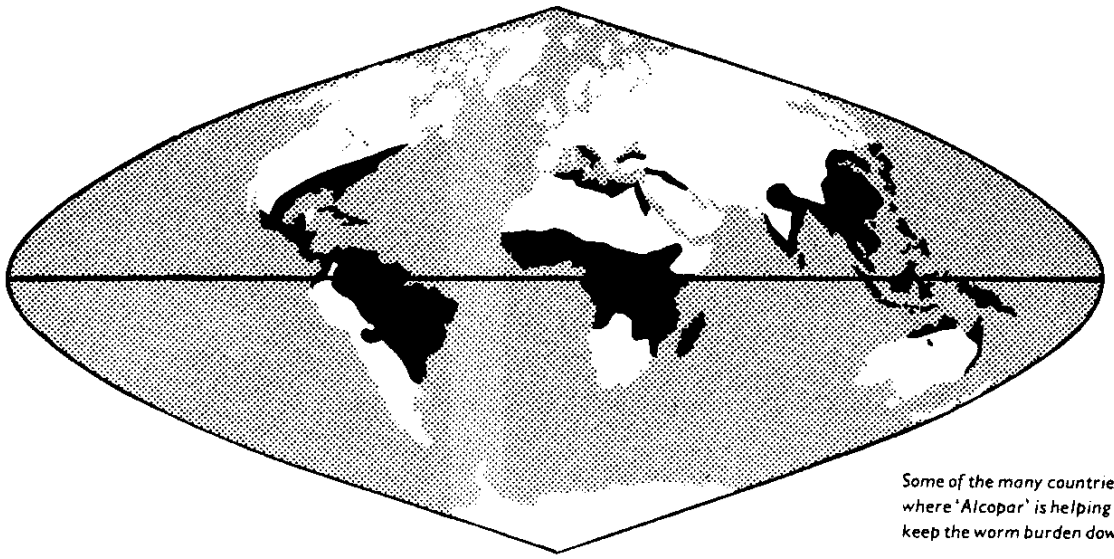
COMMITTEE OF THE MEDICAL SOCIETY
1962 - 1963

President	Dr. David Todd
Vice-President	Dr. Franklin W. P. Li
Hon. Treasurer	Dr. Marjorie Lee
Chairman	Mr. Tse Ngok Wai
Hon. Secretary	Mr. Cheung Ping Sheung
Ass. Hon. Treasurer	Mr. Lau Chor Ching
Social Convenor	Mr. Mok Kam Hung
Sports Captain	Mr. Victor Chan
Graduate Representative	Dr. G. B. Ong

ELIXIR EDITORIAL BOARD
1963

Hon. Adviser	Dr. C. A. Braga
Managing Editor	Mr. David Lee
Chief Editors	Mr. Michael Ma
	Miss Lina Yue

PLEASE WRITE TO ELIXIR



Some of the many countries where 'Alcopar' is helping to keep the worm burden down

Proved throughout the World against Hookworm

Cure rates of 90-100 per cent are commonly obtained with 'Alcopar' against hookworm.

A single dose of 'Alcopar' expels both hookworm and roundworm from the gut—safely and without purgation.

For the individual patient (young or old), for routine control in schools, clinics, for mass treatment of labour forces, and for treating entire communities in endemic areas . . .

'Alcopar' is the *accepted* answer

'Alcopar'

DISPERSIBLE GRANULES

Issued in single-dose sachets of 5 gm. containing bephenium hydroxynaphthoate equivalent to 2.5 gm. bephenium (base).
Packs of 25 and 100 sachets.

BURROUGHS WELLCOME & CO. (The Wellcome Foundation Ltd.) LONDON

Agents for Hong Kong: J. D. Hutchison & Co. Ltd., P. O. Box 43, Union House, Hong Kong.

FOREWORD

'The Final Aim of our editorial policy is to publish a magazine that is entirely by the students, for the students and about the students.' (Elixir Editorial, 1951).

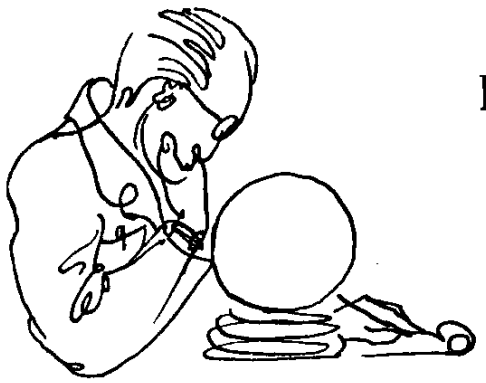
Since that was written, editorials in various numbers of this magazine have deprecated the lack of support from medical students. But this cannot be said for the present issue, which is predominantly the work of the undergraduates of the University, not merely students of the medical faculty.

This is as it should be and is a move in the right direction, with students giving evidence of their interest in a variety of subjects, not necessarily those having to do with the work at the University. This accords with the policy of the magazine as set forth in the foreword of the first issue in 1950, when Dr. S. M. Banfill, then Dean of the Faculty of Medicine, expressed the idea when he said: 'The training of a doctor is such a demanding business that it tends to discourage the student from outside interests.'

We should like to feel that undergraduates will recognize the value and importance of their own magazine and by their contributions make the Elixir a worthy effort, filled with articles on a variety of subjects, fully expressive of the manifold activities that interest the community which the University seeks to serve.

Let us hope, then, that the support given to this magazine will continue to merit the enthusiastic patronage of greater numbers of writers among the undergraduates, and be fully representative of the various faculties and departments.

C. A. BRAGA



FACT, FANCY AND OPINION

Fashions in QMH (The New Frontier)

Have you ever noticed the big contrast in attires (both staff and students) between the second and fifth floors of Queen Mary Hospital?

Down in the second floor, ladies adopt the demure, simple but elegant look. Nothing fancy or frivolous for them; for they well know that the following are taboo, or, to use a less vehement expression, looked upon with disfavour in that solemn and stately territory:

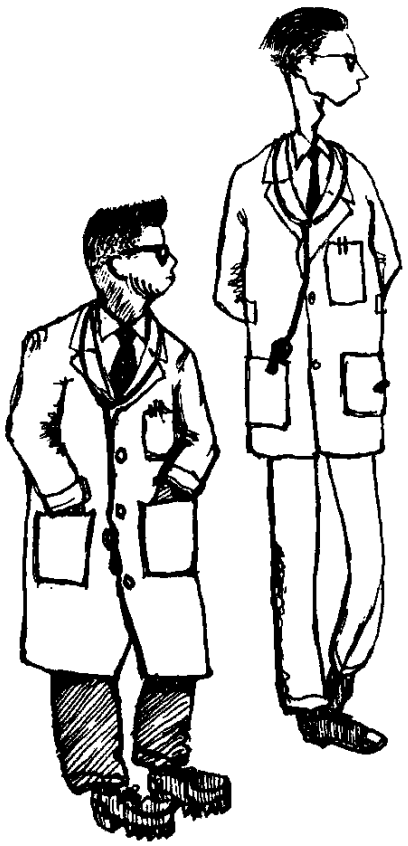
Bobby socks,
Exotic hair-dos,
Long painted nails, (designated talons.)

As for the gentlemen, ties and spotless white coats are way In, while flambuoyant sportswear — including golf shirts, are definitely Out. The latest fad is the flat-topped crew cut, very controversial but highly refreshing.

In the rarefied atmosphere of the fifth floor, however, fashions run riot. The ladies jump from Dior to Cassini to Ricci to Simpson . . ., while masculine apparels range from deliciously cool white tennis shorts, worn with comfortable sandals, to immaculate suits with matching vests.

All very confusing, especially for newcomers, don't you think so?

Well, to each his (or her) own!



On Personal Hygiene

It is indeed too often that medical students are reminded of their humble position in the hospital. Of course, being fully aware of one's ignorance, one could hardly walk in the ward, with that disguised look of a doctor — such transient dignity which, in the next minute, is unmasked when one is ordered to open the window and jump into the deep blue sea, before the eyes of the amazed but tickled audience. This is part of the clinical curriculum that we have to learn — with no grievance. We have not the slightest intention, or courage perhaps, to argue on such matter as "self-respect" of students, but it is actually a matter of humanity that we feel it our duty to record the following case for public discussion:

Name: P. R. Wou

Age: 22

Occupation: Medical school boy.

C.C.: Eating lunch with soapy hands — acute abdominal pain for 3 hours.

H.P.I.: 6 hours ago, patient was fooling around the ward and practising the art of rectal examination. At the strike of 12 a.m., the patient rushed to the nearest tap to have the glove washed before his retreat. After cleaning the glove, he was tempted to give his hands a share of the precious water. While soaping his hands, the tap was automatically closed. Before he could look up, he was ordered out of the ward, without being granted the courtesy of wiping off the foamy bubbles with the ward towel.

2 minutes later, the patient dinned in the canteen.

3 hours later, he noticed severe gripping pain in the abdomen, associated with profuse vomiting. The patient was admitted through Casualty.

P.E.: General condition good.
Hands dirty and slimy.
Tongue furred.
Other systems N.A.D.

Discussion on progress

The condition is extremely well after a stomach lavage. This is a simple case of poisoning.

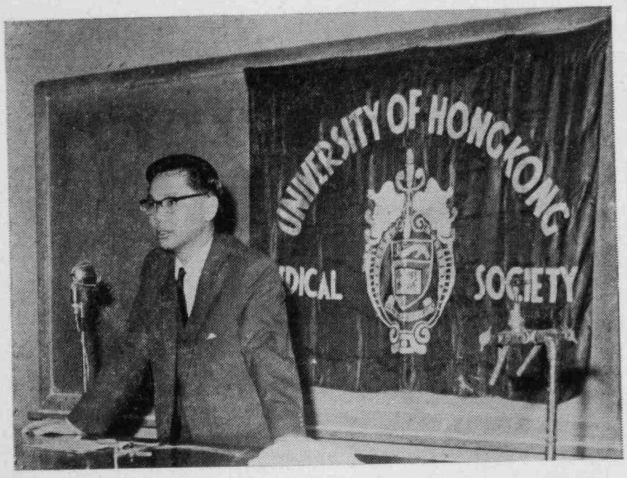
The patient should be reminded of his future personal hygiene. As he is a Medical student, he should have ample knowledge in taking care of himself. This incidence reflects a failure in the practical application of his education.

We welcome open discussion on this case, with special emphasis on the aetiological factor.

ARE WE OVER-MEDICATED?

Presidential Address,
By Dr. DAVID TODD, Lecturer, Dept. of Medicine,
Delivered on 2nd April, 1963.

You may wonder at my choice for today's subject, thinking perhaps it premature for undergraduates to worry about such things as medication or the giving of remedies especially when it concerns the excessive use of drugs.



However, even if you were not to become doctors, and I sincerely trust that all of you will, sooner or later, the use of drugs, be they tranquilisers, vitamins or antibiotics should concern us all. Many drugs nowadays can be bought over the counter without prescription, often these drugs are dangerous. I am sure a good number of you even at this early stage of your career have already been asked about this medicine or that. Upon qualification you will be flooded by pamphlets, booklets, leaflets and 'medical literature' from drug firms; you will be confronted by a formidable list of medicinal preparations each claimed by their particular sponsor to be the best on the market and what is worse you will be attending patients who are often the most ill-informed and biased persons insofar as their own disease is concerned. They will demand of you this drug or that if only because it helped cure their grandfather or they had read about it in some popular magazine. The temptation to try out new drugs, to yield to the patients' demands and give many drugs if only to preserve peace and quiet is very great. Regrettably in so doing it is seldom realised that a disservice rather than a service is being rendered.

It has been said that the pen is mightier than the sword but that the pill is the mightiest of all. The sword can kill, so can a pill; the pen can persuade, so can a pill but the pill can do better, it can cure when properly used. The giving of drugs has its roots in ancient magic and ritual at first entirely without any scientific blessing. Next came a period in which almost any suggestion or theory could introduce a drug into medicinal practice. Voltaire in his famous definition said that medical treatment was the art of pouring drugs of which one knew nothing into a patient of whom one knew even less. Although we have come a long way since that was said about 200 years ago, modern drug therapy is not without its fairy tales. There is no doubt that when properly used drugs may save life and in cases of diseases which are incurable, the patient's suffering can often be alleviated. I am not concerned today with proper medication nor am I concerned with over-dosage

which is the administration of an excessive and often dangerous amount of a drug. I would like to say something about over-medication which is the unnecessary and excessive use of drugs; when drugs are given too freely and for no pharmacological or therapeutic reason.

In answering the question are we over-medicated the individual who takes only two aspirins a year would certainly say no. Unfortunately such creatures are becoming more and more rare and for a certain section of any society, especially if it is a so-called advanced or highly civilised society, the answer I am afraid must be in the affirmative. Here in Hong Kong the huge local sale of vitamin B-12 when there is no pernicious anaemia and so little clinical evidence of vitamin B-12 deficiency particularly among the Chinese indicates that there must be a colossal over use of this preparation. The large consumption of vitamins of all shapes and sizes especially among the well to do when there is so little overt vitamin deficiency is another example of over use. If over-medication were confined to vitamins there would probably be no great problem apart from the consideration of cost but unfortunately potent and life-saving drugs intended for serious illnesses are used for illnesses that are self-limiting and would do better, except for symptomatic relief, without interference from a doctor especially one who prescribes a significant portion of the pharmacopoeia each time he attends a victim, for victim the patient is. In talking with patients one is often alarmed by the large number of drugs, herbs, patent medicines and what not that has been used. Needless to say the majority of these could not possibly have helped the patient in any way. I do not think that we have as yet reached the heights of over-medication as it is encountered in the United States of America but the possibility certainly exists. Professor H. Ratner of Chicago recently described that country as the most over-medicated, most over-operated and most over-inoculated country in the world. He went on to say that it was also one of the unhealthiest. The United States of America spends about twice the amount of money for drugs per person per annum when compared with Britain yet the general standard of health in those two countries is not all that different.

The harmful effects of over-medication are many indeed. Apart from the depletion of personal or public financial resources there is the danger from the direct or indirect side effects of the drugs themselves and it is apparent that the risk of this becomes greater as more drugs are taken. It has been estimated that at least 500 drugs in common usage can give rise to sensitivity reactions in one form or another. In fact almost all drugs are capable of giving rise to some untoward reaction and the damage they do frequently far outweighs the good they intend. Quite often toxic effects may not be apparent during preliminary clinical trials or may be delayed and it is not until the drug has been in use for some time that these serious consequences are realised. At least eight drugs from reputable firms were withdrawn in the last year or so after having been released for general consumption. The tragic story of Thalidomide needs no repetition . . . and who can tell what remote genetic effects new drugs may have? There are alas no therapeutic roses without their thorns. Many skin diseases are due to or have been aggravated by over-medication and the list of iatrogenic diseases which are defined as diseases 'generated' by the physician, including his treatment, grows longer day by day. Sometimes the reactions are fatal — take for instance the patient who takes chloramphenicol for a minor upper respiratory infection and dies from a fulminating aplastic anaemia. Drugs can lose their usefulness when used repeatedly in a patient thus an antibiotic may lose its therapeutic effect due to the emergence of resistant strains of bacteria if it had been given previously for a short period for a relatively minor ailment. Often the slap-happy use of drugs may mask important symptoms and signs of a serious disease. Before leaving the subject of dangers of over-medication it may be sobering to recall that a significant

Why DETTOL is a textbook antiseptic

EFFICIENCY. 'Dettol' is an efficient antiseptic which, moreover, retains a high degree of efficiency in the presence of organic matter.

TOLERATION. Dettol is well-tolerated on the skin and tissues in high concentrations. Moreover, its non-toxicity offers a high degree of safety to doctor, nurse and patient.

USE. The fact that Dettol is well-tolerated by the tissues permits dilutions to be recommended for clinical purposes which provide a margin of safety even when a reasonable amount of organic material is present.

ACTIVITY. Dettol is active against both Gram-positive and Gram-negative micro-organisms. Under standard conditions of test a dilution of 1 in 200 kills Staph. aureus in 10 minutes at 18 C. and similarly a dilution of 1 in 500 kills Strept. pyogenes in 10 minutes.

COMPATIBILITY. Dettol is not incompatible with soap, traces of which need not be removed before application.

PLEASANTNESS. Dettol is non-poisonous, safe, pleasant and economical in use. It has an agreeable smell.

Literature is available on request.

DETTOL REGD
antiseptic

Reckitt & Sons Ltd., Hull & London
(Pharmaceutical Dept., Hull)
Export Distributors: Reckitt & Colman, (Overseas) Ltd.

'DISPRIN'

Soluble, substantially neutral and palatable aspirin in stable tablet form

Great difficulty has hitherto been encountered in providing soluble aspirin in tablet form which will remain stable under ordinary conditions of storage. This difficulty has now been overcome.

'Disprin' has all the valuable qualities of calcium aspirin —analgesic, antipyretic and anti-rheumatic. Since it is soluble, it is more rapidly absorbed and consequently more speedy in its clinical effect. Moreover, it is unlikely to irritate the gastric mucosa.

'Disprin' tablets readily dissolve in water to form a substantially neutral palatable solution of calcium aspirin.

Soluble, stable, neutral, palatable calcium aspirin

Made by the manufacturers of 'DETTOL'

Reckitt & Sons Ltd., Hull & London
(Pharmaceutical Dept., Hull)

Export Distributors: Reckitt & Colman, (Overseas) Ltd.

number of drug addicts owe their beginnings to a doctor.

What then are the reasons for over-medication? This is not an easy question to answer. Since three parties are involved in the use of a drug, namely the patient, the doctor and lastly the pharmaceutical company that produces the drug it is perhaps not surprising that all three share the blame. Generally speaking nowadays we tend to make health an end in itself. Professor Ratner said that modern medicine is geared not really to health but to the hypochondriacal. This preoccupation with health is shown by the medical columns in newspapers, the health articles in magazines and the popularity of certain television programmes and the gales of books on medicine. Health is talked about all the time but for the most part all that has been accomplished is an increase in imaginary diseases. He goes on to say that Americans tend to look upon health as something that can be bought, rather than a state that should be sought through an accommodation to the norms of nature and that the public has become increasingly a paying animal as if health were solely a commodity of the market place. The civilised man has forgotten nature and in the case of drugs what has happened? Instead of letting nature take its course in many of the minor ailments he takes a pill for a heavy head; a pill for a light head; a pill 'to prevent a cold' at the slightest suggestion of an itch in the nose; a pill is taken for an upset stomach, usually the result of over-indulgence in food, wine and what not the night before. Of course when nature fails the doctor must take action and often drastic action is required but since so many illnesses are self-limiting the doctor must learn to keep his hands off when he should or to tread very lightly. It is true that prevention is better than cure, but is the taking of a handful of pills before any definite symptoms and signs have made their appearance proper prevention?

From the public's viewpoint it may be argued that we are living in an abnormal situation — that the tension of a modern existence in a highly competitive society demands special considerations that were unnecessary a few decades ago. It cannot be denied that there are diseases closely related to modern civilisation; diseases which are more common in the highly developed communities. However, the answer to a healthy existence in modern society, if such is possible, is surely not in swallowing a pill to get fat, another to get thin; a pill for going to sleep and another for waking up; a pill for constipation and another for loose stools. Drugs themselves have almost become the symbol of a cult of worshippers. Some psychologists suggest that pill-swallowing and injections have psycho-sexual origins. The less Freudian say it is just plain greed. In a recent lecture Sir Derrick Dunlop said that the desire to take medicine seems to be the chief thing which differentiates man from lower animals. Thus man is wiser than the animal when he takes Camoquin for malaria but much more foolish when he takes innumerable pills to make his hair grow. Without this enthusiasm for taking drugs there certainly would have been far fewer Thalidomide deformed babies.

Whatever the general public's viewpoint may be many doctors do little to remedy the situation. Most of us have been guilty at one time or another of giving patients medicine merely for the sake of giving him something. I do not deny the value of a placebo when it is suitably used but more often the medicine is given so that the patient will stop talking and be on her way. Perhaps too many of us are too busy to discuss matters with the patinet not to say carry out an adequate physical examination. Instead we offer him a variety of pills, mixtures and injections which have no particular merit and for which someone has to pay, most often the patient himself in more ways than one. Would it not be better to carry out such transactions in a shop or at the market? The tragedy of this is that many doctors are ill-informed and may firmly believe that what he is doing is in the patient's interest. The less scrupulous will of course do it for pure financial gain. The excuse of some is that patients

demand a variety of medicines and injections and feel cheated if they return home without them. Many claim that it is psychologically good for the patient. Yes, but the public likes all sorts of mumbo-jumbo that has a great psychological effect. The mere administration of drugs should never be a substitute for spending time to understand the patient and his problem. A good doctor himself is often the most potent therapeutic agent and if the patient feels that the doctor is honest and indeed endeavouring to help him drugs may be made to assume a secondary role which in many instances is their rightful place. Under these circumstances the tranquilisers, multivitamins, hormones, analgesics can be reserved for the proper occasion. Unfortunately the misguided or unscrupulous will cater to the demands of the patient thus rendering the honest doctor's task much more difficult. What is worse, many patients are foolish enough to believe that the more accommodating doctor is the better one. What we should do is to educate the public in rational therapeutics instead of pandering to its every whim and fancy.

Another cause for over-prescribing is undoubtedly the high powered and highly skilled advertising of the pharmaceutical industry. You will sooner or later have the experience of being bombarded by innumerable pamphlets, most attractively produced. Spectacular claims may be made for a new product or a relatively common medicine from a certain drug house may be advertised as the best absorbed, best tolerated, best utilised, most effective, least toxic of all similar products on the market. The more susceptible will try new product after new product, on patients of course. Undoubtedly there is a vast amount of honest advertising and fortunately there are many ethical pharmaceutical firms but it is often quite impossible to tell the chaff from the wheat. What is the reason for this? Excessive competition within the drug industry has resulted in an unnecessary expansion in the number of new products a year; not only are new drugs produced but old drugs appear in various new combinations and all these are over-enthusiastically promoted. To give you some idea of this a survey in the United States 5 years ago showed that there were 140,000 medicaments in current use at that time and of these 90% did not exist 25 years ago. Again in the United States of America it is estimated that in 1939 250 million dollars were spent on ethical drugs while this figure rose to 2000 million, which is eight times, in 1959. Surely not all that many life saving or otherwise useful drugs were discovered in that period. It is perhaps challenging to know that in the past few years about one new pharmaceutical preparation has been produced per day! I say challenging because it will be quite an effort for us to resist using them all! Members of the public, doctors included, are continuously haunted by high powered advertising campaigns and promotion gimmicks in newspapers, magazines; on street posters, cinema and television screens; and over the radio, transistor or otherwise. Unfortunately this is one instance when familiarity does not breed contempt. What can one do but succumb? Do not for a moment consider this is a wholesale condemnation of the pharmaceutical business. After all they have been largely responsible for the therapeutic advances of modern time and have contributed much to both research and teaching. Nor is competition to be condemned for it certainly provides the stimulus to research and new discoveries. Perhaps it is this lack of competition in the state-run drug industry of Russia that is responsible for the fact that no new drug of importance has been produced in that country since the October revolution! One cannot condemn advertising as such but the commercial motivation must be fully recognised and doctors not engaged in therapeutic trials should be thoroughly conversant with new products through reference to reputable medical journals and textbooks before prescribing them.

I should like to end by quoting from the writings of one of our most illustrious and wise predecessors, Dr. Robert Hutchinson. This may be familiar to some of you as it is read each year on the occasion of the first lecture in therapeu-

tics but it will do you no harm to hear it again. In a letter to a medical periodical he wrote "Sir, . . .

"A Victorian physician, whose name I have forgotten, used to say that "it took a strong constitution to stand a health resort, a convalescent home, a sanatorium, or an autumn holiday." Were he alive now I think he would add to this list "modern therapy."

Our old friend "treatment" seems to be harmless enough; indeed, I notice that the world is hardly ever used by those clever people who send you articles on the scientific aspects of medicine — articles most of which, I confess, mean almost nothing to me, and, I strongly suspect, to the majority of your readers also. No, it is "therapy" which is the danger, and especially modern therapy, to be spoken of in reverential tones and written only in capital letters. I propose to refer to it as M.T. in accordance with the prevailing fashion of obscuring things by calling them by initial letters. M.T. lurks in every doctor's bag usually in the form of tablets or ampoules, but occasionally as a more innocent-seeming lozenge or ointment, and very rarely as a mixture. It accompanies him on his rounds and is ready to jump out at the slightest provocation and grapple with the disease — or should I say the "pathology"? — and it is when there is a tug of war between M.T. and the "pathology", with the patient as the rope, that a really strong constitution is required. M.M. (modern medicine) aids and abets M.T., for, being unable to diagnose the simplest case of "pathology" without numerous investigations, punctures, x-ray reports, and specialist opinions, the patient is usually pretty well exhausted before M.T. comes on the scene at all.

I am glad to see from your correspondence columns that the abuse of modern remedies (and their cost) is beginning to be recognized; but I think there should be a new petition in the litany to be read in hospital chapels or wherever doctors and nurses do, or ought to, congregate. It might be as follows: "From inability to let well alone; from too much zeal for the new and contempt for what is old; from putting knowledge before wisdom, science before art, and cleverness before common sense, from treating patients as cases, and from making the cure of the disease more grievous than the endurance of the same, Good Lord, deliver us." I could suggest several more petitions to meet our present needs, but the above may do to go on with.

I am,

Yours sincerely,

ROBERT HUTCHISON."

Elixir Cover Design Competition

The ELIXIR Editorial Board wish to express their

THANKS to the following staffs of the Faculty of Medicine for their kind consent to act as judges

Dr. C. A. Braga

Dr. Franklin Li

Dr. Donald Yu

THANKS to Cyanamid (Far East) Limited for its generous donation of H.K.$100.00 as the first prize of this competition.

THANKS to ALL medical students for their warm support. The number of entries had revealed a most enthusiastic response.

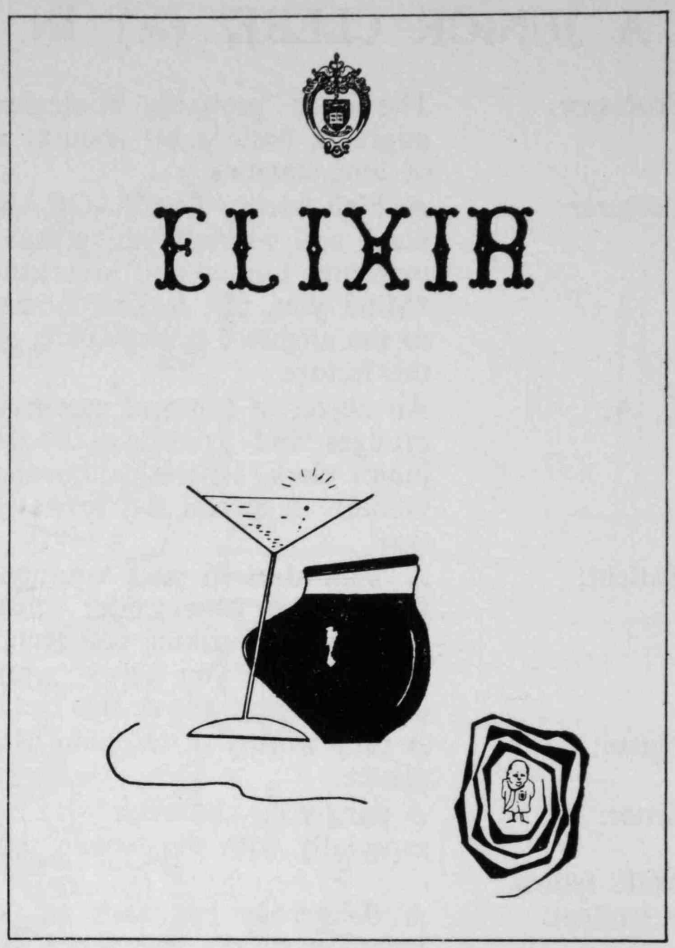
CONGRATULATIONS to Mr. Lee Wing Kwong (First Year) whose outstanding design — the cover of the present issue — won the top honour of the contest.

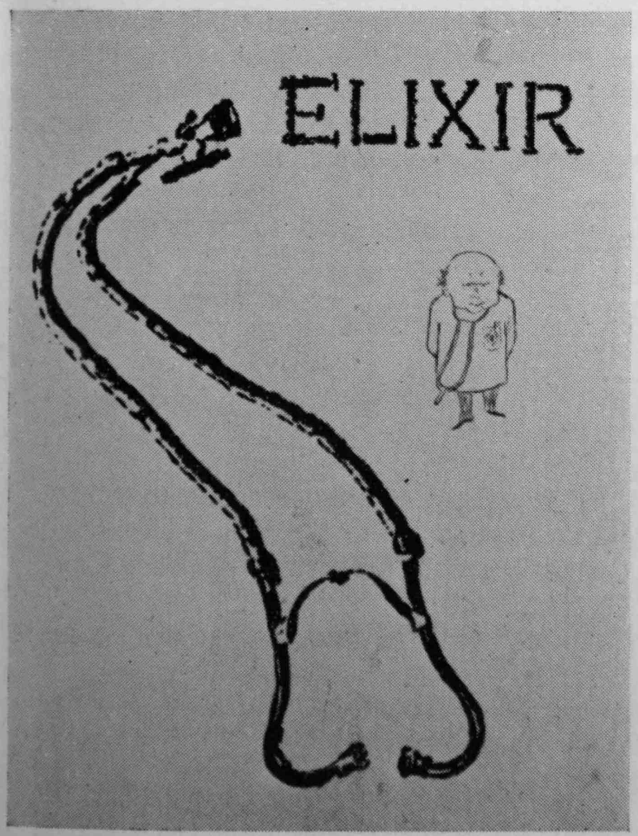
The following three entries have been highly recommended by the judges.

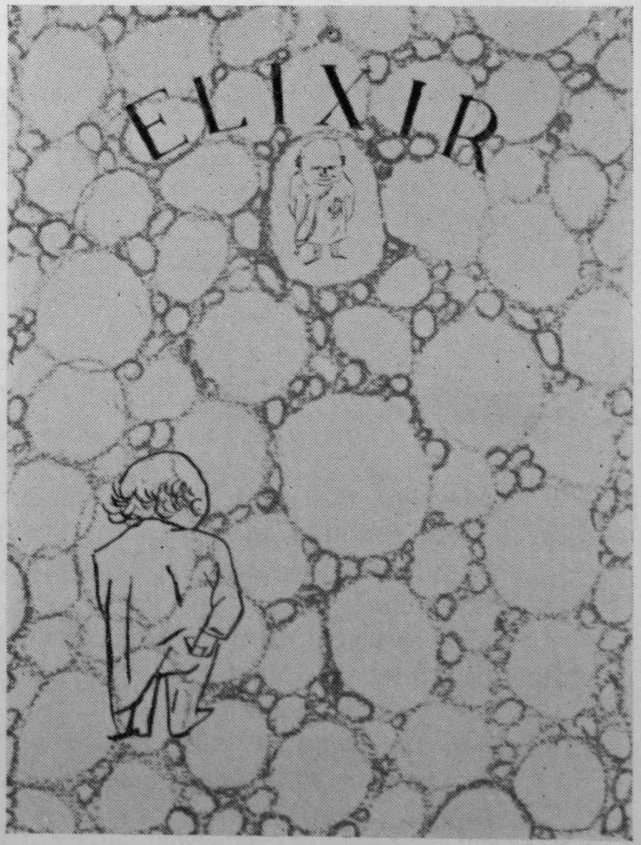
Top right: Albert Cheung
(Third Year)

Bottom right: Fung Kwok Hay
(Third Year)

Bottom left: Paul Leung
(Second Year)







A JUNIOR CLERK (♂) IN THE EYES OF . . . .

Professor:	The most probable etiological factor of his ulcer syndrome and migraine besides his spouse; also the most likely cause of death, if of long-standing.
Lecturer:	A high-fidelity DICTAGRAM* that is capable of reproducing in black and white anything that comes out of your mouth, even "Good morning, Ladies and Gentlemen." *Mind you, not a dictaphone, because it cannot reproduce verbally, to the slightest resemblance, anything put in, even immediatelly after the lecture.
C. A.:	An object of fun and mockery through whom you can let off all the grudges and grievances accumulated since the day you became a junior clerk, especially those sustained during the professorial rounds. Quote: It is real fun to watch junior clerks doing physical examination.
Patient:	A man dressed and equipped macroscopically like a doctor who fiddles with your tender spots until you yell like hell for pain and who keeps on asking you such silly questions as "What is your name?" or "Why are you here?" while he can get all the answers from the chart hanging above the bed.
Nurse:	A prey worthy of trapping with a casual inviting smile or encouraging glance.
Sister:	A dangerous character who may be able to make a mess of the ward especially with the female nursing staff.
Male fellow student:	A dangerous opponent as far as competition for gold medals or members of the fair sex is concerned.
Female fellow student:	Same as that of the nurse. Because, after all, they are of the opposite sex and that unlike sexes attract each other is an axiomatic physical law.
Senior students:	A hungry new generation so much so that the specialty clerks are not given the chance to present any case at the O.P.D. because they are far outnumbered and outpowered by the junior clerks in grabbing patients.
Himself:	In spite of all these, the J.C. is a status he is glad to be in because he has passed the 1st M.B. examination.

— Anthony —

Amongst the entries for a contest held by a famous ophthalmoscope manufacturer for an effective advertisement is found the following:

As a physician you can do away with the stethoscope, for you have the E.C.G., how convenient?

You can also do away with the tendon hammer, for you have the edge of your palm, also how convenient?

But you cannot do without an ophthalmoscope, for how can you look into the window of the mind of your patient without such an instrument?

So, have a real good ophthalmoscope;

Buy a HEMBLIN. — Anthony —

Thursday Clinic

THE SEA

Night winds blew loud; the trees did shake,
And thresh, and ply, and rake;
Leaden clouds drove wild and free,
While tides rose high at sea,

When yonder plied a lonely boat,
Or tossed — to sink or float,
Homeward ploughing her weary way
Through Neptune's wavy sway.

Faintly her captain seemed to cry:
"Take heart! for home is nigh.
Soon we'll see our ancient home,
And ever cease to roam."

"Home indeed! with her magic call!"
Return the seamen all;
"A call to peace and easeful rest
From our daily toilsome test."

'Twas home they dearly longed to be,
And yet were not to see;
For ere their eager words were said,
They were drowned — cold, still, and dead.

The ship was wrecked off their homeland shore,
Where they lay, for evermore . . .
With dewy eyes, through the dewy pane
I gazed, amidst wind and rain.

A gentle breeze was the breath of dawn,
And bright the face of morn,
When nature woke in a smiling state
And walked a lively gait;

But cheerful though the world might be,
'Twas not at all to me,
    Nor those whose valiant folks were lost,
    And gone — like midnight's frost:

Father, brother, or man so bold,
Or gallant friend of old!
    Forlorn the hope of dreary years,
    And countless the mournful tears!

Along the farthest cape I roamed,
While below, the waters foamed,
    Foamed and writhed in eddying lakes,
    With ever-rising flakes

Of red and blue in a colour'd bow
Against the sunbeams low,
    To fade away like glories past —
    To fade away so fast.

Unknown were those who had before
Tramped upon the barren shore,
    Their hearts with biting fervour burned,
    Their hope to hatred turned,

Their steady gaze by tear-drops blurred,
And rancour by sadness spurred,
    Their tears indeed a sea so real,
    Their woe a live appeal!

The sea was yet what he had been,
Now bestirred, and now serene;
    His roaring realm, his rolling range,
Still the same, and still to change.

S. L.

FREE ENERGY AND BIOCHEMICAL SYSTEMS

By DORIS EDNA GRAY

It is common knowledge that every living system requires a continuous supply of energy in the form of foodstuffs in order to continue living. What is not so readily appreciated is that this energy undergoes transformations or transductions within the cell in order that it be converted to a utilizable form. Transductions at the molecular level are found in a variety of biological sites. In the eye radiant energy is converted to chemical energy (retinene is photochemically transformed to a trans-isomer); in the kidney at the cell membrane chemical energy is converted to osmotic energy; in the ear sonic energy is converted to electrical energy; and in muscle chemical energy is converted to mechanical energy (actomysin is modified in size and shape, or positional displacement when it comes in contact with adenosine triphosphate). In this article transduction in only one biological site will be considered —that is, in the mitochondrion.

Every aerobic cell, whether plant or animal, contains small bodies of characteristic form and organization, called mitochondria. These microscopic structures are located in the cytoplasmic reticulum of the cell. In them are found most of the energy—releasing oxidative processes of the cell involving those proteins which behave as biological catalysts of the oxidative reactions, and which are termed enzymes. The general function of mitochondria is to couple the aerobic oxidation of metabolites to the synthesis of high energy phosphate bonds. This process is termed 'Oxidative Phosphorylation', and although the mechanisms which bring it about are still imperfectly understood, great progress has been made recently in isolation of the structural components responsible for the basic functions of oxidation, phosphorylation and electron transport. The energy of oxidation which is liberated in the process of chemical reaction is trapped as chemical bond energy in the terminal phosphate bond of ATP, and there it remains until the specific physiological stimulus triggers off the hydrolytic cleavage of the high energy phosphoryl group with the release of the trapped energy, which can then be utilized for a variety of purposes by the organism. Chemical energy is, in this way transformed or transduced to a form convenient for physiological use.

By convention all forms of energy used by living organisms are expressed in terms of heat units, or calories. When, for example, a molecule of glucose undergoes complete combustion in a calorimeter, it yields about 673,000 calories. Since the heat change accompanying a reaction is represented by $\triangle H$, in this example where heat is released

$$\triangle H = - 673{,}000 \text{ calories.}$$

Energy released during chemical reaction or material transformation which is capable of doing work is termed 'Free Energy' ($\triangle F$) of the reaction. The fact that $\triangle F$ may be either greater or lesser than $\triangle H$ is accounted for by virtue of the entropy change ($\triangle S$) of the reaction, which is expressed in calories per degree. A discussion of the concept of entropy is beyond the scope of this article, but it may be thought of as a measure of the disorder of any system, and in our particular case, it can be considered in terms of heat flowing into or out of a system from its environment while the reaction goes on. These relations are given by the equation:

$$\triangle F = H - T \triangle S.$$

The values of $\triangle H$ and $\triangle F$ are dependent on whether the reactants are solids, liquids or gases, and on their concentration, temperature and pressure. The $\triangle F$ value gives us considerable information, for it indicates whether a given reaction can take place, and the extent of its progress. Those reactions releasing energy are termed 'exergonic' and those absorbing energy are termed 'endergonic'. The larger the amount of free energy released, that is, the larger $-\triangle F$, the greater will be the driving force of the reaction and the more complete the reaction will be.

The equilibrium constant K also gives us a measure of the reaction's progress. That is, according to the Law of Mass Action, for the reaction type

$$A + B \rightleftharpoons C + D$$

$$K = \frac{(A)\,(B)}{(C)\,(D)} \text{(molar concentrations)}$$

If $K = 1$ the point of equilibrium is reached when half of the starting materials (A + B) have been converted into products (C + D). Similarly if $K = 10$, the reaction is about 90% complete. The obviously close relationship between the equilibrium constant and the free energy of the reaction is given by the equation

$$-\triangle F = RT \ln K$$

in which R is the gas constant of a reaction (1.987 cal./deg./mole), T is absolute temperature and lnK is the natural logarithm of K. It is obvious that if the free energy change of a reaction is known the equilibrium point of a reaction may be calculated, and vice versa.

These numerical expressions of thermodynamic concepts have been introduced here as a preliminary step in the consideration of another property of chemical systems whose fundamental significance in biological systems cannot be overemphasized — that is, 'redox potentials'.

Oxidation is often thought of as the addition of oxygen or the removal of hydrogen from a system, but more frequently than not the processes of oxidation take place without the direct involvement of either oxygen or hydrogen. The most accurate and precise definition of oxidation is that it is a loss of electrons. Compounds have a facility or tendency to either give up their electrons and become oxidized or to gain electrons and become reduced, depending on the particular system involved and the conditions present. This positive or negative tendency of compounds to surrender electrons is expressed in terms of volts as an electrical potential, and is called REDOX POTENTIAL. Measurement of this tendency can be made by employing an electrode immersed in a solution of an oxidation-reduction system, in combination with a second reference electrode whose potential is known.

It can be demonstrated that the electrical potential of a redox system is given by:

$$E = E^\circ + \frac{RT}{nF} \ln \frac{(ox)}{(red)}$$

in which

- E° = standard or normal electrical potential which is a constant for a given system, and is that potential found when the oxidized and reduced forms of a system are in equal concentration.
- R = gas constant
- T = absolute temperature
- n = number of electrons involved in the reaction
- F = the faraday = 96,500 coulombs, or 23,060 calories/volt, which is needed to bring about the transformation of one equivalent of an element to an equivalent of ions.

$\ln \frac{(ox)}{(red)}$ = natural logarithm of the ratio of the activities of the oxidized and reduced forms of the redox system.

The factor 2.303 converts natural logarithms to the base 10, and the equation then becomes

$$E = E^\circ + \frac{2{\cdot}303\ RT}{nF} \log \frac{(ox)}{(red)}$$

If n=1, then, at 30°, $\frac{2{\cdot}303}{nF}\ RT = 0{\cdot}06$

If n=2 $\frac{2{\cdot}303\ RT}{nF} = 0.03$

and the equation becomes

$$E = E^\circ + 0{\cdot}03 \log \frac{(ox)}{(red)} \quad \text{for } n = 2$$

In much the same way that a pH scale can be constructed indicating the relative acidity or alkalinity of given compounds in a given concentration, so can a scale of oxidizing and reducing power be built up for the same system at given concentrations, pH and temperature.

If two systems at the same pH but with different potentials (E°), are mixed, the potential of the system with the higher E° drops as more of it becomes reduced, and the potential of the system with the lower E° rises as more of it becomes oxidized, until finally the two potentials become equal, when no further chemical reaction occurs.

An example will serve to illustrate the practical use to which these theories and formulae may be put. In an evacuated Thunberg tube we have one ml of a solution 10^{-3}M with respect to both succinate and maleate and containing the appropriate dehydrogenase system. In the side arm is one ml of a solution 10^{-3}M with respect to both methylene blue and leuco methylene blue. The maleate-succinate system has an $E^\circ = -0.094$ volts while the corresponding value for the MB-MBH_2 system is +0.011 volts. The two systems are mixed and changes in the respective potentials continue until equilibrium is reached. Let us assume that we wish to know what percent reduction of methylene blue (MB) occurs in our system. The overall chemical reaction may be written:

succinate + MB $\rightleftharpoons$ maleate + MBH_2

Substituting the values provided in the equation shown above:

$$E_{(\text{mal-succ.})} = E^\circ + 0.03 \log \frac{\text{mal}}{\text{succ}}$$

$$= -0.094 + 0.03 \log \frac{\text{mal}}{\text{succ}}$$

and

$$E_{(\text{MB-MBH}_2)} = +0.011 + 0.03 \log \frac{\text{MB}}{\text{MBH}_2}$$

Since at equlibrium the entire system is at a new potential,

$$E_{(\text{mal-succ.})} = E_{(\text{MB-MBH}_2)}$$

and

$$-0.094 + 0.03 \log \frac{mal}{succ} = + 0.011 + 0.03 \log \frac{MB}{MBH_2}$$

where

$$0.03 \log \frac{mal}{succ} = + 0.105 + 0.03 \log \frac{MB}{MBH_2}$$

and

$$\triangle E = + 0.105 = 0.03 \log \frac{(mal)\ (MBH_2)}{(succ)\ (MB)}$$

Since MB = succinate and MBH_2 = maleate at all stages of the reaction

$$0.03 \left[2 \log \frac{mal}{succ} \right] = + 0.105$$

$$0.06 \log \frac{mal}{succ} = + 0.105$$

$$\log \frac{mal}{succ} = 1.75$$

Thus $$\frac{mal}{succ} = \frac{MBH_2}{MB} = 56.23$$

Let x be the percent of MBH_2, then

$\frac{x}{100 - x} = 56.23$ and x = 98.2%. Thus, at equilibrium, the methylene blue would be 98.2% reduced.

During this process of changing potentials of the two systems, free energy is released. This free energy of the reaction is dependent on the difference between the two E° values, and is given by the following:

$$-\triangle F = nF\triangle E$$

in which,

$\triangle F$ = free energy change of the reaction

n = number of electrons involved

F = the faraday

$\triangle E$ = the difference between the two redox potentials $(E^\circ_1 - E^\circ_2)$

Thus, knowing the E° which applies to a given system, it is possible to calculate the free energy change at any degree of oxidation or reduction of the system.

To illustrate the principle let us consider an example in which the system DPN ⇌ DPNH is present in a living cell. The hydrogen of this system is capable of being transferred through carriers to cytochrome c. Let us assume that the cytochrome is maintained by the cell in a half-reduced state and that DPN and DPNH are present in equal concentrations. The DPN-DPNH system has a E° value of −0.280 volts. The corresponding value for the cytochrome system is +0.262 volts. Thus,

$$\triangle E = E^\circ_{(CYT.C)} - E^\circ_{(DPN\text{-}DPNH)}$$
$$= + 0.262 - (- 0.280)$$
$$= + 0.542 \text{ volts}$$

and

$-\triangle F = 2\ (23060)\ (0.542) = 25{,}000$ calories (approx.)

That is, when one mole of cytochrome c is reduced by one mole of DPNH, energy equivalent to 25,000 calories is released. If we carry the oxidation process one step further when reduced cytochrome c reacts with atmospheric oxygen, about the same amount of energy is again liberated.

$$\triangle E = E^{\circ}_{(OXY)} - E^{\circ}_{(CYT.C)}$$

$$= + 0.800 - (+ 0.262)$$

$$= + 0.538 \text{ volts}$$

and

$$-\triangle F = 2\ (23060)\ (0.538) = 24{,}800 \text{ calories (approx.)}$$

In either case this energy is not available to the cell unless coupling mechanisms are present, which make possible the storing of this energy as high energy phosphate.

The sequence of steps involved in this process of coupling oxidation to phosphorylation begins with the utilization of this free energy of oxidation in converting inorganic phosphate (Pi) to high energy organic phosphate ($\sim$P). This is followed by the transfer of the phosphoryl group ($\sim$P) to adenosine diphosphate (ADP) resulting in the formation of ATP. It has been established that the synthesis of one mole of ATP from ADP and Pi requires about 12,000 calories, and that during the oxidation of DPNH by oxygen three moles of Pi are esterified. In other words, three $\sim$ P bonds are synthesized. From these figures the efficiency of the synthetic system can be calculated, since the free energy change of the reactions involved is about 50,000 calories (25,000 + 24,800).

$$\text{Efficiency} = \frac{3 \times 12{,}000}{50{,}000} \times 100 = 70\% \text{ (approx.)}$$

This is an extraordinarily high value when compared with other types of machines. Steam engines have an efficiency of about 25%, diesel engines about 40%.

At this stage of development of the theme it would not be unrealistic to mention a concrete example of the biological energetics involved in the metabolism of a compound which is usually taken as the starting point of the tricarboxylic acid cycle, namely pyruvic acid.

During the biological oxidation of pyruvic acid by means of the TCA cycle, for every mole of the acid, ten atoms of hydrogen are released. By means of a series of carrier systems which are at various electrical potentials the hydrogen is brought closer to oxygen where it becomes oxidized by loss of electrons to a member of the cytochrome system. It is these differences in electrical potential which constitute the means of electron flow whereby the oxidation is accomplished, with the concomitant release of the energy. Simultaneously with the release of this energy the mechanisms for phosphorylation or the formation of high energy phosphate bonds come into play and energy is trapped as chemical energy in the molecule ATP.

In every aerobic living system the basic function is the same, whether the system is found in plants, micro or macroorganisms including the human animal, and it is a chastening thought that the lowly bacterial cell, in its efforts to continue living, utilizes the same mechanisms and materials to obtain energy as does the brain cell of an Einstein.

The Clinical Primer

and

Coloring Book

(Supplement to Elixir No. 1, 1963)

Editors' Note: This detachable booklet is specially dedicated to medical undergrads, with the fervent hope that it will provide its share of diversion from Bailey & Love, Davidson, Ian Aird . . . .

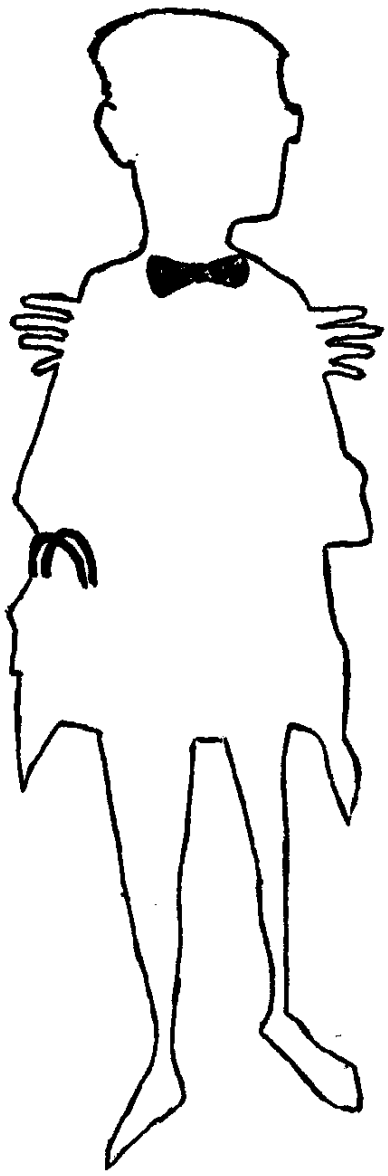
Elixir also offers a box of crayons as a prize for the best coloured picture.

See the Professor.
He is a Scot.
He loves Scotch'n'Soda.
Drink, Professor, drink.
He doesn't like birds,
Stork, crane, etc.
He's fond of talking von Recklinghausen.
And of Hypothyroidism too.
He issues them accordingly.
Issue, issue, issue.
Don't you wish to issue something someday?
Then you'll have to wait long, YOUNG MAN.

Colour him "Johnnie Walker, Red Label".

See the Surgeon.
He operates.
He operates in Theatres.
And in Niteclubs too.
This celebrity is very busy.
He's always on the go.
He receives awful lots of phone calls.
Ring-a-ding-ding.
He speaks in a low, low voice.
Hmm, hmm, hmm.
Don't you wish you could speak like that?
No.
Your vocal cords are too short.

Colour him "Teddy".



See the "Celebrity".
He is a Cardiologist.
He owns an ECG.
He listens to heart sounds.
LUB-DUB, LUB-DUB, LUB-DUB,
DUB-LUB, DUB-LUB, DUB-LUB,
He also imitates heart sounds.
Slow, slow, quick, quick, quick.
He dresses in a particular way.
Ha, ha, ha.
Don't you wish you could dress like that?
No.
You'll get walloped.

Colour him "Very Important Person".

This is a man.
He asks peculiar questions.
Why? Why? Why?
This man doesn't like "tubular breathing".
He has never heard of Benny Goodman before.
Never, never, never.
Have you heard of him before?
He speaks soft and musical English.
"Why don't you know?"
"When will you know?"
Don't you wish YOU could speak like that?
You can.
You're almost SEVEN now.

Save your crayon.
Don't colour him.

This is a face.
A face is a face is a face.
He also listens to heart sounds.
lub-dub, lub-dub, lub-dub,
dub-lub, dub-lub, dub-lub.
He talks about Jones' Criteria.
Talk, talk, talk.
He always complains of dysphagia.
He can't swallow the Criteria.
Maybe someday he CAN swallow.
It will be YOU.

Colour him "Stenosis".

See the Language Teacher,
He teaches French,
He knows peau d'orange,
But not many more, I'm afraid.
C'est magnifigue,
Quelle est votre opinion?
He knows a lot of names too.
Reginald is very English.
Patrick is very Irish.
What is Edmund?

Make your own drawing, and
Colour him "Café au lait".

PHYSICIAN TRAINING . . . AMERICAN STYLE

By COLLIN POY QUOCK

(Senior medical student, University of California; Lederle and United States Public Health Research Fellow in Pharmacology, Department of Physiology, University of Hong Kong.)

LIKE their colleagues in Hong Kong, American medical students are pyramids of endurance — monuments of hard work, happy times, and upset stomachs. In any given class, which usually numbers about one hundred such magnificant argonauts, one may readily diagnose migraines, peptic ulcers, paranoid tendencies, and a generous symptomatology of nausea, vomiting, and diarrhoea. The brave spirit who selects this noble profession must be, above all, a masochistic glutton for academic trials.

Following a blissful period of 6 years of grammar school, 3 of junior high, and 3 of high school, this youth of destiny embarks on the embryo stage of his training — the university pre-medical curriculum. Actually, he may choose any formal major course of study ranging from anthropology to zodiac interpretations. The only stipulation is that he must include certain subjects in his programme of study. These demands vary with the medical school to which he plans to apply. In general, he must take basic courses in Chemistry, Physics, Biology, and English, with further work in Organic Chemistry, Quantitative Analysis, and Vertebrate Embryology. If this eager young warrior so chooses, he may seek admission to medical school at the end of three years of preparation instead of completing the four years of study for a bachelor's degree in his own major field. In some institutions, such as the University of California, a bachelor's degree in the medical sciences is awarded to successful three-year applicants upon completion of their first year of formal medical school.

The first Herculean labour which this hardy lad must surmount is admission to a recognised medical school. If pre-medical training is the embryo stage, then this task must be likened to delivery; and it is every bit as traumatic as a struggling fetus trying to squeeze his way past a pair of ischial spines that meet in the midline. There are ninety such recognised institutions in the States, with accredation granted by the Association of American Medical Colleges. In some admission may be less difficult; in other more popular choices, the ratio of those applying to those accepted may run as high as 13 to 1. In all, successful application depends on good college grades, a good score on a nationally-given entrance examination, sound letters of recommendation, a personal interview, and a wicked smile from the perverted Fates.

Finally, after much fretting and sweating, which represents a marvellous step toward peptic ulceration, this fine fellow receives the magic word that he has been admitted; instantly, he is transformed from insignificance into that noble salt of the earth known as a medical student.

Boldly he strolls forth into the school on his first day — a knight in shining armor. His proud demeanor reflects confidence in his talents; his gait and bearing are eager with anticipation. But alas! By the end of his second year this fine fellow is practically carried back out on his shield! He is sore and bleeding from battle with gross Anatomy, Neuroanatomy, and Physiology. His eyes are watery and red from using a microscope in Pathology, Microbiology, Parasitology, and laboratory diagnosis. He has been wracked by strange brews and witch vapors in Biochemistry

and Pharmacology. He has been driven to exhaustion by Psychiatry, Preventive Medicine, Surgical diagnosis, basic Obstetrics and Gynecology, and basic Medical theory. He is weakened and humbled. Two trophies lift his battered spirit. In phyical diagnosis he has seen patients for the first time; they have called him "doctor"; and this epithet is now emblazoned across his shield. In his hand he clutches that great symbol of medical status which he has now learned to use — a stethoscope!

He has finished his pre-clinical training. He rests, rises, and returns to the fray — refreshed by the clinical challenges that lie ahead.

As a third year student, he rotates through clerkships in Medicine, Surgery, Obstetrics and Gynecology, Pediatrics, Infectious Diseases, and Psychiatry. On each of these services he is assigned patients. In conjunction with the resident and interne on the case, he must interview, examine, and write up each patient. It is the student's responsibility to perform routine blood and urine laboratory work on each case. He delivers women in labour, draws blood, starts IV's, performs lumbar punctures, repairs minor lacerations, and spends the same sleepless nights medical students the world over suffer observing patients. Cases are presented to faculty consultants and papers are written on various aspects of these diseases. The student is examined and re-examined on every patient with a heavy emphasis on diagnosis. Frantically he runs about between endless rounds, lectures, conferences, seminars, and private studies.

In the fourth year the stress shifts to management. Now he spends only 20% of his time in the wards and 80% in the outpatient clinics. Again he rotates through the same services. At the University of California, the senior programme includes 11 weeks of electives. This period varies at other schools. This time is alloted the budding physician, now hot in pursuit of his M.D. degree, to enable him to study specific subjects of his choice under professors of his choice. Groups are so small that they may consist of only a single student studying under one facutly member. Selections run from Anesthesiology to Virology.

In Hong Kong, a bulging population of $3\frac{1}{2}$ million is served by a relatively smaller number of large general hospitals. As a happy result, even the least enterprising medical student reaps the benefit of broad patient exposure. San Francisco, on the other hand, possesses approximately 20 such institutions serving a population of only 800,000. The advantage here becomes an opportunity to delve more deeply into each individual case, to explore each and every possible ramification in each and every single patient. This is done through repeated conferences and presentations, exhaustive research in the University's magnificant up-to-date collection of the world's medical literature, and even private consultations with international authorities in various sub-specialties who serve on the regular faculty.

Medical student life, of course, is not 100% work — only 99.9%! The other 0.1% of the time is drawn out as much as possible by our haggered and badgered young hero seeking respite. We pay less attention to athletics than Hong Kong students do. For one thing, the very popular sport of swimming here is less widespread in San Francisco because of the fierce undertow of the salty water. In general, swimming is less ingrained in our land-lubber population. Parties, dances, movies, and plays occupy most of our self-imposed leisure. Then, too, over 50% of most graduating medical classes are married, and time must be spent in practical pediatrics and keeping the little woman happy! Tea and soft-drinks are favourites here while coffee is the staff of life and beer its spice in the USA's medical schools. The happy medical student here is one who achieves distinctions in his classes; in the University of California, at least, happiness is the compromise of successful training and social life. MRCPs, FRCSs, and other higher degrees play an important role in the study plans of the student in Hong Kong. In the states, only the Ph.D. remains to be conquered for the masochist interested in academic pursuits. Otherwise the budding Hippocrates can look forward

to happily settling down to clinical pursuits. His colleagues in his own specialty, such as the Board of Internal Medicine, may decide, on his petition and successful examination, to award him with certificates of competence. He may even work for sub-specialty certification, such as hematology, endocrinology, cardio-pulmonary study, or gastro-enterology, the recognised sub-boards of internal medicine. But none of these in anyway constitute an academic degree; they are highly respected certificates of competence achieved after many years of post-graduate training in residency programs and result not from burning the midnight oils for study.

During this fourth year, this young warrior must make application for internship to a hospital with a recognised teaching programme. This period commences upon graduation and usually finds graduates moving from one corner of the nation to another to work in the hospital program of his choice. This is the time — a 12 month period, to be exact — of trial responsibility similar to the houseman status in Hong Kong. It differs in that programe organisation, selection of hospital, and program direction are not under government control. Selection is competitive and the period of application constitutes another huge step toward peptic ulceration. Three varieties of training programs are available — rotating, straight, or mixed. The rotating type of internship carries the graduate through the same services he studies in medical school; it is actually a fourth year medical school program glorified in terms of responsibility. The straight is becoming increasing popular in large medical centres and is limited to medicine or surgery or whatever service the graduate chooses for the entire year. By far, however, the rotating is most commonly available. The mixed is precisely that — a compromise of the other two forms. It comprises a major component (for instance, 6 months on MEDICINE) and a rotating component (which be 4 months on PATHOLOGY and 2 in EMERGENCY). This arrangement varies from one hospital to another.

Legal licence to practise medicine is granted by the state in which the physician seeks to set up his career. This licence depends on passing a State Medical Board examination and is usually taken upon graduation. Its results are *not* required for the internship period because this is not a time of legal responsibility.

Although licence may be obtained this early, most young physicians are now seeking further training in the field of their choice. This is known as the resident program and varies from two years in pediatrics to five for surgery. At a later date following completion of a recognised resident training program, the doctor may apply to take the examination of his specialty. Passing, of course, permits him to practise his particular interest as a specialist of competence acceptable to other men in his field.

Curious physicians and medical students in Hong Kong have questioned me repeatedly on several points which I would like to take this opportunity to answer.

Q How may I obtain a licence to practise in the United States?

A Specific requirements vary with each of the 50 states. In general, however, you must first obtain a score of 75 percent or higher on a lengthy written examination given by the Educational Council for Foreign Medical Graduates (the ECFMG). This is administered twice a year under the proctorship of the medical department of the U.S. Consulate in Hong Kong. Further information is available either through that department or by writing the:

Educational Council for Foreign Medical Graduates,
1710 Orrington Avenue,
Ivanston, Illinois, U.S.A.

Then, depending on which state you select, a one to two year internship is required. Certain well-trained individuals may be taken directly into residency under local

requirements. Acceptance into a hospital for either internship or residency is competitive with the American graduates through the National Intern Matching Program. A complete list of recognised intern and resident training programs and detailed information on accreditation in each state is contained in the Directory published annually by the

Council on Medical Education and Hospitals,
535 North Dearborn Street,
Chicago 10, Illinois, U.S.A.

Usually, an additional State board examination for licensure is required at the end of the internship period. This is the same test taken by graduating American medical students. Finally, of course, the necessary processing of visas and legal residence in the United States must be considered. This will vary with the individual. Detailed information on this topic should be sought from the U.S. consulate.

Q Does a licence in one state entitle you to practise in another?

A Most states are reciprocal, recognising one another's licensiates. California and New York, however, are two of the states which do insist on applicants successfully passing their own licence examinations.

Q What does the State Board Examination cover?

A The entire subject matter of four years of medical school. Passing is not needed for graduation or for acceptance to an internship—only for legal licence to practise under your own responsibility to manage patients.

Q What is the difference between the M.D. and M.B. degree?

A Academically one is a doctorate and the other a baccularеate. The M.D. is granted upon completion of studies after the university level. The M.B. is awarded at the end of university training. In actual medical practice, however, there is no real difference between the two degrees.

Q Are there any degrees after the M.D. comparable to the MRCP, FRCS, etc?

A No. The Royal College degrees are academic achievements attained after a course of study. The American specialty and subspecialty board certificates are endorsements of experience and competence. It is possible to obtain a Ph.D. degree after a prescribed course of study and a thesis in the U.S., but this is generally of interest only to those physicians involved in the basic, rather than the clinical, sciences. Americans do have certain societies which are strictly reserved for those who are truly outstanding in their specialties. Membership is highly selective and prestigous in these groups.

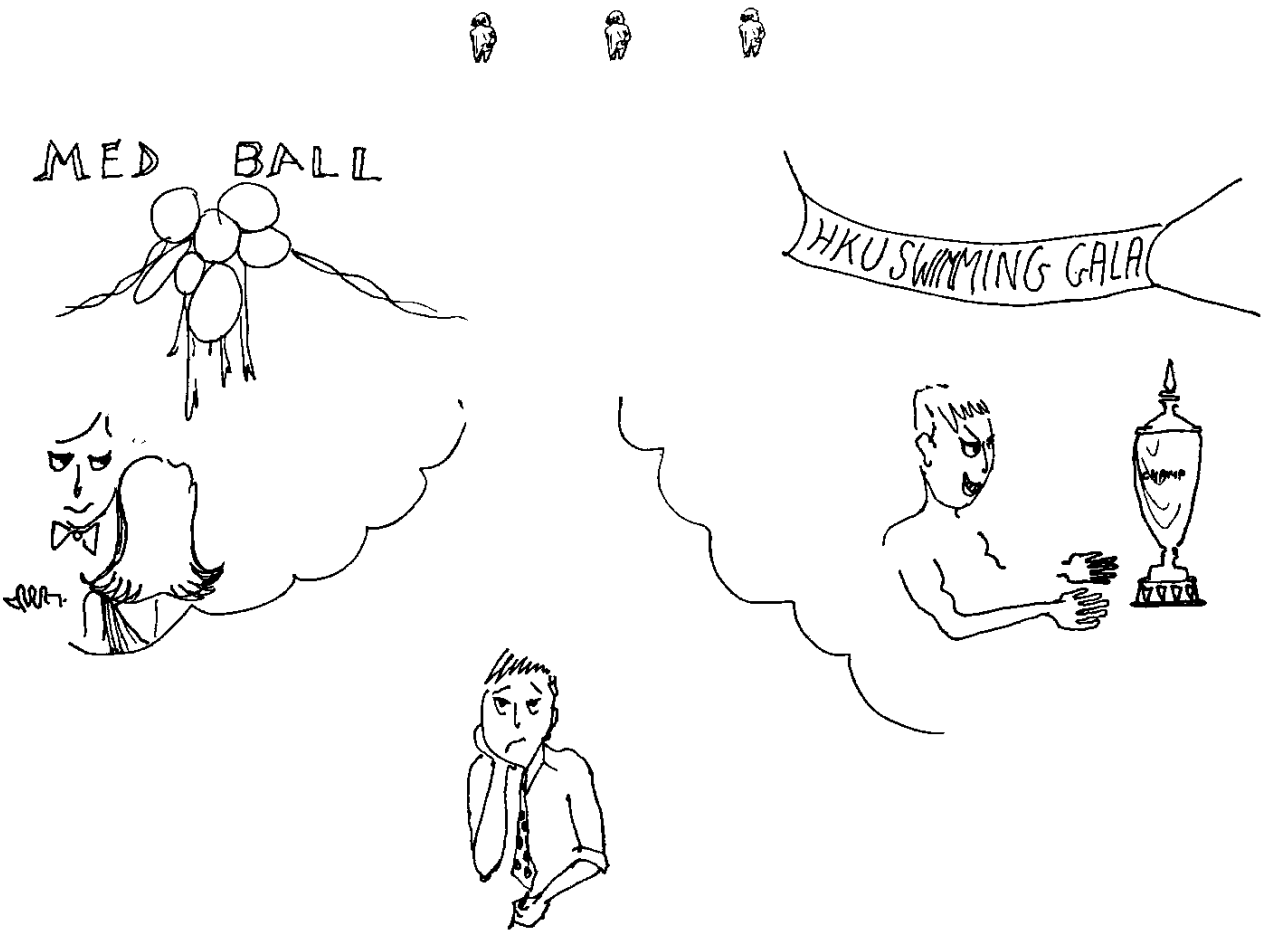
Q How much income do American physicians make?

A The training years are very lean. Interns average between $200–300 U.S. per month. Residents start at about $375 and increase their income by very small increments during each additional year of training. In the armed services (each American male is subject to 2 years military service, which is post-poned for medical personnel until internship is completed,) the best pay is obtained in the early years of career. This ranges from $500–750 U.S. per month and carries a captain's commission in the army or its equivalent thereof in other branches. Average American physician income, counting all those in practice and training, is only about $14,000 per year. One in practice averages about $20,000.

Q Is it true that American physicians make their diagnoses more on laboratory findings than anything else?

A Definitely not. True, we have many exotic laboratory procedures not available in many other parts of the world, and in difficult situations it would be foolish not to employ these means whenever practical. But cost to the patient and usefulness of the test are prime considerations. Just as our respected colleagues in Hong Kong, we would make a diagnosis of hypertensive signs and symptoms mainly by history in Pheochromocytoma, by examination in Cushing's Disease, and, of course, necessarily by laboratory aids in primary aldosteronism. Diagosis are still based 85% on history, 10% on physical examination, and only 5% on laboratory data.

Medicine is a genuinely tough field the world over. And we sweat just as much in the U.S. as medical students in Hong Kong, despite the weather! For all the fascination, prestige, satisfaction, and financial security that being a physician often means, the American physician-in-training pays dearly in sleepless nights, headaches, peptic ulcers, and various psychoses and neuroses. But, except for those tension-filled days of examination, it's jolly well worth it all!



MED BALL . . . . . .

"Water is precious — have a Whis
our President's sage advice.

Date: 6th June, 1963.

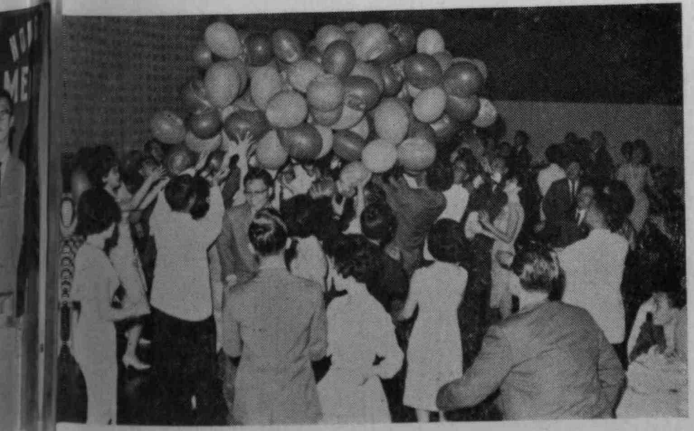
Place: Miramar Hotel.

Prizes for everybody . . . or nearly everybody.

. . . . . MAD BAWL?

Our Medical Band . . . . colour them cool !

What's our Chairman trying to sell?



Balloons Galore !

MEDICINE AND LITERATURE

We have often heard the remark that "the study of Medicine is a science, but the practice of Medicine is an art." Although it is not absolutely true, it is not too far from the truth. This remark has been a good guiding principle for many successful doctors.

To treat Medicine as purely scientific has been one of the greatest errors of present day medical education and practice. Good medical practice requires besides medical knowledge, good judgment and technical skill, also a capacity to understand people, experience of the world, appreciation of different outlooks, tact, personality, and above all, a right sense of values. All these fall into the realm of Arts.

The present civilisation of the world is facing a grave problem of the separation of Science and Arts which represent the "Two Cultures" which has been adequately discussed by C. P. Snow in his Rede Lecture. The scientists and non-scientists are becoming more and more incommunicable and their separation less bridgeable.

We are now unfortunately threatened by a danger arising from over-emphasis on scientific development. The values of Arts and Humanisn have been put aside at an insignificant corner to rot away. "The knowledge increases but the wisdom lingers" represents a true picture of this age which faces imminent destruction. So there is an urgent call to integrate the development of the "Two Cultures" in order that sanity can be brought back to our intoxicated age, and also the intellectual defect of the individual and nation antidoted.

The disciplines of Medicine, a meeting place for science and arts, serve this purpose. As a science, Medicine deals with the physical aspects of the diseases. As an art, it handles all the complexities of human minds and the many shades of human personality. Therefore striking a balance between these two disciplines will ensure your becoming a good doctor and an intellectual citizen of the world.

It will be a waste of time here to impress upon you how much Medicine has helped to relieve sufferings due to formidable diseases. As the topic Medicine and Literature implies, I am going to discuss in fuller details only how much Medicine contributes in the realm of Arts especially Literature.

It is quite striking, though not surprising, to note that many medical men, in the past and present, excel themselves, other than their own prefession, in the field of Literature. There are many doctors, as men of Letters, whose literary works have captivated readers for generations. To quote a few, we have our greatest medical poet, John Keats, Henry Vaughan, poet and writer Oliver Goldsmith, philosopher John Locke, prose writer Sir Thomas Browne, glorious novelists of the twentieth century Sir Arthur Conan Doyle, A. J. Cronin, and Somerset Maugham. All the great names above are trained to be medical doctors, but their contributions to the literary wealth are by no means small.

It will be very interesting if we can go a bit farther to find out why there is such a close association between Medicine and Literature, and also why men of medical profession are inspired to be interested in Literature.

Many good physicians who remained in active professional life have courted Literature as a gentle pastime to interpose a little ease and joy amid the "worries of practice". It is a very commendable hobby for a doctor. On the other hand there are many fine physicians who are virtually compelled to write because of the inner urge to express themselves and also the richness of materials which they can gather in their profession. Sufferings and miraculous recoveries, births and deaths, joys and sorrows, visit our human race every day; and doctors, fortunately and unfortunately, are fated to witness these happenings. The human nature in the raw and the tragedies of human life are often clearly displayed before them. These touch their hearts, and they write to tell the world what they have seen, felt, or thought. The inner nature of men never escapes the penetrating eyes of a good physician with a sensitive and humane heart. Maybe this is the reason why the picture of human life the physician-writer depicts is so touching and true.

The link between literature and medicine especially psychiatry is very clear. The writers study the life around them: the thoughts of people, their emotions, passions, conflicts, and actions. On the other hand, the doctors, especially the psychiatrists, also study the individual, but with a different purpose. They want to cure them or at least to improve their conditions. Therefore the case histories are very detailed and sometimes come very close to a chapter of a novel. The doctors are more privileged than writers as they can get a truer picture for patients seldom lie to doctors.

Medicine can not help but influence the current literature of the age. We can find descriptions of sick people and diseases in the endless number of literary works from remote antiquity to our present days. It is not the disease itself but the effects it has on the individual life that interest the writers and readers. Often serious illness may be the turning point in a man's life. In many a novel the disease may appear as part of the plot or play a dominating role as in the case of the hero of Somerset Maguham's great novel "Of Human Bondage" who has a clubbed-foot. This is not accidental but important as it explains the inferiority complex and the peculiar actions of this man. It takes a doctor like Somerset Maugham to have a penetrating insight of his clubbed-foot hero. Tuberculosis is another interesting disease which appears in many writings. It is, in Thomas Mann's "Magic Mountain", the theme associated throughout with some person, situation, and sentiment. This Nobel-prize winning novel pictures most graphically the moral and intellectual antics of the tuberculous patients confined to a high altitude sanatorium.

So much for the things in general. We shall now focus our attention on a few of the many physicians who are known for the richness and variety of their literary works.

First of all our great English poet—John Keats. "No one else in English poetry save Shakespeare," says Matthew Arnold, "has in expression quite the fascinating facility of Keats, his perfection of loveliness." It is no exaggeration. All lovers of poetry cherish Keats' memory for the splendour of the verses with which he has enriched our literature. A lover of beauty, once he says,

a thing of beauty is a joy for ever.

Keats began his medical career by apprenticing himself to a surgeon, and later continuing his studies at St. Thomas and Guy's Hospitals. A very capable medical student but caring only for his poetry in his leisure hours.

"The world is full of misery and heartbreak, pain, sickness and oppression." His medical practice and poetic mind have made him extremely sensitive to all forms of sufferings. Happiness is momentary and transient, the only certain thing is,

The weariness, the fever, and the fret
Here, where men sit and hear each other groan;

Where palsy shakes a few, sad, last grey hairs,
Where youth grows pale, and spectre-thin, and dies;
Where but to think is to be full of sorrow
And leaden-eyed despairs;

Keats, like his mother, suffered from tuberculosis, the incurable disease of that time. Before he was carried to the gates of the grave by this illness, he knew how desperate was his state,

I feel the flowers growing over me.

How tragic it is to a life who was cut off in a promise of such a ripe fruit. Mourning his death, Shelley expressed the world's great sorrow in his noble elegy:

Here lieth one whose name was writ on water,
But ere the breath that could erase it blew,
Dealth in remorse for that fell slaughter,
. . . . . .

His passion and love for poetry, his medical training and strange enough that destructive tuberculosis had all combine to make an immortal and great out of an ordinary doctor — Dr. John Keats.

An eighteen century poet, dramatist, and novelist, Oliver Goldsmith, I am sure, is very familiar to any student of English literature who will miss a lot if they have not read the great works like "She stoops to conquer", "The vicar of Wakefield", and "The deserted village". Can you ever imagine a writer of such great literary skill to be a doctor?

"There was almost no kind of writing that he did not touch", said Samuel Johnson in one Epitaph, "none that he touched he did not adorn." A great compliment from a "great" which Dr. Goldsmith definitely deserved.

Professor Edmund Blunden, in his Golden Jubilee lecture of University of Hong Kong, said that "in English prose, considered musically and aesthetically, Sir Thomas Browne may be nearly the greatest of all." Yes, Sir Thomas Browne — a doctor who excelled himself in prose writing. His most famous work, the Religio Medici, which was written at leisurable hours for his private exercise and satisfaction, had established for him a place among the best English writers. Lovell speaks of him as "our most imaginative mind since Shakespeare."

He was also a skilful and well-loved doctor graduating from Oxford with a M.D. Possessing a kind heart, his sympathy for his suffering patients and sorrows of others is genuine and sincere. No one had written so earnestly and beautifully the feelings for the patients which some of us occasionally may have for them:

> "Let me be sick myself, if sometimes the malady of my patients be not a disease unto me; I desire rather to cure his infirmities than my own necessities; where I do him no good, methinks it is scarce honest gain; though I confess 'tis but the worthy salary of our well-intended endeavours."

The examples given above were doctors of previous centuries. Some of you may wonder how much the doctors of the present century have contributed to the wealth of literature? Are the modern day doctors, being greatly influenced by the over-emphasis of scientific developments, forsaking the good work done by their predecessors? This is by no means true. We do have our great novelists like A. J. Cronin, Somerset Maugham, Poet Laureate Robert Bridges, and others.

Somerset Maugham, the greatest short story writer of our time, graduated from St. Thomas Hospital, where he learnt the keen sense of observation of people and places. Forsaking medicine for literature which he loves more, he has written many

short stories, thirty novels, and as many plays. Yet he never denied that his medical training and practice have exercised considerable influence upon his writings both as to materials used and his attitude to his fellow men. His hospital experience has brought him in contact with interesting spectacles of human life:

> "The patients come in, strings of anaemic girls, . . . old ladies . . . But on the whole the impression was neither of tragedy nor of comedy . . . It was manifold and curious, there were tears and laughters, happiness and woes . . . , it was tumultous and passionate. There was neither good nor bad. There were just facts. It was life."

Yes, it is life. The life viewed by a doctor in a most penetrating way. No wonder once he gave a very sensible advice to other writers,

> "I do not know a better training for a writer than to spend some years in the medical profession. There you can see the human nature, and come into contact with human life in the raw."

The modern age is glad to have a novelist of such great skill and insight as A. J. Cronin. After graduating from University of Glasgow with a medical degree, Dr. Cronin went down to South Wales and London to practise. He had a very successful and interesting practice, later he became a successful writer of such books like Citadel, The Hatter's Castle, and An Adventure in Two Worlds. In his autobiography, he related to us why he became a writer:

> "I have always had that queer urge to write ever since I was a youngster... I admit also I like medicine and I'm good at it. When I am attending my patients, seeing people as they really are, I keep thinking what story I can make out of them. I want to describe the characters I am meeting and get something on the paper. . ."

As a doctor he sees life at first hand, observes the courage and good humour of his fellow creatures struggling under great hardship for the first time. He then begin to penetrate into the realm of deep thoughts. Although he is successful and rich, he is not happy.

"I couldn't pretend that I am miserable. Nevertheless I experienced basically, a feeling of emptiness and dissatisfaction, a growing realisation of the futility of my objectives and, indeed, of all the material achievement. And more, I began dimly to discern how much attention I had paid to the wrong things in life, and how little to the right . . . And now, with a shock of disenchantment, my eyes are opening to the vanity of human comfort, and the need of the things that are everlasting."

He begins to realize that in addition to the physical suffering of the illness, the people of the world are also suffering from a more dreadful disease — the disease of the soul. As a doctor he can only relieve the physical sufferings, but he realises that that is not enough. He recognises the urgent need, irrevocable and inescapable, of reforming and restoring the shocked and shattered world; and this is shown quite obviously in some of his books:

> "When the world seems a place of bewilderment and fatigue, there is a gleam of light on the dark horizon, the remedy which offers release from misery and stife . . . The challenge is there, the need desperate. Despite the cruelty which men inflict on each other, despite the indifference and confusion, the threat of wars and open hostility, the destroyings and the dispersings which afflicts the nations, I have an inextinguishable hope in moral regeneration of the people of the earth."

What a praiseworthy optimism he has. Medicine and its workers serve to cure both the illness of the people and the desperate illness of the present world. Only then can humanity be saved. Now we have a very good example — Dr. A. J. Cronin who has strived to reach this aim of a happy world to live in.

The picture will be incomplete if I do not mention some other great literary figures admired by many readers. A name you all may know, Dr. Anton Chekov — a great Russian novelist and play-writer, whom Leo Tolsoty thought it was his great mistake to be in medical profession. Sir Arthur Conan Doyle, the creator of Sherlock Holmes, applied the methods of medical diagnosis in his methods of detecting a criminal. You will be surprised at the similarity they both have. A good friend of and as good a writer — Von Schiller nearly escapes my mind. He was a German doctor and poet of the eighteenth century. Beethoven was a great admirer of him, and included a chorus in the final movement to sing a setting to the "Ode to Joy" by Von Schiller in his Ninth Symphony (choral) — the finest music ever written.

We, who are members of this great profession either as doctors or students, may take a special pride in all of them. The charm of other thoughts clad in beautiful language and poetry have won many people to the love of good literature, beauty of the world, and the values of human life.

TEOH PEK CHUAN.

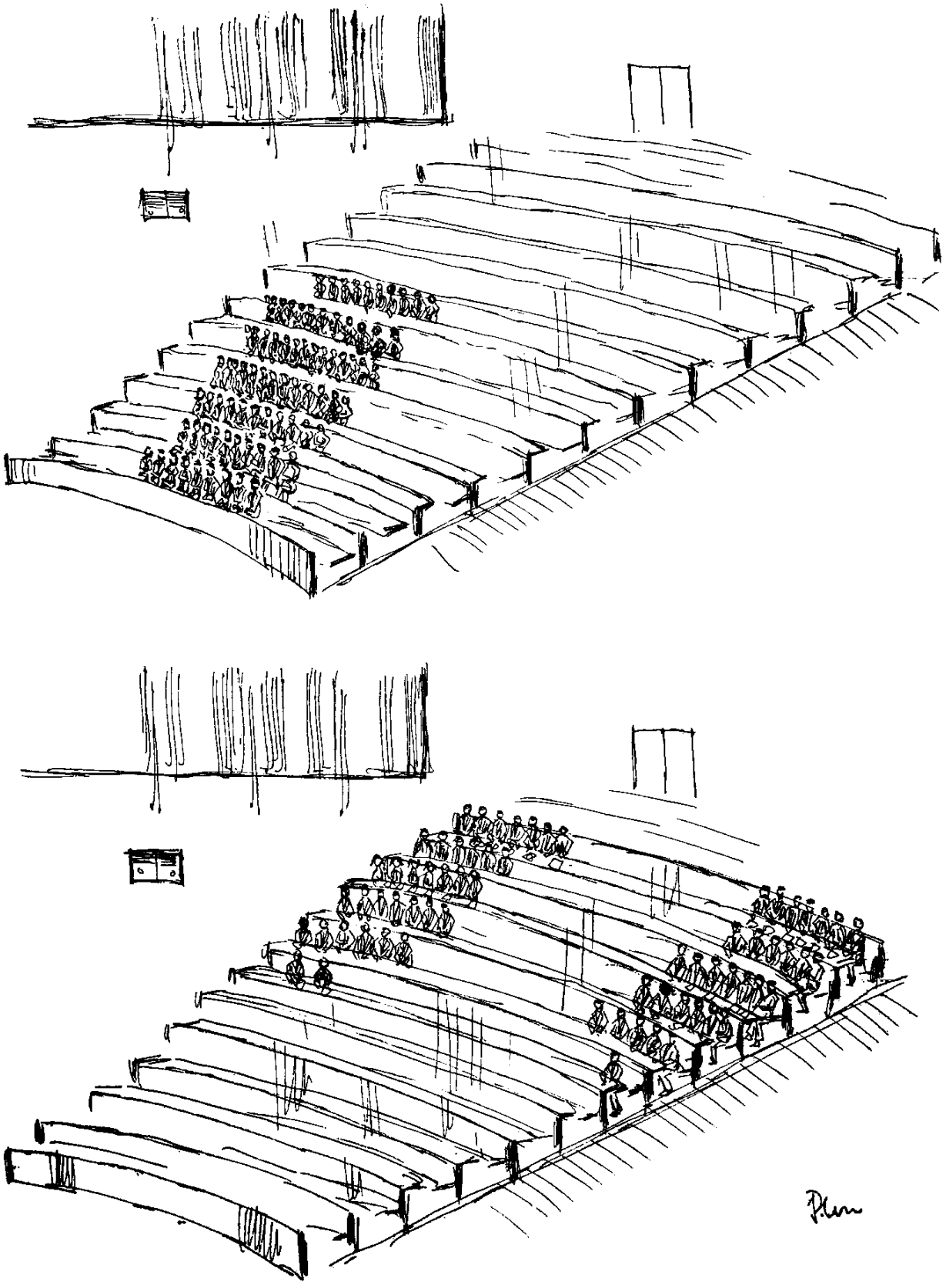
For all the happiness mankind can gain
Is not in pleasure, but in rest from pain.

. . . Dryden *"The Indian Emperor, IV, 1"*

Razors pain you;
Rivers are damp;
Acids stain you;
And drugs cause cramp.
Guns aren't lawful;
Nooses give;
Gas smells awful;
You might as well live.

. . . Dorothy Parker *"Résumé"*

Geographical Distribution of Audience



KNITWIT

To many people, a medical freshman seems to be on the door to prosperity, the path to a wonderful future. He has five beautiful years ahead of him, and he will soon be one of those happy people whose dream will soon be realized. This holds true for many people, even for the freshman himself. The poor boy/girl has no premonition of his postion on the door to doom and the path to disaster. One can imagine those who are already medical undergrads squeezing their hands in delight and saying 'Welcome one, welcome all', just as an older prisoner welcomes his new cell-mate. 5 dismal years await him, and at the end of that, a whole lifetime devotion to his profession.

Because of his unawareness, the Medical Freshman thinks quite highly of himself. When asked: "What are you doing these days?" the answer pops out: "Medicine!" Note — he keeps back the fact that he is in the first year. Of course all these little self-flatters come home to him on Medical Night, and then, — well, only one who has experienced it can tell you how he feels after that night.

The word cadaver comes to him like the figure 13. To be aware of it is superstition — to openly prounounce 13 as his lucky number is even more superstitious. So it is with the cadaver. Is he afraid of it? *Of course* not. The stronger he professes his unconcern, the worse actually is his fear. The writer knows of a case in which a freshman, on the 1st day of lecture, managed to take a peep into dissecting room in the morning. He was, of course alone. Lo and behold, he saw them, lying side by side, all 14 of them. Just to show himself that he was unconcerned with being alone among 14 corpses, he lifted up the cloth covering each one to have a clearer view. Result — an unexplained (to his friends) loss of appetite for the rest of the day. Of course, cadavers are here to stay, and once the idea is got used to, all concern is readily disregarded. Just as a matter of interest, cadaver meat, so says one of the boys, is quite bitter.

Anatomy undoubtedly takes up a lot of time — within the 2nd week in October, one can see diligent and perhaps, over-diligent boys in the study room with books pilling up to their noses — Gray's, Hamilton's, Jamieson's, Grant's . . . One of them confided in this writer — he had tried one and all, but finally found a true friend in Johnston's synopsis.

The first viva came and went. The strain felt was the most terrific one since Matriculation. Standing without the dissection room, each student became a perfect specimen for physiologists — if they want to study the effect of emotion on Circulatory functions, Hormonal secretions, and especially Renal function. (The lavatories were found to be most frequented on Viva Afternoons). The after effect of the first viva? — A relief beyond description, a relief never felt before in all his life — and before he has finished reliefing himself, Prof. Chang's next Viva Voce notice already appears on the board.

Up to his first experiment in Physiology, the Medical student has had long experience in the dissection of frogs and rabbits — under anaesthetic, that is. Now he must try to familiarize himself with digging a needle into the frog's brain, twisting and turning it inside until all spinal reflexes are lost. Of course, the frog will always micturate into the experimenter's hands if he doesn't pith carefully. After the first three or four physiology experiments, one wonders how to do the Reports.

Somehow doctors can never get used to the idea of a fellow doctor getting sick! Least of all, the youngest of his apprentice. So when an ailing freshman approaches the health officer, he meets a suspecting glance as if to say: You are going to be a doctor yourself. You can take a few hardships!

How does one recognize a Medical Freshman? Well, this junior of all juniors (he has 4 sets of seniors on top of him — other faculties have only 2) distinguishes himself by having at his side a pile of the thickest books he can get hold of — in fact any book so long as it has the word 'medical' in it, and goes about parading himself in front of admiring young girls — and the most characteristic mark of all — his tie, still the Union tie and not the long-coveted Medical Tie, — that is, not *yet*.

All in all, it is certainly a real sensation to be a Medical Freshman — without having been one, one would never pass this humblest of all years. This writer knows, he was one.

KNITWIT

THE DISCOVERY, DEVELOPMENT AND SIGNIFICANCE OF NALORPHINE

E. LEONG WAY

China Medical Board Research Fellow
Department of Physiology, University of Hong Kong, Hong Kong
Professor of Pharmacology and Toxicology
University of California Medical Center
San Francisco, U.S.A.

If the question were put to physicians and medical scientists as to what have been the most important drug discoveries since World War II, among those certainly to be mentioned would be antibiotics, tranquilizers, anti-depressants, antihypertensives and orally effective antidiabetic, diuretic or anti-fertility agents. I doubt if anyone would mention nalorphine; in fact many practitioners are still unaware of the existence of the drug.

While pharmacologists would not dissent as to the therapeutic merits of the new agents mentioned above, to many pharmacologists the advent of nalorphine is of fundamental interest. Even if it may not be the most important of pharmacologic discoveries, it represents a milestone in the development of a new type of drug antagonists, and it augurs that the long sought potent non-addicting analgetic may become a reality. Its invention is somewhat controversial and since I was privileged to observe closely the conception and development of the compound, I thought that I should like to tell you some thing about the discovery of nalorphine. But before I tell you this story, it might be advantageous to recapitulate briefly the basic facts about nalorphine.

Chemically, nalorphine or N-allylnormorphine is a semi-synthetic derivative of morphine, closely resembling morphine in structure. The only difference between the two compounds is that the nitrogen of the piperidine ring of morphine is methyl substituted while that of nalorphine is allyl substituted. It is not surprising therefore, that the two compounds have many chemical and physical properties in common. Pharmacologically, however, the resemblance is not as clear. Although nalorphine has weak morphine-like actions, of greater significance, is its ability specifically to antagonize the effects of morphine. This antagonism prevails also against the surrogates of morphine, that is, compounds that mimic morphine effects. Nalorphine is used chiefly in the treatment of acute overdosage by morphine-mimetic compounds where it brings about a dramatic reversal of toxic effects. Nalorphine has been used also in the diagnosis of narcotic usage and the simplicity, ease and safety of the nalorphine test have made its usage for such purposes increasingly popular. More recently, some findings on compounds related to nalorphine suggest that new analgetics may be in the offing which do not possess some of the undesirable properties of morphine with respect to respiratory depression and addiction liability.

Like most major break-throughs in the discovery of a completely new type of pharmacologic agent, the innovation of nalorphine as a morphine antagonist and diagnostic agent was partly by design and partly by accident and the serendipity of the pharmacologic investigators. The people with the original idea for making nalorphine actually were trying to develop a new analgetic which would not be as depressant on respiration as morphine.

During the latter part of 1939, two of my good friends and fellow graduate students at the University of California, E. Ross Hart and Elton McCawley, were

working in the Department of Pharmacology on the San Francisco campus under the eminent Professor Chauncey D. Leake, innovator of divinyl ethyl ether as an anesthetic and carbarsone as an amebacide. Leake had assigned Hart to study the pharmacology and toxicology of some allyl substituted compounds and Hart had noted that allyl substitution appeared to convey stimulant properties on respiration to many substances. McCawley had only recently acquired his B.S. in chemistry and was carrying out a biochemorphic survey of morphine derivatives in the hope of developing an analgetic superior to morphine. It was only natural, therefore, in the congenial atmosphere fostered by Leake for free discussions of research problems (social, world and sex ones as well) that Hart was struck with the possibility that incorporation of the allyl radical in the morphine structure might result in an analgetic which was less depressant on respiration than morphine.

On consulting the literature Hart and McCawley were greatly excited to find that the synthesis of several allyl substituted derivatives of codeine had been reported by von Braun in 1916. One of the compounds, having an allyl group replacing the methyl of codeine on the piperidine nitrogen, that is N-allylnorcodeine, had been found by Pohl in 1915 to antagonize the respiratory depressant effects of morphine in rats and in dogs. It is puzzling to me why Pohl or others have never followed up on these studies and I must presume that the work was disrupted by events of World War I. Thus, Pohl's observation remained dormant until Hart and McCawley began their studies almost twenty-five years later.

The chemical synthesis of nalorphine was not accomplished as easily as expected. By common assent because of training and background, McCawley was to be chiefly responsible for the chemical synthesis of nalorphine and Hart would then assume the main task for evaluating the compound pharmacologically. Both students had other responsibilities; Hart was pushing himself to finish his doctoral dissertation, while McCawley was working on some other research projects and still had course requirements to complete. Thus, while it was initially a sort of a side project for the two, it was a pet one because it was their own.

After working nearly a year on this problem in between other commitments, McCawley felt he had achieved the synthesis of nalorphine in a trial run, but the yield for the reaction was poor and insufficient for pharmacologic evaluation. Again during one of the free departmental interchanges, David Marsh, another graduate student now deceased, suggested a modification in the synthesis procedure for improving the yield of nalorphine. The modified process yielded a substance which on chemical analyses appeared to be consistent for a compound corresponding to nalorphine. These findings were submitted for publication in the fall of 1940 and appeared in print early in 1941 as a joint publication by McCawley, Hart and Marsh. Pharmacologic evaluation of this material was undertaken by Hart who reported in a preliminary study in 1941 that nalorphine, like N-allylnorcodeine, could antagonize certain morphine effects.

The above findings were soon to be largely negated by two Merck chemists and also by McCawley. Both groups had independently prepared a different substance which corresponded to nalorphine by chemical analyses and tests, and hence, the allyl derivative reported earlier by McCawley, Hart and Marsh could not be nalorphine. In retrospect the substance reported originally by McCawley, Hart and Marsh was probably a diallyl substituted product of morphine or a mixture of this compound and the desired monoallyl substituted nalorphine. The story of how the Merck chemists started their work is of interest because the credit for the discovery of nalorphine has been considered to be almost entirely an industrial achievement.

In the belief that his laboratory had achieved the synthesis of nalorphine and established priority, Leake felt the quickest means of exploiting this discovery for the benefit of the public was to pass it

on to a pharmaceutical concern for development. As a consequence Leake tried to interest Merck concerning the potentialities of nalorphine. He furnished Merck with the preliminary data and requested the company to prepare him sufficient amounts of nalorphine for pharmacologic evaluation. It was only natural that Leake should approach Merck inasmuch as he had good personal relationships with Randolph Major, the Director of Research; the two had enjoyed a compatible relationship earlier in developing divinyl ether.

The two Merck chemists assigned to the problem, Weijlard and Erickson, were unable to confirm the findings of the California group and then proceeded on their own to synthesize nalorphine, following an earlier lead by von Braun for the preparation N-allylnorcodeine. The consternation of the university group was considerable, to say the least, when Weijlard and Erickson published their findings early in 1942. The California group felt with some justification that the Merck people owed them the courtesy of a consulation and that the project should have at least proceeded as a joint undertaking.

McCawley was taken aback the most since he had decided for his doctoral dissertation that he would concentrate on nalorphine, whereas Hart had completed his studies and had moved on to a teaching position at Jefferson. McCawley was more hurt than surprised by the Merck findings because he already had developed misgivings about his earlier work and, in fact, he had independently achieved the synthesis of nalorphine when the Merck article appeared. McCawley's work is buried in his 1942 doctoral dissertation which is on file with the University library. However, such communications do not enjoy the circulation of published journal articles and consequently McCawley has received no credit for the synthesis of nalorphine other than his earlier abortive attempt to prepare the compound.

Again credit for the initial pharmacologic study on nalorphine is usually given to Merck despite the fact that Hart published a preliminary report early in 1943 that nalorphine appeared to be more potent that N-allylnorcodeine in antagonizing morphine effects on respiration. Klaus Unna, now Professor of pharmacology at Illinois, who was a research pharmacologist at Merck during the war, published a systematic study during the latter part of 1943, describing the antidotal effects of nalorphine in morphine overdosage. I doubt seriously that Unna had strong personal interests in nalorphine, although he had the pride of a professional in doing an assignment well. Perhaps the pride also in being a mature investigative scientist made him reluctant to exploit an idea that was not his own creation. In the introduction of his paper, he properly acknowledges that the problem was initiated at the suggestion of Leake.

Whatever may be Unna's reasons, he has not published to my knowledge any further studies relevant to his initial findings and yet he has been one of the most productive contributors to our knowledge in the area of neuropharmacology. These views are purely conjectural on my part but I feel have some basis from my acquaintance with Unna. I had left the University of California late in 1942 to work at Merck and although I was there less than a year and my contacts with Unna were infrequent, we did on occasion discuss pharmacologic matters. I do not recall his ever having discussed his nalorphine studies and in fact, I did not even realize that he was working on the problem until his paper was published. Of course, I was just a little frog in a big pool at Merck and there was really no reason why I should have been consulted in this matter other than my being a pupil of Leake.

The complete pharmacologic studies of Hart and McCawley did not appear in print until 1944. Their report was delayed by a combination of factors. The high cost of morphine, which was used as the initial intermediate for the synthesis of nalorphine, limited the amount of nalorphine McCawley was able to prepare. After he had synthesized nalorphine in 1942, he proceeded to study the com-

pound pharmacologically and he also sent a supply to Hart. At the time McCawley was in a particular rush to complete his doctoral work because he had an opening waiting for him at Yale and because Leake was soon to leave for Texas to rejuvenate the medical programme there. McCawley understandably did not wish to take the time out to prepare additional amounts of nalorphine, particularly since he and Hart both expected Merck to supply them with plenty of the compound. However, no nalorphine was ever sent them for pharmacologic studies although a tiny quantity was furnished them for a melting point determination. In the meantime Unna's findings were published. Hart's earlier pharmacologic study in 1943 on nalorphine have often been ignored because the publication was preliminary in nature.

For reasons that are not quite clear, after the studies by Hart and McCawley and by Unna on nalorphine, there was a sudden lapse of interest and not another publication appeared concerning the compound until six years later. Had either Hart or McCawley followed up their work at this time, I am convinced that they would have been accorded proper recognition for their creation. Perhaps because their "baby" was no longer theirs, they lost interest. During the interim, Unna left Merck for an academic post at Illinois to work on his own research problems. The Merck management may have felt that nalorphine had too limited clinical application and consequently did not push the work on the compound too vigorously. At any rate it was not until 1950, after a report by Huggins and his associates confirming the earlier work, was there a stirring of interest in nalorphine. A clinical report announcing that nalorphine was a useful and specific antidote for acute morphine overdosage did not appear until 1951. To the authors of these studies, Eckenhoff, Elder and King must be given considerable credit for sparking the interest in nalorphine.

The antidotal effects of nalorphine against morphine overdosage are now well-documented and consequently I shall not dwell on the findings in detail. In brief, the observations noted in the clinic amply confirm the ability of nalorphine to reverse many of the toxic effects of morphine and this property has been exploited many times in the clinic as a life-saving procedure. Intravenous administration of 5 to 10 mgm of nalorphine promptly abolishes the respiratory and circulatory depression caused by morphine or any morphine-mimetic substance. Thus overdosage to heroin, dihydromorphinone, codeine and such synthetic morphine surrogates as pethidine, methadone, levorphanol, etc., can be effectively antidoted by nalorphine treatment. So selective is this effect, that should nalorphine fail to antagonize deep respiratory depression that is known to be drug-induced, one can safely conclude that poisoning must have resulted from a pharmacologic agent unrelated to the narcotic analgetics. The usefulness of nalorphine as a diagnostic agent, however, finds greater application in chronic rather than in acute morphinism.

In 1953 Wikler, Isbell and Fraser suggested that nalorphine could be used as a reliable test for addiction to heroin, morphine, methadone and codeine. They found that 30 mg. of nalorphine would precipitate severe withdrawal signs in patients addicted to 300 mg. of morphine daily. Additional experiments indicated that the intensity of the nalorphine precipitated withdrawal signs was dependent on the degree of physical dependence of the addict and the nalorphine dose. From their observations they concluded that nalorphine could be used for diagnosing narcotic usage. Thus, if an addict has been taking as much as 120 mgm of morphine or its equivalent daily for 15 or more days a 3 mgm subcutaneous dose of nalorphine will usually cause profuse perspiration, pupillary dilatation, hypernea, gooseflesh, nausea, vomiting and defecation within 20 minutes. If abstinence signs are not observed an additional 5 mgm of nalorphine can be injected and this may be followed if necessary by a third dose of 8 mgm. Absence to the withdrawal signs or the presence of nalorphine effects such as

ptosis, slurring of speech, miosis and respiratory depression is indicative that the patient has not received sufficient amounts of morphine or one its surrogates to produce physical dependence. This procedure is usually identified by its Place of origin as the Lexington test.

The Lexington test was soon shown to have certain limitations as a diagnostic test for addiction because it appeared reliable only for the addict having a strong physical dependence to narcotics. However, such addicts are relatively rare today in the States. Strict law enforcement with resultant high price and poor quality of heroin has altered the characteristics of the addict there. These addicts, having to use a highly diluted product, develop a relatively low degree of physical dependence and in such individuals the Lexington test cannot always be used with reliability.

In 1955 Terry noted on applying the Lexington test, that a 5 mgm dose of nalorphine produced marked midriasis in a known woman addict and this occurred in the absence of other withdrawal signs. Terry's findings were published jointly with Braumoeller in 1956. Subsequent experimentation and refinement have resulted in a standardized procedure that has been fairly widely adopted.

Under fixed lighting conditions the size of the pupil is measured by means of a pupillometer which is simply a small card containing two vertical columns of black dots. Each dot is 0.5 mm. larger in diameter than the one above it and measurement of pupil size is made by pairing the pupil with the black dot of comparable size. The size of the pupil is determined before and thirty minutes after 3 mgm of nalorphine subcutaneously. If the pupil is found to dilate 0.5 mm more the test is judged to be positive, that is, the individual is considered to be a narcotic user. A constriction of the pupil of 0.5 mm or more is indicative of a negative test, and results in between plus and minus 0.5 mm are generally considered to be equivocal although different observers may shade their interpretation within this range.

The pupil test alone should never be taken as evidence for narcotic usage but used in conjunction with other findings it has been shown to be a rapid, reasonably reliable and relatively safe screening test. At the University of California we have checked the results of the pupil tests reported by several observers by analyzing the urine of the subjects undergoing the test for narcotic substances. Of 419 tests there was good correlation in 85 percent of the cases and in only 5 cases were we unable to substantiate a positive pupil finding by chemical tests.

The procedure has been used in California since 1955 and the number of tests performed each month is about 6000. It has been particularly useful for parole and probation supervision of the addict. The test has been instituted at the Addiction Block of the Castle Peak Hospital to test addicts given trial leaves prior to their discharge and as part of the follow-up programme on discharged patients. I hope that the test will be also adopted by other institutions of Hong Kong concerned in the treatment and rehabilitation of the addict. I am certain that the various city prisons, Tai Lam prison for addicts and Shek Kwu Chau Island would find the test useful as a security check and in facilitating their programme for follow-up care.

Not only has nalorphine become a useful therapeutic agent in the treatment of acute narcotic overdosage and in the diagnosis of narcotic usage, it has revived interest in studies related to basic mechanisms concerned with physical dependence and tolerance to narcotics. Pharmacologists are using nalorphine as a tool to gain insight in such phenomena and to assess the addiction liabilities of new analgetic agents.

Nalorphine has also been used as the prototype for the development of new analgetics. Earlier, it was felt that if nalorphine were combined with morphine, the analgetic properties of morphine might be retained while nullifying its respiratory depressant and addiction liabilities. Such studies were not completely satisfactory in yielding a practical mixture but when nalorphine was found

by Lasagna and Beecher to have inherent analgetic properties, a new avenue was opened. Many studies were initiated to design new analgetics without adverse effects on respiration and behaviour by chemically manipulating nalorphine and its closely related derivatives.

Many related derivatives of nalorphine have since been synthesized. One of first to be made available commercially has been levallorphan which was reported in 1952 by Fromherz and Pellmont to be more potent than nalorphine as a morphine antagonist in experimental animals and in 1953 by Hamilton and Cullen in clinical patients. It is roughly three to five times more potent than nalorphine in respects. There have been several reports also indicating that large doses of morphine or pethidine can be safely administered concomitantly with levallorphan for enhancement of analgesia but the procedure has not gained wide acceptance and levallorphan by itself does not appear to have significant analgetic properties. Recently, however, some new potent morphine antagonists in experimental animals have been reported to be effective analgetics in humans.

One of the most potent and promising in this respect is under study by De Kornfeld and Lasagna at John Hopkins. It is known chemically as N-cyclopropylmethylphenazocine. It has been reported to be effective orally in post operative and postpartum patients at a dose one-fortieth that of morphine while producing significantly lower respiratory depression. Addiction liability is also believed to be low. The chief undersirable effect noted is its hallucinogenic properties but toxicity studies to date are relatively limited. However, even if further studies should reveal other undesirable properties that might preclude its clinical application, the marked separation of analgetic effectiveness from respiratory depression and addiction liability in this compound represents a significant achievement. Should this compound prove to be unsuccessful, chances almost certainly favor that a similar prototype will be developed which will find practical application. Thus, the ideas emanating from two young pharmacology graduate students have crystallized and the development of potent analgetics with low respiratory depressant effects and low addiction liability appear imminent.

Generic and Trade Names of Drugs

Nalorphine	— Nalline, Lethidron
Levallorphan	— Lorfan
Pethidine	— Meperidine, Demerol
Methadone	— Physeptone
Levorphanol	— L-Dromoran
Dihydromorphinone	— Dilaudid

References

Braun, J. V.: Ber. 49: 977, 1916.

Huggins, R. A., Glass, W. G., and Bryan, A. R.: Proc. Soc. Exper. Biol. & Med. 75: 540, 1950.

DeKornfeld, T. J., and Lasagna, L.: Fed. Proc. 22: 248, 1963.

Elliott, H. W., and Way, E. Leong: Clin. Pharm. & Therap. 2: 1961.

Fromherz, K., and Pellmont, B.: Experentia 8: 394, 1952.

Hart, E. R. J. Pharmacol. 72: 19, 1941.

Hart, E. R. Fed. Proc. 2, 82, 1943.

Hart, E. R. and McCawley, E. L. J. Pharmacol. 82, 339, 1944.

Hamilton, W. K. and Cullen, S. C.: Anesthesiology 14: 550, 1953.

Lasagna, L, and Beecher, H. K. J. Pharmacol. 112: 356, 1954.

McCawley, E. L. The Pharmacology of certain nitrogen-substituted normorphine derivatives (Dissertation, 1942, University of California.)

McCawley, E. L., Hart, E. R., and Marsh, D. F.: J. Am. Chem. Soc. 63: 314, 1941.

Pohl, J.: Z. exp. Path. Therap. 17,370, 1915.

Terry, J. G. and Braumoeller, F. L.: Calif. Med. 85: 299, 1956.

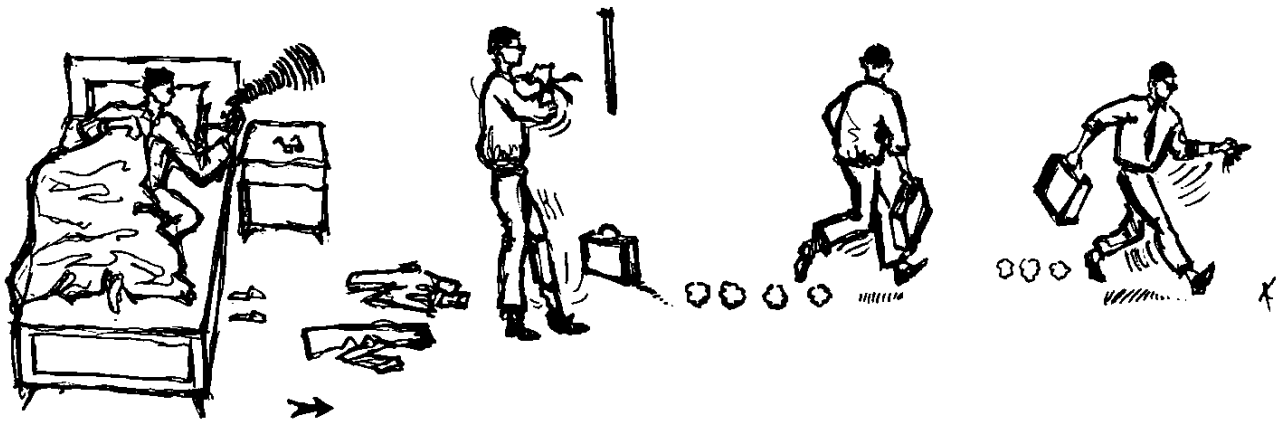
Unna, K.: J. Pharmacol. 79, 27, 1943.

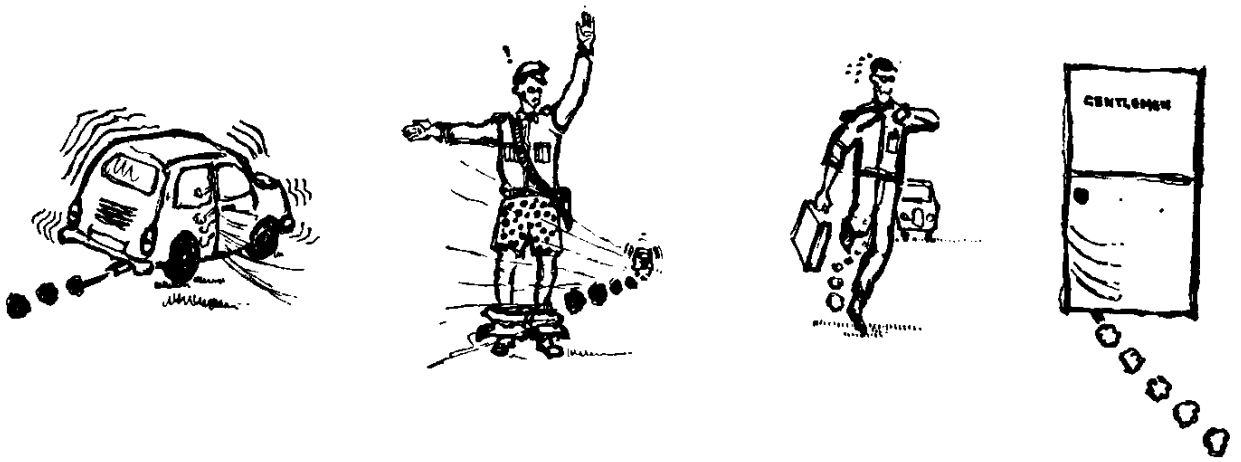
Way, E. Leong, H. W. Elliott and N. Nomof.: Bull. Narcotics 15: No. 1, 29, 1963.

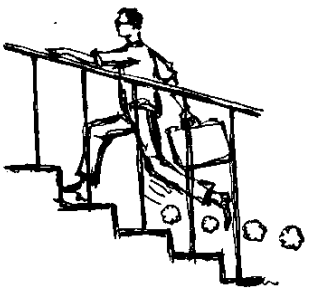
Way, E. Leong & Lin, S. C.: J. of Forensic Science, 8,209, 1963.

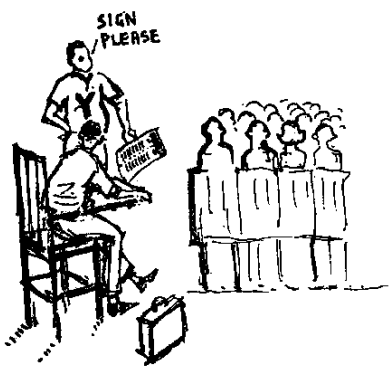
Weijlard, J. and Erickson, A. E. J. Am. Chem. Soc. 64: 869, 1942.

Wikler, A., Fraser, H. F., and Isbell, H.: J. Pharmacol. 109: 8, 1953.




GENTLEMEN





—And so to sleep again

- End -

QUO VADIMUS?

The mind of man is different from that of an animal in that it is able to think along logical lines and solve problems by weighing evidences and finally deducing an answer. He is also given that inquisitiveness which has both benefited and hindered him. That man is an observant creature cannot be denied, and with his deducing power he has arrived at a number of basic ideas. He believes that all actions come under two headings — right and wrong. He has also discovered that man as the most defenceless of animals flourishes best in a community. He has therefore grouped his kind into a tribe, then a city, and then a nation. In this new environment, he sets his mind to new problems. If ethics were to be practised, some form of government of the people has to exist. He delved into this matter, experimenting with various methods of how this could be carried out and concluded Democracy was the best form of government, as the ultimate governing power rests with the people. But when he tried out this form of government, he found it necessary to appoint certain leaders, upon whom the real authority must rest. He realised that no society could exist without a leader or leaders to whom must be given supreme power, whether democratic or not.

On the material side, man's mind may be said to have been put to more practical use. Even since Archimedes discovered the lever and Euclid established the fundamentals of geometry and mathematics, the world has seen a flood of changes. First came the wheel and then the bow, which for a thousand years was employed as an implement of war and peace. Then came the age of dynamics, sparked by Galileo. Men began to discover the potentialities of various fuels and substances which had hitherto been literally washed down the gutter. With these came such devastating weapons as the cannon. Then the genius Newton established his famous laws. New ideas and foundations for new field of study appeared. One invention after another tumbled into the civilised world. First came the steam engine which revolutionised industry. In its wake, came new industrial towns and misery to the wretched people who lived and worked in them under degrading conditions. But many people claimed that they were living in an age of enlightenment for civilisation was progressing. But was there really any progress? An old saying states that when one has acquired something new, one tends to discard the old things. This is very true of all the "progress" we have made and are making. When we have invented something new, it is natural to discard the old. Similarly, when we have discovered new methods we discard all old methods as inferior. Even in ideas and thoughts, we tend to adopt the new for the old, for nothing is gained without something being lost.

To carry the material progress of human civilisation further, we harnessed electricity and employed its various applications. It was hailed by all with joy and triumph just as a father rejoices at the birth of his first-born son. But let us see what this baby has grown into and what it has brought upon mankind. In this electrical or as some say, "atomic" age, the human mind has become mere versatile than ever. It has adapted electricity to every conceivable use from simple household lighting to carrying the human voice and picture across hundreds of miles — the radio, television and radar, the electronic microscope, and now the electric robots. The electronic calculating machine which can calculate a problem in a matter of seconds when a human mind takes several years to do so, appears certainly to be a great help to mankind, saving men from hours of head-cracking

calculation. Electric robots can control and run factories and operate any machine. Plans have been laid to enable man to run his home and get himself a meal in a matter of seconds just by pushing a button. All these things save man a lot of work and physical exertion, but is work really that bad? We say to ourselves in consolation, "See how far we have progressed. How lucky we are to live in this age of no work. How unfortunate our forefathers must have been." But unfortunately, we do not realise that life and progress are like a balance. We were put into this world with all the necessary skill to balance the counter acting forces of our environment. But as we progress, in an attempt to make our environment more adaptable to our weak frame, we little realise that at each step towards this direction, the pan on the other side of the balance is dropping. We are sacrificing skill for comfort. We have now "progressed" to a stage when all our work is done by machine. How ironical it is to see all the manual skill developed by our forefathers through the ages going to waste. Now we control our machines, but inevitably, in time to come, our machines will control us. We will become so dependent on them that if anything should happen to them, we will be left dazzled, and probably, the human race will die off.

So we see that with all these machines doing our work, we are slowly slipping into the abyss of ignorance and uselessness. Our brain, which is the only gift above the lower creatures, will be used more and more to press buttons to get all our work done. And if we have a brain which is of no use except to operate buttons, what then have we?

Quo Vadimus?

D. LEE LI ENG

THE GANTLET

The former gallantry of being a student of Medicine was completely damped by the time the fortnightly vivae were over. Another half a year of turmoil, tests, and disappointment left him in a state of stark fear in sight of the severe trial. It was a tired man that was set to run the gantlet early in March with only some determination to carry him through.

Rather more than half a dozen people stood ready with weapons to form the gantlet, each person a day's journey from the next. In a gantlet, the thing to fear was whether the parts of the body that were hit hurt most or little, and not whether the tormentors hit fiercely or softly. These men who were about to inflict torture were advanced in age, and accuracy was their characteristic in aiming blows. Too well the runner realized this. He shuddered before the gantlet.

At the other end of the ganlet stood the goal — a white sign-post.

On the fourth of March at the stroke of nine, the green-clad runner plunged forward. Down came the blows from the first tormentor. The victim, fortunate among his misfortunes, knew where three or four of the blows were going to land. He covered up his heart, his neck and head, closed his fist, and protected his back above his waist. The precautions were rewarded. Nevertheless, one blow fell on his nose and another on his belly. They both hurt. But he kept his courage and was secretly contented until he set to prepare himself for the second shower of blows. Then he saw nothing but clouds of dust and sand in front; and behind the clouds, the second man took deadly aim. Sure enough, on the next day, the runner felt two brutal strokes, one directed at his pelvis and the other at the thigh, making his leg and foot bleed like a burst pipe-line. They were too much. He writhed in pain and stumbled upon the third man.

The third man hit with mystery. His weapons were of shapes unknown to the runner, who ducked low down, picked up five handfuls of sand in succession, and sent them flying into the torturer's eyes. He had no idea if the sand had sufficiently blocked the assailant's eyes or if it had actually entered them, but he managed to brush pass. As he passed, he felt pain all over his body, but he could not estimate the depths of the wounds made.

He came to the fourth and fifth men. Barbs pierced his body at several points at one sweep of these men's whips. Were it not for these men to swing their whips strictly according to the rules, the victim would lie very still at that very moment and be very dead. As things were, he was able to stagger on and tell himself, "Not too bad." His fortified skin, apparently, had helped to save him from disaster.

The worst part of the trial was over. The sign-post was now close. But hopes for a finish were low. Wounds hurt like burning fire.

The runner refilled his lungs with fresh air, straightened up, and darted on. He was now to see his assaulters face to face. He would like to give them a piece of his mind. Greater issues, however, were at stake and he suppressed his anger.

The sixth man had a red face, a pointed nose and very little chin. "All right," said he, as the runner came panting up, "don't panic!" The runner lit a torch, boiled a pitcherful of water, filled a white bowl with blue liquid, and started to pray. He prayed in a murmur. The red man did not seem to care, and watched the runner taking up the challenge nonchalantly. Soon the prayers were answered by the gods near-by. The runner knew what to do. He worked magic. He mixed the clear boiled liquid with the blue one in the white bowl, and

the blue colour vanished. Pleased, he fooled around with some foul yellow fluid, managed to "keep the place clean", and satisfied himself with his performance. Hopes to reach the goal successfully were re-kindled at the thought of making good, with the merits here, some of the wounds caused by the man with mysterious weapons. But, days later, he learnt with disappointment that the merits here were entirely ignored, and that wounds inflicted by the mysterious weapons might still be fatal.

Then he met three men in a row, of various hairstyles. To the runner, these men were kind. Still, the strokes came down hard and the pain was deep.

By the last day of the journey, the straggling runner had completely lost the fighting spirit. Trembling with a rapidly pounding heart, he faced the eldest man of the gantlet, who sat in a chair amidst dead bodies and stared at the straggler with fixed eyes. This was the man who aimed behind the clouds of dust and sand. The straggler stood before him, not knowing what to do. He opened his mouth, but was speechless. "How dare you run a gantlet as you did!" growled the tormentor, his short unshaven beard sticking out like the whiskers of a tiger. "You defended where the attacker was not attacking! What chance do you think you stand?. . ." While he was growling, it was time to face the last man. This man was warm-hearted, but he showed the runner yellow bones and chopped up bits of dead people. They made him feel sick. The runner had barely passed these unsightly scenes when his strength failed him. He slumped down.

The path at this point became a downward slope. The runner rolled downhill in unconsciousness.

Several days later, a short shower revived him. He felt something hard beside him. He looked. It was a white sign-post on which were inscribed the words: "CLINICAL COURSE, THREE YEARS FROM FINAL M.B. EXAM."

He had come through.

— K. CHUNG.

Any questions? . . . . . What's her name? . . . . . .

A DAY IN THE ANATOMY STUDY ROOM

(as seen by the Cadaver)

LIFE is never dull, no, not even for a Cadaver. Why, I refuse to return to my former self, should I be able to do so!

Oh, the day begins now! Here comes my servant, (belonging to the other world of course, but looking very much like myself. Some mischievous students call him Cadaver No. 1) dusting the place mechanically, just like any other three hundred and sixty-four days. Nothing will happen at such an early hour, so I may as well take a wee nap. Gosh! Who's that clumsy fellow that bangs the door? With my one half-opened eye, I survey the room for signs of the intruder, and am just in time to catch his unruly fleeing figure — tie loosened and flying about, hair dishevelled (apparently he has not heard of BRYLCREEM), eyes red and swollen, a perfect picture of negligence and slovenliness. He is clutching a book eagerly, and muttering in a hoarse voice: "Thank heaven! I've found my manual! Now I can take time out of Physiology lecture to study for the viva." Viva! Viva! Viva! That's all I hear from the students. Why must they be so nervous and apprehensive, as if their lives depend on it? I shake my none-too-attractive head in sympathy, and whisper a thankful prayer that such affairs do not concern me. As for cutting lectures to study for the viva—Tut! Tut!

The door opens again. A group of youngsters rush into the room, fight for the nearest position beside my honourable friend, Mr. Skeleton, and begin caressing him with loving fondness. Somehow, a wave of jealousy sweeps over me. Boo! Hoo! No one cares to learn the muscles, nerves, and arteries which are so beautifully displayed in my body. What's more, Mr. Skeleton is even more unsightly than I am — he is so THIN, just bones and no skin! I begin sobbing uncontrollably, when I hear a soft voice calling my name. I raise my tear-stained face and see my friend grinning good-naturedly at me, as if to say, "Don't worry, your turn will come." I manage a weak smile and feel comforted.

With the presence of the youthful visitors, the whole room comes into life. The din is appalling, low rumbling voices rising in crescendo to heated arguments, or punctuated by peals of laughter. There is plenty of activity too, some students jostling and elbowing each other in merry frolic, others pacing to and fro, reciting pages from Gray's Anatomy, in a desperate last minute attempt to cram as much knowledge into their heads as possible. Amongst the general uproar I settle back complacently, keeping a fatherly eye on my young friends. They are wonderful children, I enjoy their sprightly company, and I share in their joys and sorrows. My only regret is that once they have passed their first M.B., B.S. examinations they hardly come to visit me anymore, the knowledge from my body being no longer of use to them.

Eventually the drone of voices ceases, the students yawn, close their books, and proceed to take a nap. The restful but drowsy atmosphere prevails once more, the mechanical measured typing sound does little to free one's mind from going into my world freely.

I hear some chatting outside. Two students come in, bringing with them a faint aroma of food. Umm — they're going to crunch away. Wish I could have some, but mortal food is not for me! They must find me very appetizing, for they finger me while eating, reviewing their dissection of the previous day. This refreshed animation of someone awake does not last long before they begin to close their eyes too. Ah well, I will take a siesta with them.

I cannot, however, sleep long. A sudden shrill shriek pierce the quiet and tranquil air, I raise one of my eyelids lazily and see, to my amusement, a new intruder clinging for dear life onto her living friend, who affects an air of confidence and assurance, and, half dragging his poor frightened lady friend around the room, explains the various specimens that meet his eye. I notice that he takes great pain in choosing his words, some of which are unnecessarily long and high sounding, even beyond the scope of Dorland. "Little showoff!" I mutter, half in jest. This is by no means a rare occurrence, for many students take a great delight in showing the Anatomy museum to their friends, especially those of the fair sex. After a brief tour they go out, "To have a refreshing cup of tea", as the gallant gentleman puts it.

Soon the other occupants leave too, closing the books and pulling the chairs back into place before making their exit. At around six o'clock my other servant, Cadaver No. 2, comes to close the room for the night. He jumps perceptibly when a clear voice rings out; "Not yet, please." In horror he looks round, thinking I must have opened my mouth. Isn't he relieved when a small human figure appears from an obscure corner and makes for the door? Ah, my dear likeness, how I long to have a chat with you. Why are you so afraid of me?

The door definitely closes now, marking the end of another day.

I have come to the end of my story, which I hope has aroused your interest in the Study Room in Anatomy building. Dear readers, do come and visit me when you have time, I am always around, and if you hear a voice talking to you in the empty room, don't be surprised or frightened, it's only ME!

THE LITERARY CADAVER.

The tendency is for the science of medicine to obscure the art. If the proper perspectives are maintained, they supplement each other. One would not belittle scientific advances in medicine, but they are most fruitful if applied when the art of medicine has laid the foundation in the quest for the solution of a clinical problem.

GARFIELD G. DUNCAN

Dramatic advances in reconstructive surgery are giving physicians a glimpse into the remarkable surgery of tomorrow.

RECONSTRUCTIVE SURGERY

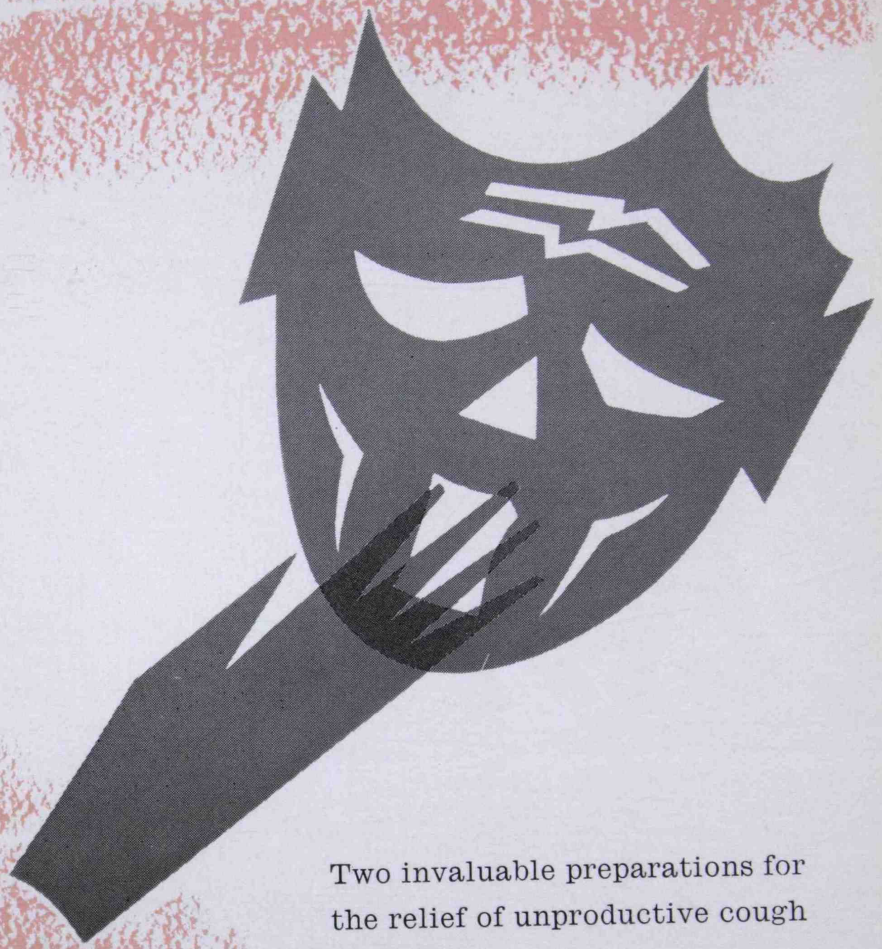
THERE BE NONE OF BEAUTY'S DAUGHTERS

There be none of Beauty's daughters,
With a magic like this three;
And like Staphs and Salmonellas
Is their sweet nature to me:
When, as the best of clerks
They seldom fail to mark
Their Boss' every word with pains —
To make up for lack of brains.

And now this littl' beast is crying
For his fat Mummy's lap,
And our three beauties are striving
To charm him to their trap:
So they may grasp and strip him,
To listen and percuss him,
With a full and heavy motion,
Like the waves of a stormy ocean.

by APH AEL.
(With apologies to Lord Byron)

for dry coughs



'PHENSEDYL'

trade mark brand

cough linctus and capsules

Two invaluable preparations for the relief of unproductive cough of all types.

Each fluid drachm (3·6 ml.) of linctus contains:

Promethazine Hydrochloride B.P.	3·6 mg
Codeine Phosphate B.P.....	9 mg
Ephedrine Hydrochloride B.P...	7·2 mg.

Each capsule contains:

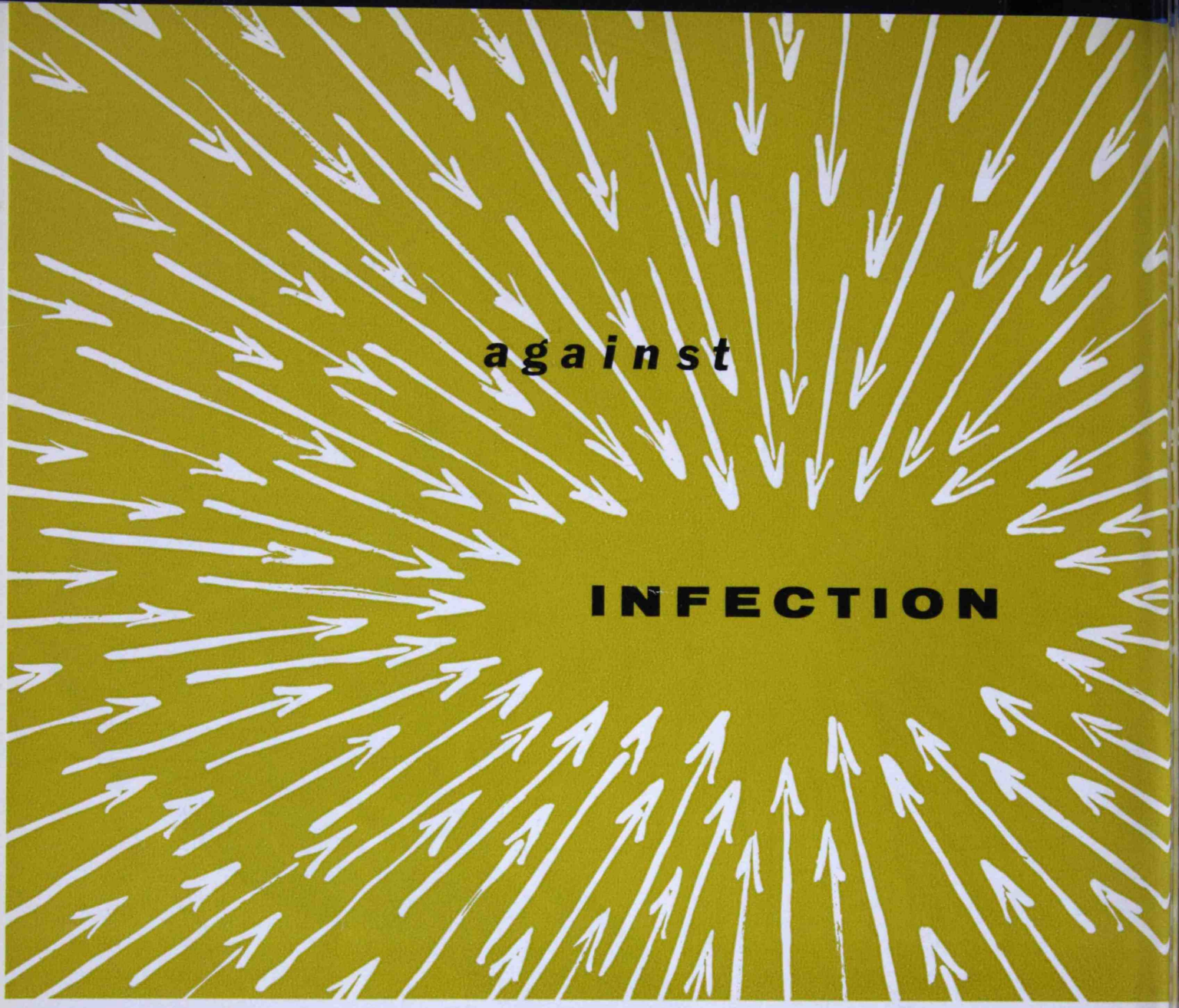
Promethazine Hydrochloride B.P.	3·6 mg.
Noscapine.....	12·5 mg.
Ephedrine Hydrochloride B.P...	7·2 mg.

M&B brand Medical Products

MANUFACTURED BY
MAY & BAKER LTD DAGENHAM · ENGLAND
BRANCH OFFICE: P.O. BOX 599 · HONGKONG

Printed in England

9855a-3Z-4.013



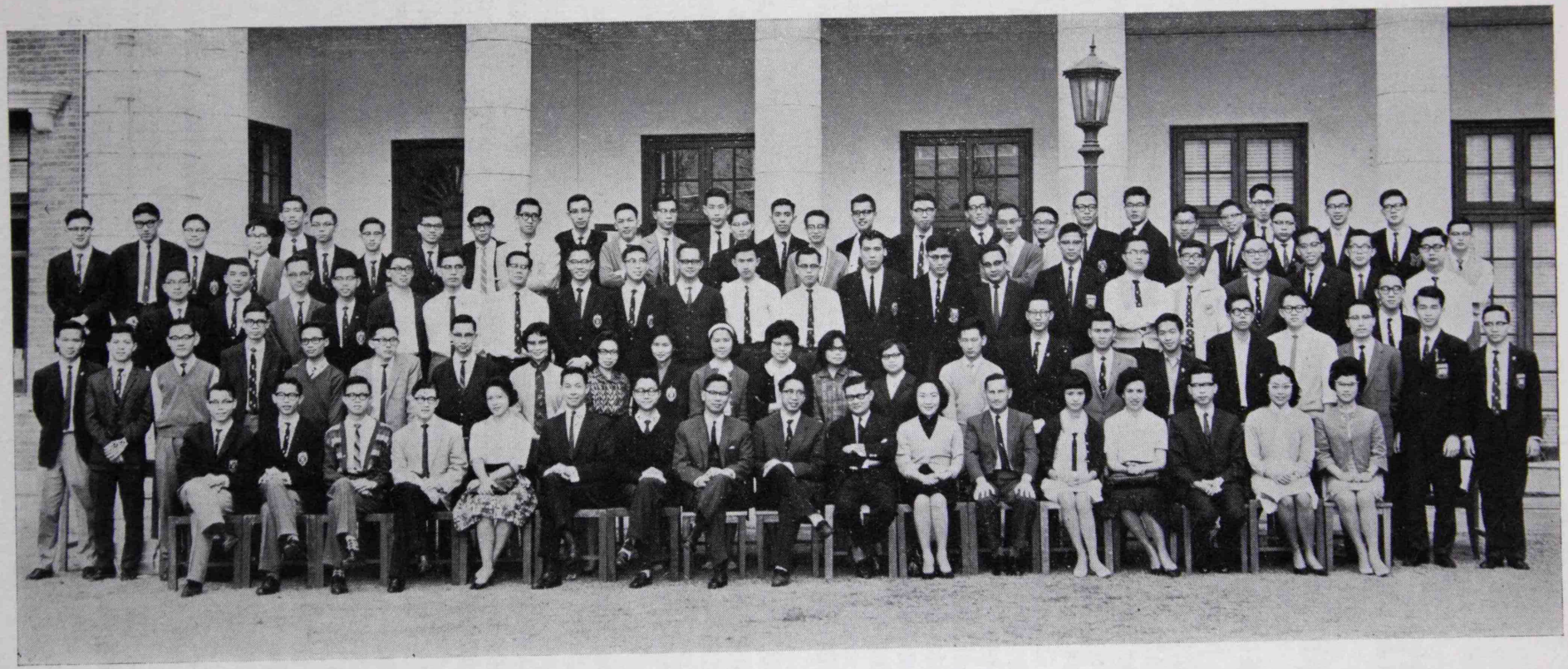
'PENITRIAD'
trade mark brand
TRI-SULPHONAMIDE/PENICILLIN V-K

for infections, particularly of the respiratory tract, in which both penicillin-sensitive and sulphonamide-sensitive organisms may be present.
Supplied as tablets, and granules for the preparation of suspension.

or

'SULPHATRIAD'
trade mark brand
COMPOUND SULPHONAMIDES

an association of three potent sulphonamides giving an additive therapeutic effect with minimal risk of side-effects.
Supplied as tablets and suspension.



Group Photo, Medical Society, taken on 2nd April, 1963, before the Presidential Address.

NEWS FROM THE GAZETTE

16th April, 1963

PERSONALIA

Professor A. R. Hodgson, Professor of Orthopaedic Surgery, has been appointed Honorary Member of the American Academy of Orthopaedic Surgeons.

Dr. A. Brodetti, Lecturer in Orthopaedic Surgery, has been elected a member of the French Orthopaedic Society.

Professor A. R. Hodgson attended the Annual Meeting of the American Academy of Orthopaedic Surgeons, acted as Visiting Professor at Rochester, New York, for three days, gave a lecture by invitation at the Mayo Clinic, and demonstrated operation technique in Seattle, U.S.A., during the period January 8 to 31, 1963.

Professor F. E. Stock and Professor S. Mackey were appointed by the United Kingdom Government to be two of its delegates at the United Nations Conference on the Application of Science and Technology for the Benefit of the Less Developed Areas, held in Geneva during February 4-20, 1963.

Professor A. J. S. McFadzean has received and will accept an invitation from the President of the American Clinical Association to deliver the Gordon Wilson Lecture at the Association's meeting at Hot Springs, Va; on November 5, 1963, when he will be awarded the Gordon Wilson Medal.

Professor A. J. S. McFadzean has been appointed Tyndale Professor of Professor Max Wintrobe's Department at the University of Utah, Salt Lake City.

COUNCIL

Inter-University Council

C.D. & W. Funds: £10,000 for the medical library and student centre, a conditional grant.

Gifts

The Hong Kong Jockey Club, and the China Medical Board of New York: $513,000 and US$90,000 towards the construction of the medical library and student centre.

The Li Shu Fan Medical Foundation: $6,000 for two specially designed low-volume mechanical pumps for a cancer research project in the Department of Surgery.

Leave of absence

S. M. Bard, University Health Officer, additional leave to enable him to take up a fellowship at the University of Minnesota to study student counselling and guidance methods and to attend a meeting of the American College Health Association in Kansas City from April 23 to 26, 1963.

SENATE

Visiting External Examiners

Professor W. C. W. Nixon of London University College Hospital, for the degree examination in obstetrics and gynaecology in May 1963.

Li Shu Fan Medical Foundation Bursaries and Li Shu Fan Medical Foundation Clinical Scholarship and Bursaries

The Li Shu Fan Medical Foundation has made available sums for the annual award in the Faculty of Medicine of two bursaries of $2,000 each for undergraduates beginning the first year of the pre-clinical curriculum; and a scholarship of $1,500-$5,000; and one or more bursaries of varying value for undergraduates who have completed the First Examination Part 11.

FACULTY OF MEDICINE

Appointments

Joseph Fung Hon-Yin, M.B., B.S. (Hong Kong), M.D. (National Medical College, Shanghai), F.R.C.S. (Edinburgh and England), CH.M. (Liverpool), F.A.C.S.; Lecturer in Surgery, to be Senior Lecturer in Surgery from February 1, 1963.

(Miss) Chan Shuk Tsz, M.B. (National Chung Cheng Medical College), Assistant Lecturer in Anatomy from February 11, 1963.

Wong Sze Pun, M.B., B.S. (Malaya), to be Assistant Lecturer in Obstetrics and Gynaecology for three years from December 11, 1962.

Kenneth K. L. Hui, M.B., B.S. (Hong Kong), F.A.C.S.; to be Honorary Lecturer in Surgery from February 1, 1963.

Tsao Yen Shui, M.B., B.S. (Hong Kong), F.R.C.S. (Edinburgh), to be Honorary Lecturer in Orthopaedic Surgery from January 1, 1963.

Resignation

Kenneth K. L. Hui, Senior Lecturer in Surgery, from January 31, 1963.

Leave of absence

Dr. A. C. L. Hsieh, Senior Lecturer in Physiology, twenty days additional leave to enable him to take up a China Medical Board Fellowship in Atlantic City and a Visiting Professorship at the University of Kentucky during the months April-September 1963.

PUBLICATIONS

Department of Anatomy

K. S. F. Chang, W. D. Low, S. T. Chan, A. Chuang, and K. T. Poon: 'Enlargement of the ulnar nerve behind the medial epicondyle', Anatomy Record Vol. 145, No. 2 (1963).

Department of Obstetrics and Gynaecology

D. P. C. Chan: 'Chorionepithelioma, a study of 41 cases', The British Medical Journal Vol. 11. pp. 953-957 (October 13, 1962).

D. P. C. Chan: 'Treatment of Chrionepithelioma with methotrexate', The British Medical Journal Vol. 11. pp. 957-961 (October 13, 1962).

Department of Surgery

K. L. Hui and Sister M. Gabriel: 'Resection in the treatment of pulmonary tuberculosis in Hong Kong', Tubercle 43, 361 (1962).

* * *

30th July, 1963

PERSONALIA

Professor A. J. S. McFadzean was invited by the Royal Australasian College of Physicians to deliver the Pfizer Lecture in March, 1963, to examine for the College membership and to visit postgraduate centres in Sydney and Melbourne.

Professor A. J. S. McFadzean has been awarded a China Medical Board Fellowship for visits to medical centres in the U.S.A. from September to November 1963.

The degree of Doctor of Philosophy has been conferred on Lai Kai Sum, Assistant Lecturer in Medicine, by the University of Edinburgh. Dr. Lai has also been admitted to membership of the Royal College of Physicians.

Professor F. E. Stock, Pro-Vice-Chancellor, represented the University at the Installation of Viscount Monckton as Chancellor of the University of Sussex.

Professor A. J. S. McFadzean has been invited by the British Council in Bangkok to deliver lectures in Bangkok on his way to Britain in May 1963.

COUNCIL

Gifts, etc.

The Li Shu Fan Medical Foundation: a grant of $110,000 for the establishment of a Lectureship in Paediatrics for three years.

Cheung Chuk San Estate Ltd., Hong Kong: a gift of 96 sets of medical instruments for the Faculty of Medicine.

University Representative

Professor A. J. S. McFadzean has been nominated for re-appointment as a member of the Medical Council of Hong Kong.

SENATE

Li Shu Fan Medical Foundation Prizes

The Li Shu Fan Foundation has made available sums for the establishment of three prizes, each of the value of $200, to be awarded annually to medical students who secure the highest places at the degree examinations in physiology, biochemistry, and pharmacology respectively.

Prizes

The following prizes have been awarded on the results of the M.B., B.S. degree examinations:

First Examination Part II, March 1963

Ho Fook and Chan Kai Ming Prize:
William Yu Yan
Ng Li Hing Prize in anatomy:
Leung Nai Kong
Janet McClure Kilborn Prize in physiology and biochemistry:
(Miss) Wu Pui Chee
Li Shu Fan Medical Foundation Prize in physiology:
William Yu Yan
Li Shu Fan Medical Foundation Prize in biochemistry:
Chang Sze Wang

Second Examination Part II, May 1963

C. P. Fong Medal in pathology:
Lee Sai Kui

Final Examination, May 1963

Anderson Gold Medal:
Faith Wat Chi Suk
Ho Fook and Chan Kai Ming Prize:
Faith Wat Chi Suk
C. P. Fong Medal in medicine:
Simon Cheng Sau Yan and
Faith Wat Chi Suk
Digby Memorial Gold Medal in surgery:
Frank Cheng Chi Yan and
Faith Wat Chi Suk
Gordon King Prize in obstetrics and gynaecology:
Faith Wat Chi Suk
Ho Kam Tong Prize in public health:
Lillian Lee Ching Wo

FACULTY OF MEDICINE

Appointments

Teng Pin Hui, O.B.E., M.B., B.S., (Hong Kong), D.P.H. (London), to the chair of Preventive Medicine for a further year on the expiry of his current appointment on July 1, 1963.

James Blackburn Gibson, M.D. (Edinburgh and Western Reserve), F.R.C.P. (Edinburgh) to the Chair of Pathology from the date of his arrival in Hong Kong.

Tsao Yen-Chow, M.B., B.S. (Hong Kong), D.C.H. (London), M.R.C.P. (London), to the Li Shu Fan Lectureship in Paediatrics from the date of his arrival in Hong Kong.

Joseph H. Boyes, M.D., F.A.C.S., of Los Angeles, to be Honorary Visiting Lecturer in the Department of Orthopaedic Surgery from October to December 1963.

Dr. Peggy Crooke Fry of the University of Nebraska, U.S.A., to be Honorary Research Fellow in the Department of Anatomy from September 1, 1963 to August, 1964.

Resignations

C. C. Wong, Senior Lecturer in Medicine, from January 1, 1964.

D. P. C. Chan, Lecturer in Obstetrics and Gynaecology, from December 13, 1963.

NOTICES

Anthony Paul Chan and Chan Ping Cheung to study for Fellowships of the Royal College of Surgeons.

PUBLICATIONS

Department of Pathology

T. O. T. Ts'o and T. B. Teoh: "Fibromatosis in an infant", Journal of Pathological Bacteriology Vol. 85, No. 2, p.p. 521-523 (April 1963)

CONTRIBUTIONS TO THE MEDICAL SOCIETY BURSARY FUND

SINCE our last issue went to press we have received the following donations to our Bursary Fund:

Dr. Walter C. Allwright	$ 10.00	Dr. Lam Chi Wie	$ 25.00
Dr. K. W. Chaun	$ 35.00	Dr. K. C. Lam	$ 50.00
Dr. Cheung King Ho	$ 13.00	Dr. Li Hon Cheong	$ 10.00
Dr. Cheung Pak Chue	$ 40.00	Dr. Leung Tin Sum	$ 43.00
Dr. George Choa	$ 10.00	Mr. R. Oblitas	$ 8.00
Mr. N. J. Gillanders	$ 10.00	Dr. Tam Sai Kit	$ 50.00
Mr. A. E. P. Grimmo	$ 10.00	Dr. C. F. X. da Roza	$ 10.00
Dr. H. C. Ho	$ 8.00	Dr. Tang Hon Chiu	$ 33.00
Dr. Ho Suk Yee	$100.00	Dr. Y. Y. Tang	$ 50.00
Dr. C. T. Huang	$ 10.00	Dr. Lui Kwai To	$ 20.00
Dr. Kenneth Hui	$ 40.00	Dr. S. M. Boud	$ 20.00
Dr. Kan Lai To	$ 10.00	Dr. P. L. Yue	$ 10.00
Dr. N. P. Karanjia	$ 10.00	Dr. Wong Chik On	$ 10.00
Rev. E. Kvan	$ 20.00		

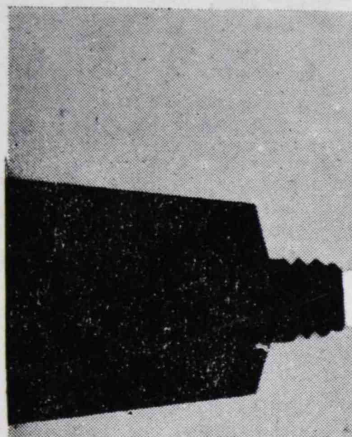
These gifts are most gratefully acknowledged.

Contributions may be sent to the Circulation Manager, Elixir, c/o Department of Physiology, Hong Kong University, Hong Kong. Cheques should be made payable to: Hong Kong University Medical Society Elixir Account.

what's
a dollar
to help
a scholar?

★May we ask
for your help
and interest,
year by year

blot out infection with DEQUADIN



on the skin
DEQUADIN CREAM

0·4 per cent dequalinium chloride in a non-greasy base.
Colourless and non-staining.
Completely covers the majority of skin infections.

in the ear, nose and throat
DEQUADIN PAINT

0·5 per cent dequalinium chloride in propylene glycol.
Widespread action against many conditions of the ear, nose and throat.
Does not stain mucous membrane.

Other Dequadin preparations

Dequadin Lozenges

Dequadin Pessaries

Dequadin Tulle

Dequalone-P

DEQUADIN is a broad-spectrum synthetic bactericidal/fungicidal compound. It inhibits, at low concentration, nearly all the bacteria pathogenic to man; it is active against antibiotic resistant organisms; its activity is not diminished in presence of serum; it is not an antibiotic and does not produce resistant strains.

Manufactured in England by ALLEN & HANBURYS LTD. LONDON E2

Agents for Hong Kong

DANBY & HANCE LTD., *P.O. Box* 2419 405 Edinburgh House, Queens Road Central, HONG KONG

new from GLAXO

first British quadruple vaccine

QUADRILIN

Quadrilin is unique. It gives protection simultaneously against the four most dangerous childhood diseases:

pertussis
diphtheria
tetanus and
poliomyelitis

the name Quadrilin is a Glaxo trade mark

GLAXO

Laboratory and clinical trial[1,2] has confirmed that Quadrilin is a highly potent vaccine that produces an adequate response to all components.

By simplifying immunisation, Quadrilin can help to multiply considerably the number of children being protected in the critical early months of life.

Because of the extremely high potency of the poliomyelitis fraction of Quadrilin (especially the Type 1 component) it can be given as early as three months of age to fit in with the Ministry of Health Schedule P.

In boxes of 1ml single dose ampoules.

1. *Lancet* (1962) **1**, 939 2. *ibid* **2**, 112

GLAXO LABORATORIES LIMITED

Agents for Glaxo Division of Glaxo-Allenburys (Export) Ltd.:-
DODWELL & COMPANY, LIMITED.
P. O. Box 36, Hong Kong. Phone: 35621.

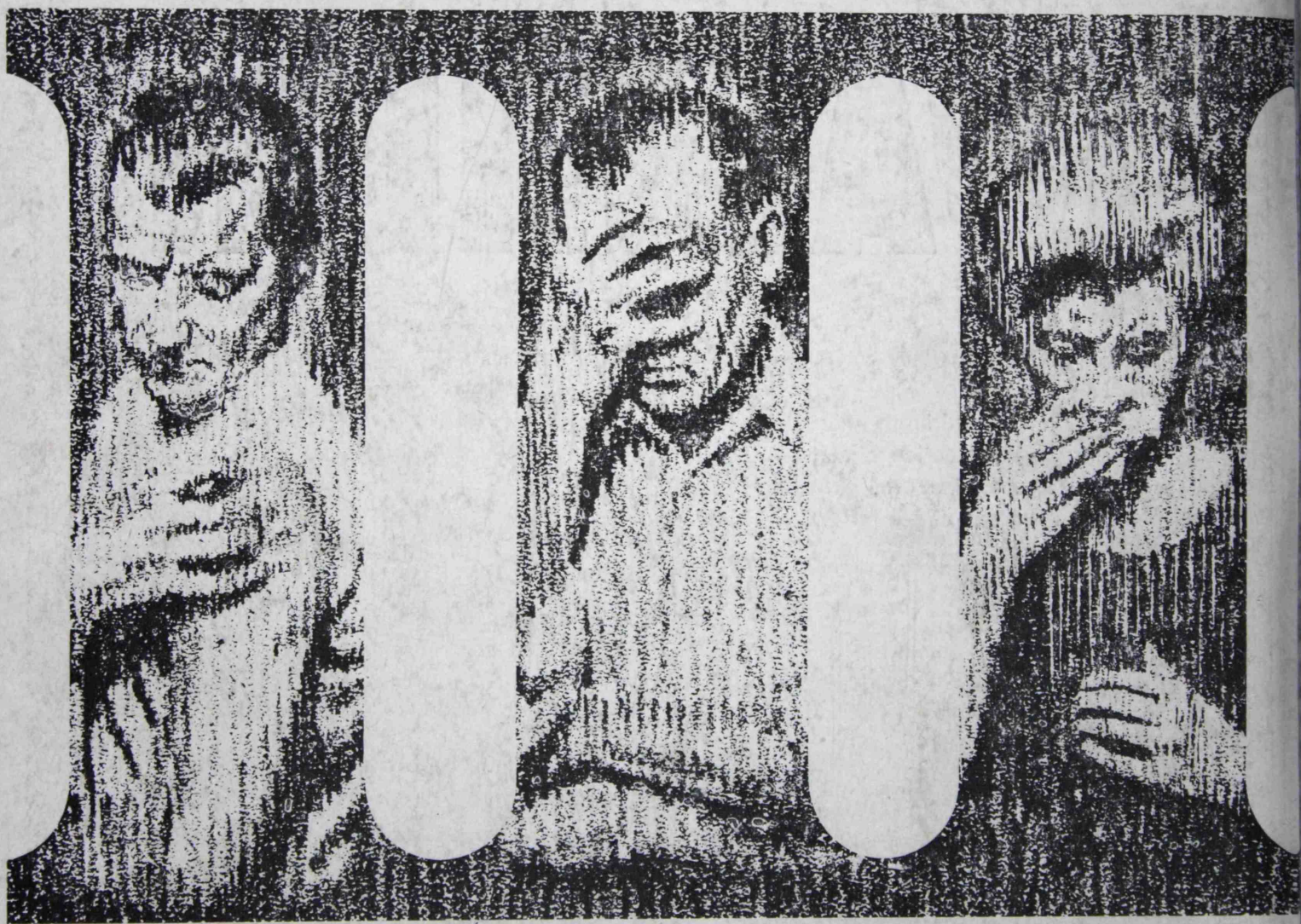
allergy/pruritus/migraine

TABLETS AND SYRUP

TRADEMARK

PERIACTIN

(CYPROHEPTADINE HYDROCHLORIDE)



FOR THE DISTRESS OF THREE COMPLEX CONDITIONS, CONSIDER PERIACTIN, A POTENT ANTIHISTAMINIC AGENT WHICH POSSESSES ANTISEROTONIN PROPERTIES AS WELL.

PERIACTIN is antiallergic. Because it has greater versatility than standard antihistamines, it is often effective in treating allergies which fail to respond to standard antihistamine therapy.

PERIACTIN is antipruritic. Even when no causative agent is discoverable, PERIACTIN is frequently effective.

PERIACTIN is an anti-migraine agent. Reportedly, 70 to 8[illegible] per cent of patients with vascular headaches have responde[illegible] to PERIACTIN therapy. And improvement may occur withi[illegible] an hour or two.

Allergy? Pruritus? Migraine? Consider PERIACTIN.

Note: Detailed information on dosage, administration, indica[illegible] tions, precautions, bibliography and availability will be supplie[illegible] on request.

MSD **MERCK SHARP & DOHME INTERNATIONA**

Division of Merck & Co., Inc., 100 Church Street, New York 7, N.Y., U.S.