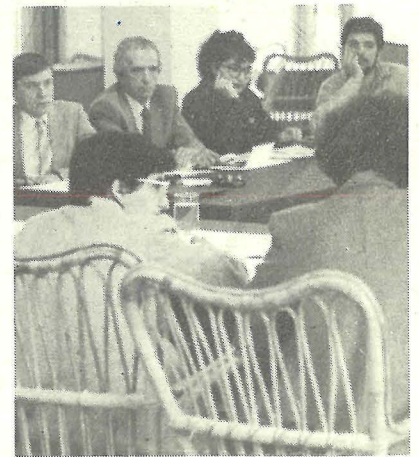
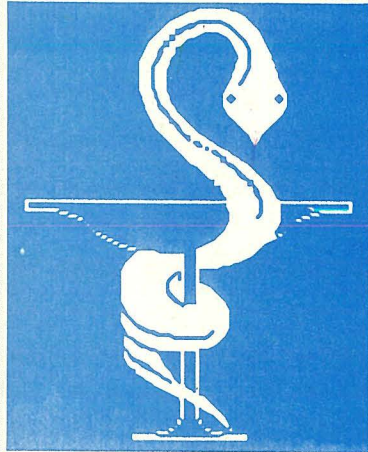
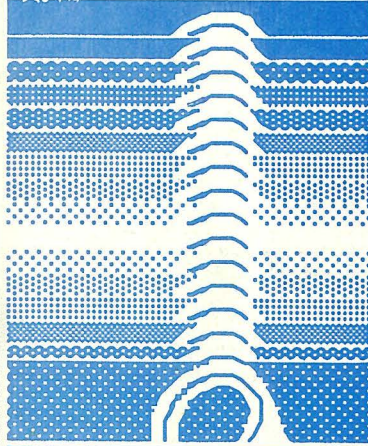




Journal of the  
**CHAMBER of  
PHARMACISTS**

APRIL 1988

NO. 18



PHARMACY EDUCATION IN MALTA  
SEMINAR

**THE**

**PHARMACIST**



# AUGMENTIN

clavulanate-potentiated amoxicillin

## A MAJOR DEVELOPMENT IN ANTIBIOTIC THERAPY

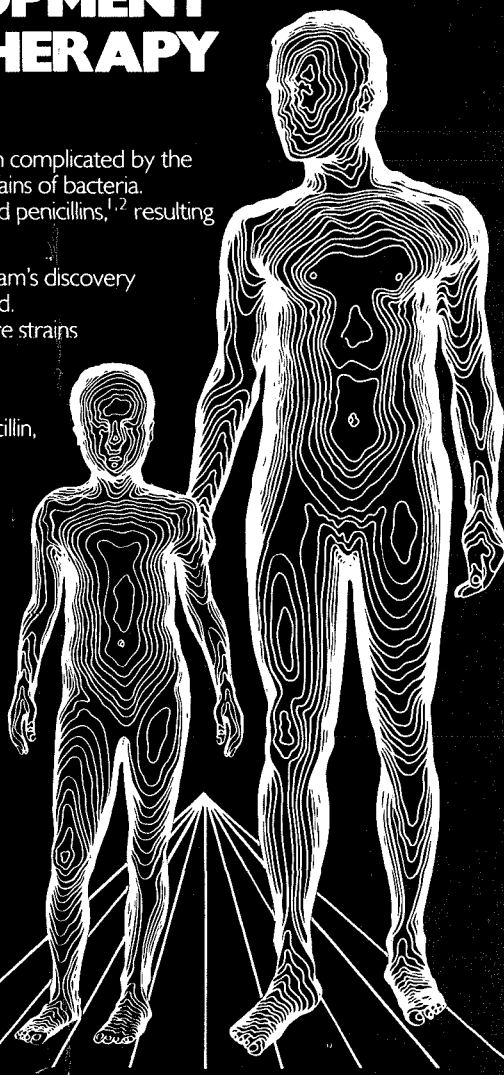
In recent years, the treatment of infection has been complicated by the increasing prevalence of  $\beta$ -lactamase producing strains of bacteria.  $\beta$ -lactamase destroys many oral cephalosporins and penicillins,<sup>1,2</sup> resulting in treatment failure.

AUGMENTIN is the first antibiotic to utilise Beecham's discovery of the powerful  $\beta$ -lactamase inhibitor, clavulanic acid. This neutralises the bacterial defence, bringing more strains and species within the scope of oral therapy.

- **AUGMENTIN – Broader in spectrum** than oral cephalosporins, co-trimoxazole, ampicillin, tetracycline or erythromycin.
- **AUGMENTIN – Outstanding success** against today's infections.

| Adult infections                     | No. of patients assessed | Clinically cured/improved | Clinical success |
|--------------------------------------|--------------------------|---------------------------|------------------|
| Upper respiratory tract <sup>3</sup> | 146                      | 141                       | 97%              |
| Lower respiratory tract <sup>3</sup> | 98                       | 89                        | 91%              |
| Urinary tract <sup>3</sup>           | 175                      | 167                       | 95%              |
| Skin & soft tissue <sup>3,4</sup>    | 81                       | 75                        | 93%              |

| Paediatric infections                  | No. of patients assessed | Clinically cured/improved | Clinical success |
|--|--------------------------|---------------------------|------------------|
| Upper respiratory tract <sup>5,6</sup> | 70                       | 70                        | 100%             |
| Lower respiratory tract <sup>7</sup>   | 28                       | 27                        | 96%              |
| Urinary tract <sup>6,7,8</sup>         | 61                       | 57                        | 93%              |



### PRESCRIBING INFORMATION

**INDICATIONS:** Chest, ear, nose, throat, genito-urinary, skin and soft tissue infections including those caused by  $\beta$ -lactamase producing organisms.

**DOSAGE:** Adults and children over 12 years one AUGMENTIN tablet (375mg) three times daily. Children 7-12 years 10ml AUGMENTIN syrup (312mg) three times daily. Children 2-7 years 5ml AUGMENTIN syrup (156mg) three times daily. Children 9 months-2 years 2.5ml AUGMENTIN syrup (78mg) three times daily. In severe infections these dosages may be doubled. Treatment should not be extended beyond 14 days without review.

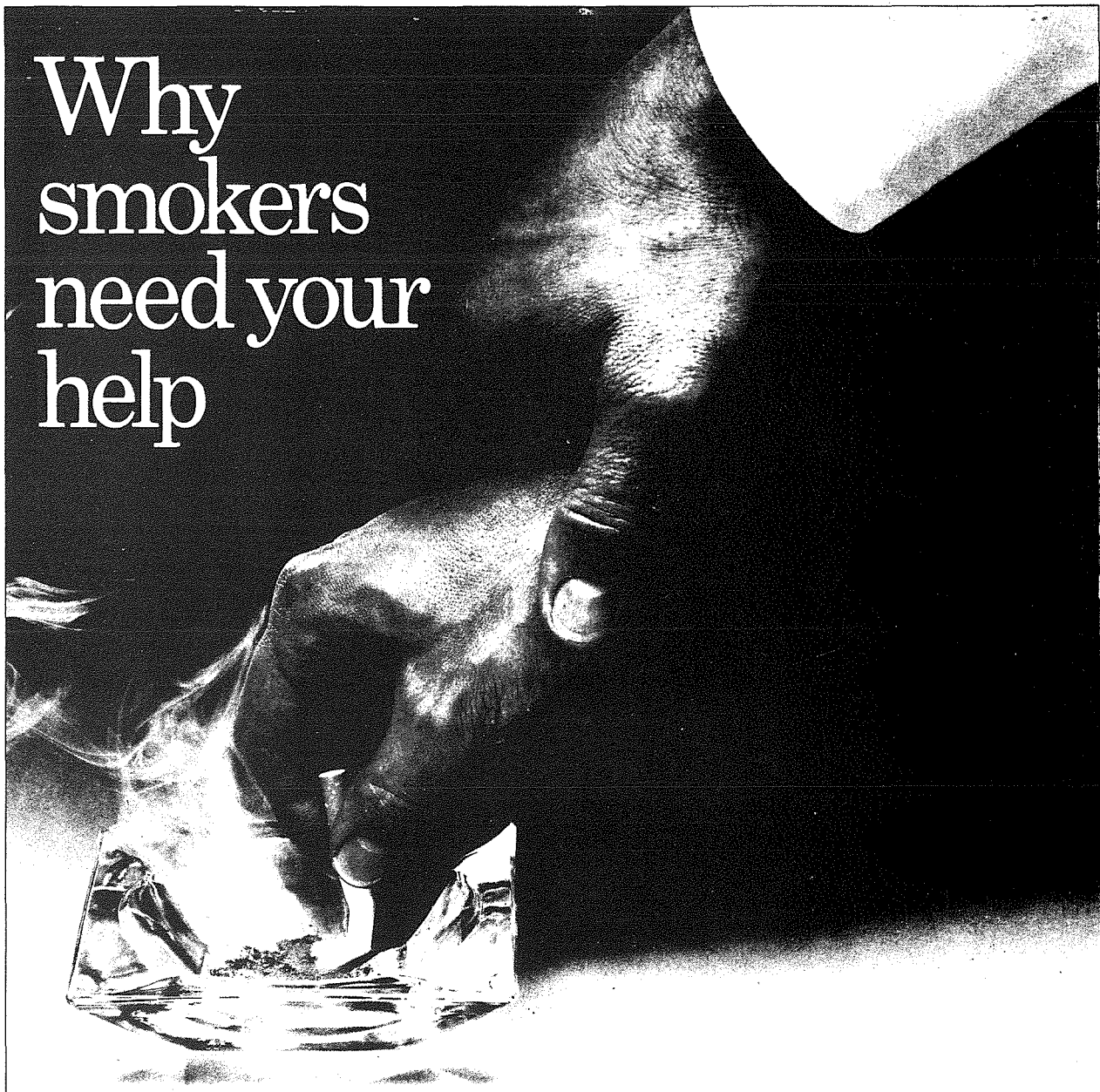
**CONTRA-INDICATION:** Penicillin hypersensitivity. **PRECAUTIONS:** Safety in human pregnancy is yet to be established. Oral dosage need not be reduced in patients with renal impairment unless dialysis is required. **SIDE-EFFECTS:** Uncommon, mainly mild and transitory, eg diarrhoea, indigestion,

nausea, vomiting, candidiasis, urticarial and morbilliform rashes. If gastrointestinal side-effects do occur they may be reduced by taking AUGMENTIN at the start of meals. **PRESENTATIONS:** 375mg AUGMENTIN tablets each containing 250mg amoxicillin (1) and 125mg clavulanic acid. (2) 156.25mg AUGMENTIN syrup. Powder for preparing fruit flavoured syrup. When dispensed each 5ml contains 125mg amoxicillin (1) and 31.25mg clavulanic acid. (2) Not all presentations are available in every country. (1) as the trihydrate, (2) as the potassium salt.



Further information is available from:  
**Beecham Research Laboratories**  
Brentford, Middlesex, England.  
AUGMENTIN and the BRL logo are trademarks.

References 1. Proc. Int. Symp. on AUGMENTIN, Excerpta Med. (1980), ICS 544, 173. 2. Excerpta Med. (1980), ICS 544, 19. 3. Excerpta Med. (1980), ICS 544, 187. 4. Scot. Med. J. (1982), 27, 535. 5. Proc. Europ. Symp. on AUGMENTIN, Excerpta Med. (1982), CCP4, 341. 6. Excerpta Med. (1982), CCP4, 347. 7. Excerpta Med. (1982), CCP4, 325. 8. Excerpta Med. (1982), CCP4, 334.



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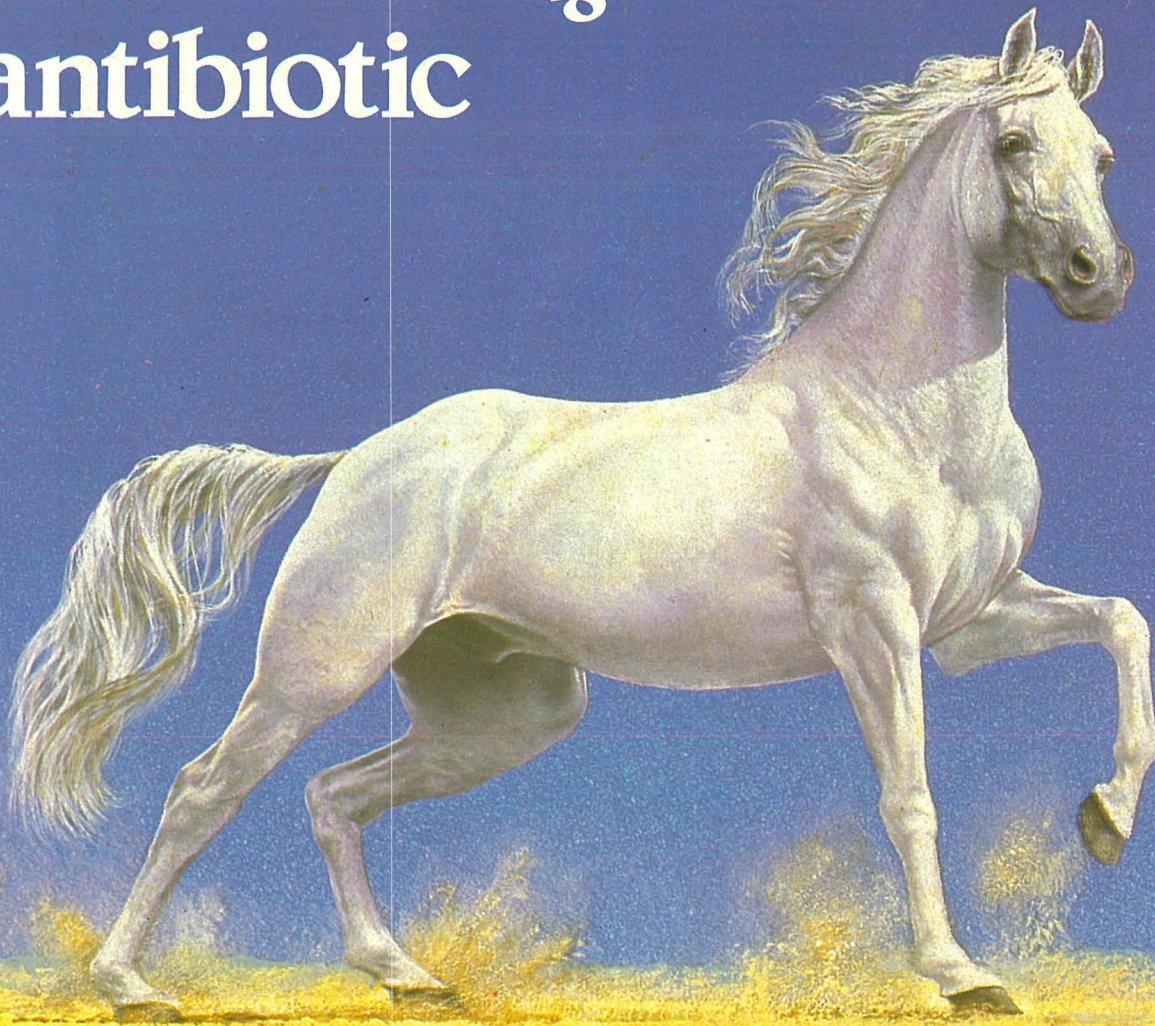
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## The thoroughbred antibiotic



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Respiratory, ENT, genito-urinary and skin and soft tissue infections.

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Children: Oral and injectable – up to 2 years: 62.5mg-125mg every 8 hours. 2-10 years: 125mg-250mg every 8 hours. Based on bodyweight (including neonates) 35-100mg/kg/day. Adults: Oral – 250mg-500mg every 8 hours. Injectable – I.M. 250-500mg every 8 hours or more frequently if necessary. I.V. 500mg-2g every 4-6 hours. (Doses in excess of 1g should be given by infusion over 30 minutes).

#### Presentations

Capsules: maroon and gold capsules, each containing 250mg or 500mg amoxicillin.  
Syrup: 125mg amoxicillin per 5ml in 60ml or 100ml bottles.  
Syrup Forte: 250mg amoxicillin per 5ml in 60ml or 100ml bottles.  
Paediatric drops: 125mg amoxicillin per 1.25ml in 10ml bottles with calibrated dropper.  
Injection: Vials containing 250mg or 500mg amoxicillin.

#### Precautions

Reduced dosage is required in patients with impaired renal function.

#### Contra-indications

Penicillin hypersensitivity.

#### Side-effects

Side-effects, as with other penicillins, are usually of a mild and transitory nature; they may include diarrhoea, indigestion or an occasional rash, which may be either urticarial or erythematous: in either case it is advisable to discontinue treatment.

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# THE PHARMACIST

## JOURNAL OF THE CHAMBER OF PHARMACISTS — TRADE UNION

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### Cover

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## EDITORIAL

# Pharmacy Education Seminar

On January 17th 1988, the Chamber of Pharmacists, concerned about the large number of pharmacy students and the lack of suitable facilities including lack of staff organised a Seminar on Pharmacy Education.

In our opinion the establishment of a Faculty of Pharmacy is a must. The specific aim of the Seminar was to study how best to structure and set up this faculty and furthermore to look at the role this faculty will play in post graduate education.

### Proceedings and Results

The proceedings and results of the day's work are presented in the Seminar report which is being printed in full as a supplement of this issue. To highlight some points:

- Only Pharmacists can impart the right approach to the pharmacy profession
- Foreign expertise is a must at this innovative stage
- Local talent should be utilized to the full including the involvement of practising pharmacists who can act as role models
- Suitably motivated graduates should be given the opportunity to take up post graduate studies and specialize abroad
- Continuing education is an essentially integral part of the professional practice of pharmacy
- At all levels of education, there must be emphasis on the pharmacist developing effective communication skills of both a written and verbal nature.

In severing the link with the Faculty of Medicine and Surgery one must not think that pharmacists are turning their backs on their medical colleagues. Both depend greatly on the attention of the other and the effectiveness of each will increase through appropriate cooperation between them.

### Workshops

The structures and curriculum being proposed were drawn up after a looking at course contents and pharmacy school organisation in some foreign universities and giving due consideration to the needs of our country.

The University has an active role to play in both aspects of continuing and post-graduate education. Specialisation must be fulfilled with joint communication and cooperation with foreign universities. It may be expensive to send students abroad for significant lengths of time, but study periods abroad and the bringing over of specialists to help in the development of certain areas is a possibility which is not impossible to realise.

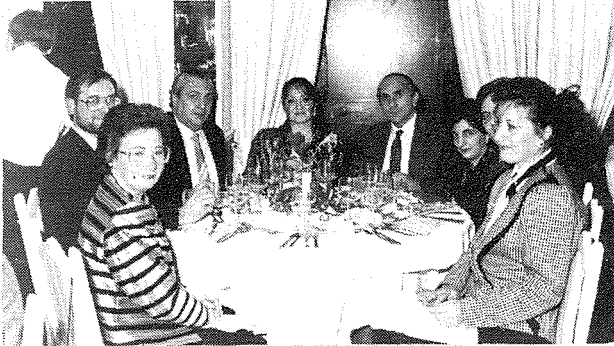
There is a need for more formal continuing education programmes, than those organised by the Chamber, the increase in formality permitting some mode of assessment of the individual.

The Chamber of Pharmacists has already been making various representations on the implementation of the seminar's proposals. We hope that the University and Administrative Authorities concerned will give the necessary cooperation and backing.



# Yuletide Dinner 1987

## THE INVASION OF BACCHUS II



The usually quiet and elegant Bacchus II Restaurant in St. Julians was peacefully but literally invaded by members of the pharmaceutical profession and their guests on Tuesday, 29th December 1987, for the traditional Yuletide dinner organised by the Chamber of Pharmacists.

The merrymaking gathering was hosted by the President, Pharmacist Mrs M.A. Sant Fourrier and the guests included Dr.A. Galea Debono, the Chamber's legal consultant and Mrs Galea Debono.



The atmosphere was one of lighthearted merrymaking with many happy reunions between course colleagues of various academic years.

Each guest was pleasantly surprised to find a gaily wrapped gift on his or her plate; the ladies gifts were the generous donation of pharmacist Mr. R. Fava, who is also the Vice-President of the Chamber of Pharmacists, whilst the gentlemen's gifts were the combined effort of C. Cuschieri & Sons Ltd., A. Gera & Sons Ltd., and last but not least, pharmacist, Mr. F. Formosa a longstanding member of the Chamber.



The first part of the evening was dedicated to the savouring of the delicious cuisine of the Bacchus II chef who rose to the occasion. Pianist Willie Mangion provided the right musical accompaniment with his soft tunes.







The young graduates

After coffee, it was then raffle time, a must at Chamber social activities, with many beautiful gifts being won by everyone present, although some had to sing a song for gift or forfeit . . .

The President then thanked all those present for making the evening such a successful one and all those who donated the lovely gifts for the raffle. She then remarked on the presence of pharmacists Mr. E. Attard Bezzina and Mr. F. Formosa who had been very active on past councils of the Chamber. These two gentlemen had also been the first Editor and Advertising Consultant respectively of the first journal of the then Malta Union of Pharmacists which the Chamber of Pharmacists — Trade Union was commemorating the 20th anniversary during December by a special issue of its Journal 'The Pharmacist'.

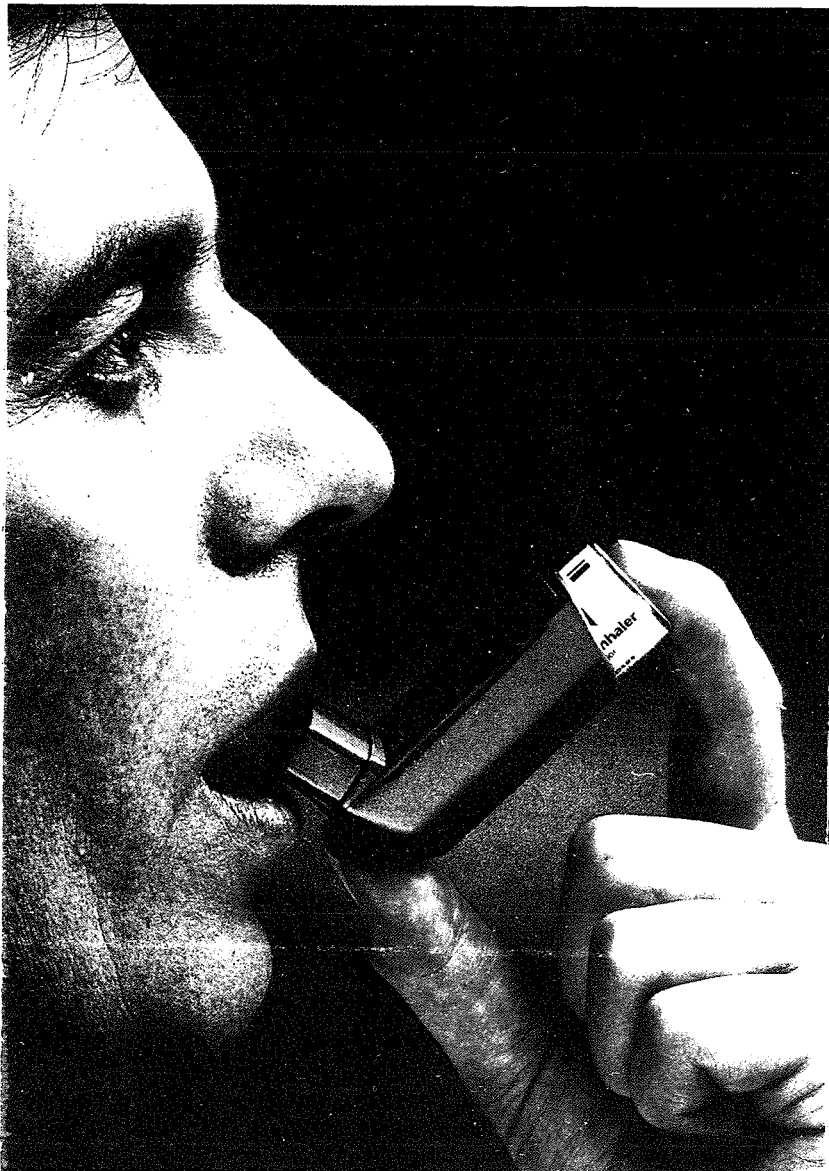


Mrs. Sant Fournier then invited all to join hands and give a hearty rendering of 'Auld Lang Syne' and wished everyone a happy and prosperous 1988 over a glass of champagne, compliments of the Chamber, bringing the evening to a 'sparkling' close!





These gifts were the generous donation of:

- Beauty Culture Centre,
- Fleur de Lys;
- Joseph Cassar Ltd.;
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## NEWS

### Symposium and Pharmaceutical Exhibition

The Chamber of Pharmacists participated in a symposium and pharmaceutical exhibition organised by the Pharmacy Department at the University of Malta between the 12th and 13th March 1988.

This year's symposium was dedicated to the late Mr. A.M. Darmania, past Government Chief Pharmacist, President of the Chamber of Pharmacists and founder president of the Malta Union of Pharmacists.

On Friday 11th March a commemorative evening was held during which the President of the Chamber, Mrs. Sant Fournier, delivered a talk on Mr. Darmania as a Pharmacist. Prof. D'Arcy delivered a lecture entitled 'Clinical Significance of Drug Interaction'.

During the symposium projects carried out by the fourth year pharmacy students were presented.

### Drugs — From Manufacture to Patient

Prof. D'Arcy of the Department of Pharmacy, the Queen's University of Belfast, Northern Ireland, delivered the lecture entitled 'Drugs — From Manufacture to Patient, Today's greater importance of the pharmacist complete supervision', on Friday, 4th March. This lecture will be reported in the next issue.

### 'Medicines and the Developing Nations'

On the occasion of World Health Day, 7th April, a forum entitled 'Medicines and the Developing Nations' was held. The forum was chaired by the President, Mrs. M.A. Sant Fournier, B.Pharm., M.Phil., and the speakers were Mr. Ramon Xuereb, B.Pharm., Technical Manager of Pharmamed Ltd., and Dr. Maria Meilak M.D., D.S.S., F.S. (Wien) who has spent many years working in the field of surgery, medicine and obstetrics in third world countries.

## APPRECIATION:

### Joseph Sciberras, B.Pharm., M.P.

Eric Zammit, B.Pharm.



Our colleague Joe is no more.

Indeed, for a few years he had been the President of the Malta Union of Pharmacists, between 1969-1971, and was Malta's first representative of the C.P.A. attending the first exploratory conference held in London between 15th and 20th June 1969 which eventually established the association. He was the Malta delegate to the F.I.P. council meeting, general assembly and Congress held in September 1970 in Geneva, Switzerland.

I am certain that my colleagues will remember him in their prayers.

Goodbye Joe.

## VIEWPOINT

### Sale and Supply of Syringes to Drug Abusers

Your view. The editorial board invites all readers to express their views on particular topics. We know of pharmacists who keep questioning the introduction of the control cards, others talk in hushed voices about the increasing demands for syringes...

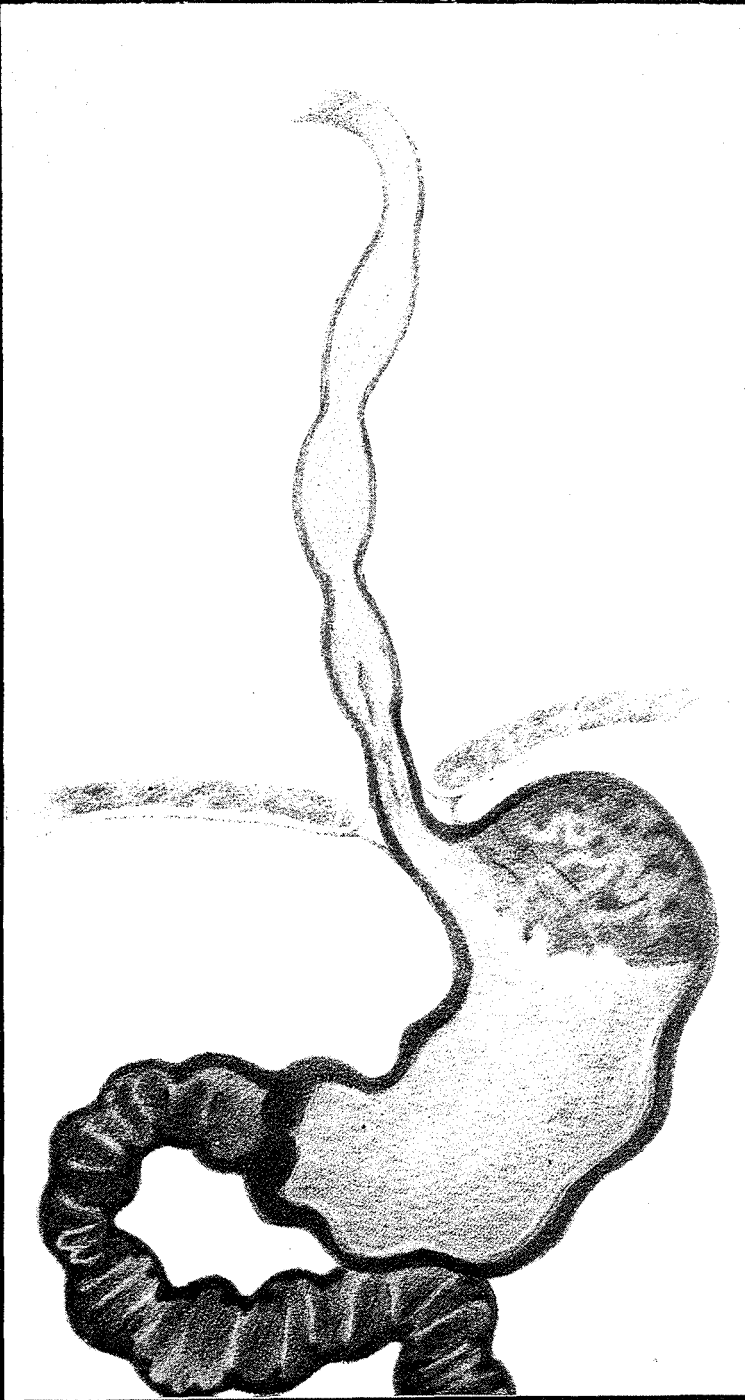
So do pick up your pen and pass on your view. The aim is a dialogue between you... and exchange of ideas.

The first topic for next issue will be 'Sale and Supply of Syringes to Drug Abusers'.

Evidence from Spain, Italy, New York and Edinburgh shows that once Aids is introduced into a community of needle sharing intravenous drug misusers, it spreads rapidly to the majority of members. Because of this risk, should we supply them with syringes?

What is our position from an ethical point of view?

In Amsterdam and in certain parts of U.K. pilot schemes have been set up whereby used syringes and needles are exchanged for new ones on a one for one bases. Should a similar scheme be set up in Malta or will this increase abuse?

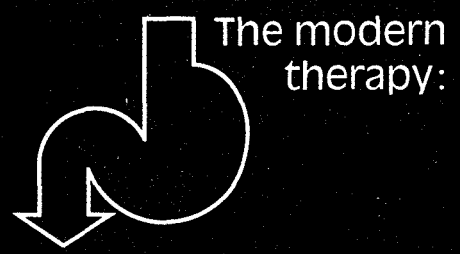


# When gastric motility fails:

Nausea  
Vomiting

Ructus  
Pyrosis  
Postprandial  
burning sensation

Heavy stomach  
Swollen stomach



The modern  
therapy:

*"Most dyspeptic symptoms  
result from altered  
gastric motor activity"*  
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2340 Beerse - Belgium

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## NEW DRUGS

### O F L O X A C I N

Eliana Aquilina, B.Pharm.

Ofloxacin, the quinolone-carboxylic acid derivative is one of a new group of antimicrobial agents — the fluorinated quinolones.

Ofloxacin acts on the protein synthesis and in low concentrations blocks DNA — replication and in high concentrations its transcription.

Ofloxacin possesses an extraordinary broad spectrum antibacterial activity and has a bactericidal effect at low concentrations on both Gram-positive and Gram-negative rods. It is also effective against *Pseudomonas aeruginosa*, obligate anaerobic bacteria and against *Chlamydia*, *Mycoplasma*, *B. fragilis*, *hegionelle* and *Campylobacter*.

As a result of worldwide clinical investigations of patients with various infections, Ofloxacin has been found to cover a wide range of indications i.e. infections of the upper and lower respiratory tract, infections of the genito-urinary tract, sexual organs including gonorrhoea, infections of the abdominal cavity, infections of the skin and soft tissues and post-operative infections.

Studies have shown that the development of resistance is a multiple-step process and is therefore very slow.

Ofloxacin offers the following pharmacokinetic properties: It is almost 100% bioavailable, effective serum concentrations are reached and maintained after twice a day dose regimen, it has a half life of approximately 6 hours, protein binding is as low as 6-10%, renal excretion of the active drug is more than 90%, excellent diffusion into the tissue so that tissue concentration in most organs and body fluids are maintained far above the MIC values of common pathogens involved in such infections.

No evidence of nephrotoxic effects was observed in a clinical pharmacology model. Reduction of the dose or prolongation of the dose interval must be considered at least where renal function is severely impaired.

Ofloxacin is in general well-tolerated with relatively few side effects (gastro-intestinal, CNS and allergic ones). In trials with juvenile animals in high doses Ofloxacin can possible in-

## Book Review

### SMALLPOX AND ITS ERADICATION

F. Fenner, D.A. Henderson, I. Arita, Z. Jezek and I.D. Ladnyi

World Health Organisation, Geneva 1988  
1500 pages, 471 tables, 275 figures, 316 black and white plates and 84 colour plates

The World Health Organisation has issued this publication in connection with the tenth anniversary of the eradication of smallpox.

"Smallpox and its Eradication" recounts the history of one of humanity's worst diseases, moving from ancient times, through the discovery of vaccination, to the spectacular WHO-led campaign that finally vanquished the disease. Authored by experts personally involved in the eradication campaign, the book gives posterity a minutely detailed account of both how the disease once reigned and what was necessary, step by step and country by country, to eliminate the "ancient scourge" once and for all. Virtually everything ever known about the disease, and everything that happened during the global eradication campaign, has been collected and preserved in this richly illustrated account.

For scientists, pharmacists and medical doctors, "Smallpox and its Eradication" will serve as a complete and final review of knowledge on the clinical features, virology, pathology, immunology and epidemiology of variola major and minor. For posterity, "Smallpox and its Eradication" will serve, above all, as an inspiring reminder of the knowledge and efforts that transformed smallpox from a universally dreaded disease to one the world could safely forget.

Copies can be obtained at the regular price of 250 Swiss francs (\$150 U.S. Dollars) from World Health Organisation, Distribution and Sales, Attn: A.C. Wieboldt, 1211 Geneva 27, Switzerland.

fluence the growth of the joint cartilage. Ofloxacin is therefore not recommended to be used in children in growing stage. It is also not advisable to administer Ofloxacin to pregnant and lactating women.

Hoechst, launched Ofloxacin in June 1985 in Germany and has made it available in other European countries, near and Middle East and Africa.

# Pharmacists Against Drug Abuse

A most significant international recognition of the Role of Pharmacists in the use and misuse of psychoactive substances and the prevention of Drug Abuse came in a United Nations Resolution which is being reproduced in full. This resolution was adopted by consensus at the U.N. Commission on narcotic drugs as was accepted by the international conference on Drug Abuse and illicit trafficking held in Vienna in June 1987.

The call for this Resolution came in one of the recommendations of the World Health Organisation working group report on the 'Role of Schools of Pharmacy in the Rational Use of Psychoactive Drugs'. This working group was held in London under the auspices of the WHO Division of Mental Health.

The recommendations of the full Report cover the relevant identified roles of pharmacists, major proposals to enable schools of pharmacy to prepare pharmacists for these roles, proposals for the several roles of schools of pharmacy, and a number of general recommendations.

The green light was finally given last February by the UN's Economic and Social Council, which endorsed the recommendation. The aim of the resolution is to "facilitate action taken by Governments to promote further the relevant activities of schools of pharmacy".

## Identified Role of Pharmacist

The Resolution urges professional pharmacy associations "to request their members to offer patient information. . . ."

The Chamber of Pharmacists in line with other pharmacy associations abroad, aware of the problem of the abuse and misuse of psychotropic drugs, these last years has been working continuously to foster the awareness among Maltese pharmacists of the invaluable role they play as health counsellors and educators in the appropriate and safe use of medicines, and the control of illicit drugs. This is particularly important in respect of psychoactive drugs. Pharmacists differentiate medicine according to their potency, specificity of action, pharmacokinetics, adverse drug reaction and their potential for interaction. The maintenance of patient medication records by pharmacists can contribute substantially to the rational use of medicines.

Pharmacists against Drug Abuse (PADA) is

a sub-committee of the Chamber which has been responsible for organising activities to assist their members in exercising this role. These have included a course with the specific aim of providing them with the most current information on the Drug Addiction, and a forum 'Pharmacists Against Drug Abuse'.

It is the Chamber's belief that Pharmacists and other professionals should collaborate in each other's programmes, accepting the mutual benefit and the benefit to society from the sharing of knowledge and recognition of each other's skills.

With this aim the Chamber organised two fora 'How far is legislation helping us to fight Drug Abuse' and 'Medicines and Drugs on the Job' (A report of which appears in this issue). The first forum was open to Pharmacists and Doctors while the second forum was open to all professionals.

## Education

The Resolution further requests the greater involvement of pharmacy schools to give greater importance to this subject at both the undergraduate and postgraduate levels. The University curriculum needs to include training about drug abuse, drug seeking behaviour and dependence. Students should be taught about the illicit use of these drugs as well as their rational use. These should at an early stage be integrated with other subjects as to provide an appropriate bases.

It is good to note that a thesis for the B.Pharm. degree presented by Joseph Bondin this year dealt with 'A study of Benzodiazepine use in Malta'. Such studies play a significant role in the recognition of trends and forms of misuse, overuse and abuse. Further studies should be encouraged, methodologies should be developed and systems instituted for assessing the prevalence and trends of drug abuse and quantifying new examples of drug misuse and abuse.

## Drugs from Manufacturer to Patient

The importance of the Pharmacist at all levels of the drug distribution chain was emphasised recently in a lecture given by Prof. P.F. D'Arcy, 'Drugs from Manufacture to Patient'. Pharmacists should be involved in the development and drafting of legislation aimed at controlling the manufacture, distribution and dispensing of me-





## United Nations Resolution

# THE ROLE OF PHARMACISTS IN THE PREVENTION OF THE ABUSE OF NARCOTIC DRUGS AND PSYCHOTROPIC SUBSTANCES

Canada, German Democratic Republic, Federal Republic of Germany, Greece, Hungary, Indonesia, Malaysia, Nigeria, Norway, Poland, Sweden, United Kingdom, United States, USSR

### THE COMMISSION ON NARCOTIC DRUGS,

**Considering** the Declaration of the International Conference on Drug Abuse and Trafficking in which the Conference requested that appropriate steps should be taken towards a reduction of demand for narcotics and psychotropic substances, and the training of specific groups of professionals in drug abuse control,

**Noting** the recommendations of an international workshop sponsored by World Health Organization during December 1987 to consider the role of pharmacists in the fight against drug abuse.

**Recognizing** the role of pharmacists in the provision of information on substances scheduled under international treaties in the course of their professional contacts with medical practitioners and with the general public,

**Recognizing further** the opportunities which professional contacts with the general public give towards the early detection of the abuse of unscheduled substances,

1. **Urges** professional pharmacy associations at the national, regional and international levels to request their members to offer patients information on the appropriate and safe use of psychoactive substances and to develop mechanisms which assist their members in fully exercising their role in detecting and preventing injudicious drug use;
2. **Requests** parties to the international drug control treaties and the World Health Organisation to encourage schools of pharmacy and institutions for postgraduate education to give adequate emphasis, within their educational programmes, ensuring that graduates acquire competence and an understanding of the control and rational use of psychoactive substances, including pharmacological aspects, effective clinical use, a comprehensive understanding of the health and socio-economic consequences of misuse and the need for controls at all levels of the drug distribution chain;
3. **Further requests** parties to the international drug control treaties and the World Health Organization to encourage schools of pharmacy to expand, in close collaboration with other medical and scientific institutions and the pharmaceutical industry, their activities related to research into dependence on and abuse of psychoactive substances, and to make use of pharmacists, in view of their role in the community as well as their systematic collection of data on prescription drug use, in studying the trends and forms of misuse, overuse and abuse.

12th February 1988

Vienna, Austria

dicines. It should be further pointed out that any commission or association both Government and non-Government should consult and involve pharmacists whenever they are called upon to resolve matters concerning medicines and health care.

#### A collective effort

A number of sectors and associations in the Maltese society are already working against drug abuse, dealing with the various aspects of prevention, awareness and control.

It is imperative that these sectors came together under one national commission which will be able to coordinate the various activities.

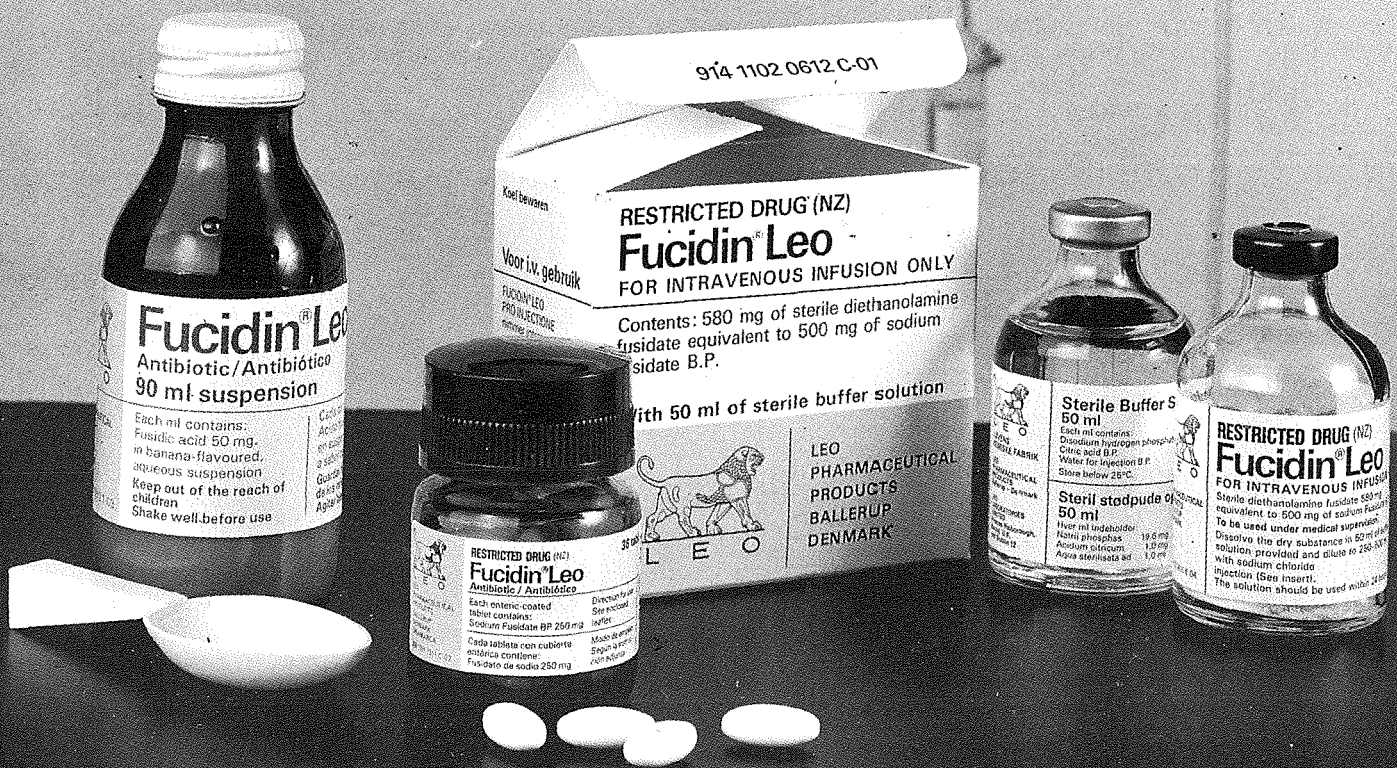
This resolution was signed by 14 countries. In our opinion Malta should be signatory to such a resolution.

#### References:

- Commonwealth Pharmaceutical Association, Newsletter, No. 10, February 1988.
- Report of the WHO Working Group on the Role of Schools of Pharmacy in the Rational Use of Psychoactive Drugs.

# Combine your operation with FUCIDIN<sup>®</sup> penetration

fusidic acid



#### COMPOSITION

1 tablet contains sodium fusidate 250 mg  
Oral suspension contains fusidic acid 50 mg/ml  
Intravenous infusion contains diethanolamine fusidate 580 mg/vial (500 mg sodium fusidate)

#### INDICATIONS

Staphylococcal infections like e.g. osteomyelitis, septicaemia, endocarditis, pneumonia, cellulitis, cystic fibrosis, surgical and traumatic wound infections.

#### DOSAGE

Oral treatment:  
Adults: 2 tablets or 15 ml suspension 3 times daily.  
Children: 1 ml suspension per kg bodyweight in 3-4 divided doses.

Full information available on request

#### Intravenous infusion:

Adults: 1 vial 3 times daily (not more than 4 vials/24 h).  
Children: 20 mg/kg/day divided into 3 doses.  
Dilute to 250-500 ml and infuse slowly (2-4 hours) into a wide-bore vein. Must never be given i.m. or s.c. The infusion concentrate must never be injected undiluted.

#### PRECAUTIONS

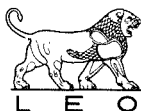
Mainly because of biliary excretion, periodic liver function tests in patients with liver dysfunction are recommended during Fucidin therapy. Though kernicterus has not been observed, care should be taken during Fucidin treatment of preterm, jaundiced, acidotic or seriously ill neonates.

#### PREGNANCY AND LACTATION

No teratogenic effects have been observed. Fucidin passes the placenta and implies a theoretical risk of kernicterus in third trimester. Fucidin can be detected in the milk in negligible concentrations.

#### ADVERSE REACTIONS

Gastro-intestinal disturbances when given orally can normally be avoided by giving Fucidin with meals. Reversible jaundice has been reported in patients receiving intravenous Fucidin in high doses.



**Leo Pharmaceutical Products – Denmark**

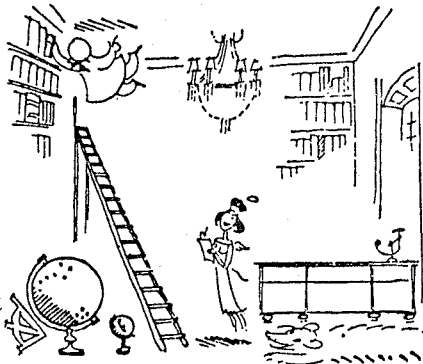
Regional office: Leo Pharmaceutical Products Sarath Ltd.  
224, Syngrou Avenue, GR - 176 72 Kallithea  
Athens, Greece.



# On Omniscience, Grooms . . . and Health for All

Mary Ann Felice Sant Fournier, B.Pharm., M.Phil.

Knowing what  
thou knowest not  
is in a rime  
omniscience,



(Omniscience, A grook by Piet Hein)

No, I am not putting a claim to omniscience but rather apologising to Piet Hein for never having had the remotest idea of what a grook is.

I never knew what I was missing until last Christmastime when I received a handsome red pocket book.

At first I was confused at the word 'Grooms' but when I went over the contents, -short rhymed epigrammes with a message, both pertinent, witty and wise accompanied by Hein's own illustrations. I was intrigued by these short aphoristic statements that appear self-evident as soon as they have been formulated.

## Piet Hein — a full blown, developed genius

But, who is Piet Hein, you may well ask. Piet Hein is a Danish Scientist and writer who studied and worked at the Niels Bohr Institute in Copenhagen.

But as he felt that science could be for one or two things, a university career on technology, Hein entered the field of invention, based on scientific knowledge; during the occupation of Denmark in 1940, he went underground and invented the short, aphoristic poem — the grook. He has now written over seven thousand of these grooks which are related to the old Nordic Havamal poem (AD 850-1050).

For many years he was in correspondence with Albert Einstein, who, intrigued by Piet Hein's mathematically based but eventually simple puzzles, spread the word to universities and from there on to the general public. Indeed, his unorthodox probings have intrigued some of the outstanding minds of our time. His grooks often open a small window on a large world.

## A Grook about Health

Some weeks ago, I was reading 'The Times' and there in front of my incredulous eyes, I saw the title to a short article 'A Grook about Health'. Then these grooks are really not for the chosen few, I said to myself. Indeed Piet Hein being deeply concerned about the importance of health for human development has written a grook to mark the 40th Anniversary of the World Health Organisation (WHO) which will be celebrated on April 7, 1988.

The birthday gift to WHO, entitled 'Health for All' reads as follows:

Mankind's true  
Health must come  
With the new Millenium,  
Heed the call  
For common wealth:  
Health for All  
All for Health

Piet Hein has agreed that his poem be freely used for non-commercial purposes and WHO will provide translations into its official languages: Arabic, Chinese, French, Russian and Spanish.

## World Health Day — 7th April 1988

World Health Day — April 7, 1988 is an occasion to commemorate the fortieth anniversary of WHO. The general theme decided upon by the Director General Dr. Halfden Mahler is "Health for All — All for Health".

The implication of this slogan is that although an optimum state of health is a human right we all have individual and collective responsibilities for maintaining health through healthy lifestyles, the maintenance of a healthy environment and the judicious use of appropriate health technologies available to all.

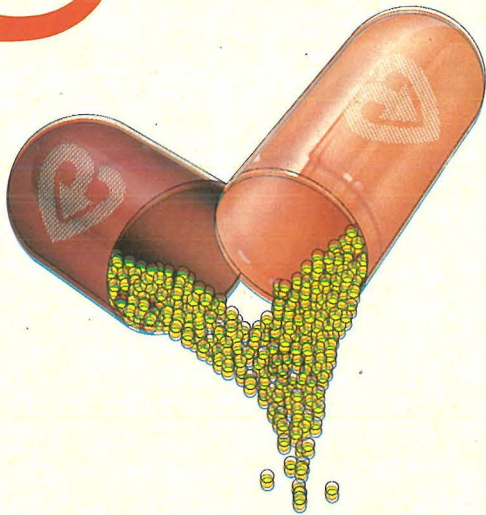
Efforts will be made **throughout 1988** to promote a deeper understanding for the need for health development, for equity in health and for the vital role of WHO in international health. In the words of Dr. Mahler, the anniversary should, "bring people together in a gigantic manifestation of worldwide solidarity". The celebration of the anniversary should not be a one-

(Continued on page 19)



# Coracten

## Why choose Coracten in hypertension?




- Coracten is nifedipine – an important  $\text{Ca}^{++}$  channel blocker, now in a b.i.d. dosage form for sustained control of hypertension.
- Coracten provides smooth and sustained antihypertensive effects. It works rapidly to reduce blood pressure within a few hours.
- Coracten can provide effective control in all grades of hypertension.
- Coracten provides continuing and reliable activity with the exclusive Spansule sustained release system.
- Coracten is suitable for use in both young and old hypertensive patients (see prescribing information).
- Coracten is especially suited to patients with concomitant hypertension and angina.
- Coracten can simplify your prescribing in hypertension.

## Coracten clears the way through therapeutic confusion

### Prescribing Information

#### Presentation

Opaque light brown capsules, opaque red capped, cap and body printed  containing off-white pellets. Each capsule contains 20mg nifedipine in a sustained release formulation which provides a prolonged therapeutic effect.

#### Uses: mode of action

Nifedipine is a potent calcium channel blocker whose main action is to produce relaxation of arterial smooth muscle both in the coronary and peripheral circulation. The peripheral action leads to a decrease in cardiac work load through vasodilatation and a resultant reduction in myocardial oxygen demand. Coronary vasodilatation improves myocardial perfusion and reduces coronary artery spasm. Nifedipine has no therapeutic antiarrhythmic effect.

#### Indications

Nifedipine is indicated in the treatment and prophylaxis of angina pectoris (exercise induced angina, angina at rest including Prinzmetal angina and unstable angina, and angina following myocardial infarction [see contra-indication below]), and in the treatment of hypertension.

#### Dosage and administration

**Adults only:** In angina pectoris: Normally one capsule every 12 hours. If necessary, the dosage may be increased to 2 capsules every 12 hours.

In hypertension: Normally one capsule twice a day. If necessary the dosage may be increased to two capsules twice a day.

The capsules should be swallowed whole with a little fluid after meals.

#### Contra-indications, warnings etc.

**Contra-indications:** Cardiovascular shock, pregnancy and lactation, myocardial infarction less than 8 days prior to commencing therapy.

**Cautions:** Use with caution in patients with systolic blood pressure of less than 90mmHg, in patients with poor cardiac reserve: in diabetic patients, as they may require adjustment of their diabetic therapy; and in dialysis patients with malignant hypertension and irreversible renal failure with hypovolaemia, since a significant drop in blood pressure may occur due to the vasodilator effects of nifedipine.

Since nifedipine has no beta-adrenoceptor blocking activity it therefore gives no protection against the dangers of abrupt withdrawal.

Withdrawal of any previously prescribed beta-blockers should be gradual, preferably over 8 to 10 days. Nifedipine may be used in combination with beta-blockers and other antihypertensive agents, but the possibility of an additive effect resulting in postural hypotension must be borne in mind.

Ischaemic pain has been reported in a small proportion of patients within 30 minutes of the introduction of nifedipine therapy. Patients experiencing this effect should consult their doctor.

Patients who drive or operate machinery should be warned of the possibility of drowsiness.

Increased plasma levels of nifedipine have been reported during concomitant cimetidine and ranitidine administration, but no clinical effects, to date, have been shown.

**Use in pregnancy and lactation:** See Contra-indications.

**Adverse reactions:** Side effects are generally mild and transient and usually occur at the start of treatment. They include: headache, flushing (and usually at higher dosages), nausea, dizziness, lethargy, skin reactions, paraesthesia, hypotension, palpitation, tachycardia and dependent oedema. There have been very rare reports of hepatitis and of reversible gingival hyperplasia.

#### Overdosage

Signs and symptoms may include bradycardia and hypotension. Treatment consists of the induction of vomiting and/or gastric lavage together with supportive and symptomatic measures including, where appropriate, the use of atropine and noradrenaline. Intravenous calcium gluconate with metaraminol (a potent sympathomimetic agent) may be of benefit.

#### Pharmaceutical precautions

Store in a cool dry place AND PROTECT FROM LIGHT.

'Coracten' and 'Spansule' are trade marks.

#### References

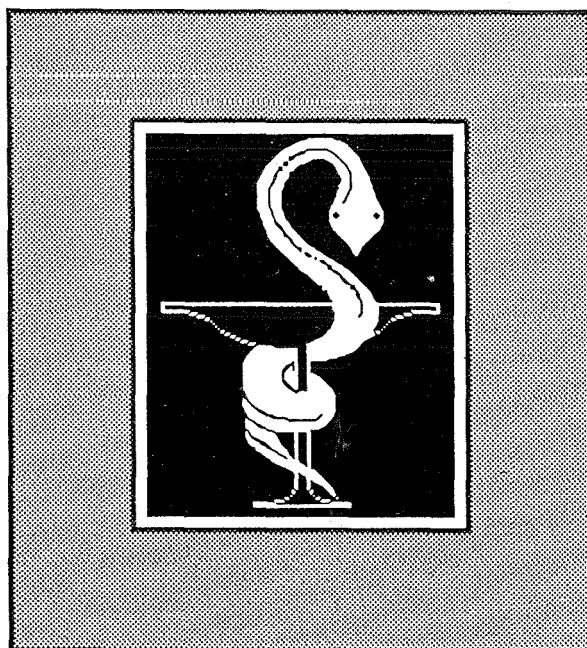
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### SK&F

United Kingdom Overseas Group  
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Welwyn Garden City, Hertfordshire, England AL7 1EY







**CHAMBER OF PHARMACISTS  
PHARMACY EDUCATION IN MALTA  
SEMINAR**

**January 17th, 1988**

**Federation of Professional Bodies, Paceville**

The Chamber of Pharmacists organised a successful seminar entitled "Pharmacy Education in Malta" on Sunday 17th January at the Federation of Professional Bodies Paceville.

The Participants included those involved in Pharmacy undergraduates teaching, Dept. of Pharmacy, University of Malta, Hospital Pharmacists, Community Pharmacists, Student Representatives, invited guests and the members of the council of the Chamber of Pharmacists.

This initiative reflects the Chamber's concern about current Pharmacy Education in Malta particularly after the last high student intake.

The seminar was opened by Pharmacist Mrs. M.A. Sant Fournier, B.Pharm., M.Phil., President of the Chamber of Pharmacists, who then proceeded to deliver the keynote address entitled "Pharmacy Education in Malta".

The Participants then discussed the various proposals on:

- a. Establishment of a Faculty of Pharmacy,
- b. Curriculum,
- c. Continuing Education,
- d. Post Graduate Education.

A report of the proceedings and proposals (which is being reproduced in full) was drawn at the end of the day and this was presented to the Minister of Education, The Hon. Dr. Ugo Mifsud Bonnici, B.A., LL.D., M.P., who brought the Seminar to a close.

## PHARMACY EDUCATION IN MALTA

Keynote address by the President of the Chamber of Pharmacists,  
Mrs. M.A. Sant Fournier, B.Pharm., M.Phil.



### Historical Notes

It is needless to say that my Council is aware of the significance that a sound and up-to-date Pharmacy degree course has on the future of the profession of pharmacy and its members and the community they serve.

Throughout the years, the Councils of the Chamber of Pharmacists have always been concerned at the standard of Pharmacy Education at our University. Indeed, thirty years ago, the University appointed a committee to formulate proposals in regard to the reorganization of the course leading to the B.Pharm. degree. For the first time the Chamber was directly represented on such a committee and made suggestions designed to improve the course. In suggesting improvements the Chamber was then, as now, prompted by the need of producing better qualified pharmacists for the local exercise of the profession as well as the creation of the conditions that would enable the licensing authorities to enter into reciprocity negotiations with their counterparts in the U.K. and Commonwealth, thus producing a wider field of opportunity for pharmacists and for much needed postgraduate specialization abroad.

A deficiency which was pointed out at the time and which was felt to be stifling progress then, as now, was the absence of lecturers who were suitably trained, qualified, practising pharmacists.

A decade later, it was the Council of the Chamber of Pharmacists that had striven to par-

ry a grave blow at the profession after the 'Heatherington Commission' had recommended the relegation of the Course of Pharmacy to the polytechnic, to which it was completely alien.

The University had then proposed a three or four term course open to B.Sc. graduates. The Chamber had opposed both these suggestions and succeeded to avert disaster. It was then suggested to hold a two-year diploma course which whilst far from satisfactory this was considered at the time to be the least of three evils.

In 1970, the Councils of the Chamber and Union of Pharmacists, after long discussions with the University authorities succeeded in making arrangements for the diploma course students to read for a degree and to ascertain that the future Course of Pharmacy would be a high standard degree course.

Representations were also made requesting that Pharmacy students be provided with better equipment; well qualified teaching staff; proper laboratories; a well-stocked library and for more funds to be allocated to the Course of Pharmacy. In the meantime, a call for applications to fill the Chair of Pharmacy had been issued. Perhaps the School of Pharmacy seemed then a tangible reality.

Eventually and for the first time in the history of pharmacy education in Malta, B.Pharm. graduates obtaining first or second class honours in their final examination had the possibility of furthering their studies by reading for the Master of Philosophy (M.Phil.) and Doctor of Philosophy (Ph.D.) degrees.



### Cul-de-Sac

With the reforms in tertiary education of 1978, the course of Pharmacy came to a cul-de-sac; the student-worker scheme was introduced and with it came several serious problems with which the students were faced.

### Restructuring of Pharmacy Course

Following a meeting held on the 23rd October 1980 between the then Ministers of Education and Health, and a delegation of the Chamber, it was decided to appoint a committee to make recommendations on how the B.Pharm. course could be restructured and organised to make it viable and in line with the country's needs, within the student-worker scheme in tertiary education. The Chamber was represented on this committee and took an active part in its work. A report was presented to the Minister of Education on the 25th October 1980 and a Discussion paper entitled 'The Restructuring of the Pharmacy Degree Course' was published in February 1981 under the auspices of the Ministry of Education and the Commission for the Development of Higher Education.

Because of the then existent 'to be or not to be' problem of the B.Pharm. course, it was proposed to restructure the B.Pharm. course into two sections; a Foundation course and an Orientation course which would be streamed into two overlapping categories — pharmacy and technology (B.Pharm.Tech.). The B.Pharm.Tech. course was accepted as a necessary evil in order to salvage the situation.

Indeed the Chamber has already made representations with the new administration on the phasing out of the B.Pharm.Tech. course which should be a B.Sc. and has been assured that this will in fact be the case.

### Student-Worker Scheme in Pharmacy

A detailed analysis of the student-worker scheme in pharmacy was presented in the Chamber's report of June 1986 and the shortcomings together with the Chamber's recommendations were outlined again in the Memorandum of April 1987 which was presented to the new administration last May, although various representations on the plight of pharmacy students and the course in general were also made throughout the last ten years.

Briefly the student-workers suffered

- i. a reduction in the number of contact hours;
- ii. a number of students found themselves do-

ing work which was unrelated to their studies;

- iii. the five-and-a-half month work-phase was too long a period to be out of touch with study;
- iv. there was a waste of the already very limited University resources because of repetition of academic lectures, tutorials, etc.
- v. there was a lack of supervision at work.

Since 1978, the pharmacy department has been without a Head and there has been a continuous stream of Acting Heads with a variety of qualifications, including some who had no previous connection with pharmacy.



**"For years now the Pharmacy Dept. has been without a Head..."**

### The Turning Point

The University is the breeding ground for new pharmacists. Only pharmacists can impart the right approach to the pharmacy profession.

The Chamber has been insisting all along that a Head be appointed and that this person should be a pharmacist with suitable academic qualifications. We are all aware of the alarming deficiencies still prevailing in the present course of pharmacy and we therefore feel that if the course were entrusted to pharmacists who are suitably qualified these would be in a naturally better position to keep up with the progress of the profession. We are not looking for half-measures which are unacceptable at this stage but we are striving for complete reorganisation of the Pharmacy Education system in Malta and this in the imminent future. The University is responsible for the academic training as well as the professional formation of the students. In view of this it is highly questionable whether pharmacy should still be but a department within the Faculty of Medicine and Surgery.

### The Case for the Establishment of the Faculty of Pharmacy

For years now, the education of our pharmacy students has been in the hands of persons who although may have made a significant contribution to pharmacy, the department was incapable of acting as a centre of pharmaceutical expertise and as a focus of professional activities. Furthermore it was not possible to impart the necessary sense of direction to the students.

In most parts of the civilized world the pharmacy profession has for a long time established its exclusive right to regulate the teaching and education of its members.

Following further intake last October, the students required to populate a Faculty are certainly not lacking with four academic courses running concurrently to a total of 140 students, an all time record; all this is grossly disproportionate to the present staff complement with no head or acting head, one full time senior lecturer and several part-timers and extraordinary lecturers, depending on availability.

One cannot but look on with envy at the Dental Association which last October commemorated the 50th Anniversary of the granting of the Diploma of Dental Surgery to the first course of Dental Surgery at the University of Malta. In 1933 the Diploma of Dental Surgery was granted recognition by the General Medical Council of the United Kingdom. The Faculty of Dental Surgery was established in 1954. Eleven years previously the Chair of Dental Surgery was established.

We are convinced that all present agree on the immediate establishment of the Faculty of Pharmacy. The Chamber has already made its representations with the competent authorities on this matter.

Let us now together work to therefore lay down the foundations for a Faculty of Pharmacy bringing to an end the situation whereby Pharmacy has been an appendage of the Faculty of Medicine and Surgery for so long. How will the new Faculty of Pharmacy be subdivided? Will it be based on the traditional Pharmaceutical Sciences viz: Pharmacognosy, Pharmaceutical Chemistry, Pharmacology and Pharmaceutics or will there be a breakaway from the constraints which this traditional organization imposes so that the course will be more relevant to the changing needs of tomorrow's pharmacists? Which would these sub-disciplines be?

How will the new Faculty of Pharmacy be

### Summary of the Policy of The Chamber of Pharmacists on Pharmacy Education

1. A Faculty of Pharmacy should be established in the immediate future.
2. The Head of the Pharmacy Faculty should be a pharmacist with suitable academic qualifications. Only Pharmacists can impart the right professional approach and identity.
3. The Course Curriculum must be relevant to today's needs of pharmacy.
4. A lifelong process of continuing education is a must. These continuing education programmes should be implemented jointly by the University and Chamber of Pharmacists.

staffed? We feel that foreign expertise is a must at this innovative stage. But we also advocate full use of local talent including the involvement of practising pharmacists who can act as role models. In this way the pharmacy students will be introduced to as many aspects of modern pharmacy as possible so that subsequent exposure of new graduates to the real world of pharmacy does not come to them as a shock.

Local talent should be utilized to the full in this venture and those suitably motivated should be given all chances to proceed to take up post-graduate studies abroad. Undoubtedly the local need for specialization is great, especially in such fields as Geriatric pharmacy, clinical pharmacy, Drug Information, Psychosocial Pharmacy, Drug Distribution; but one must not lose sight of the important role of the community pharmacist in healthcare today. By ensuring the immediate specialization of pharmacists the staffing of the new faculty by local teachers is assured in the near future. Of course, visiting foreign experts in as many of the fields of modern pharmacy as possible should be also encouraged and should be part of a well planned schedule.

In severing the link with the Faculty of Medicine and Surgery one must not think that pharmacists are turning their backs on their medical colleagues. This could not be further from the truth.

We are more than ever conscious of the fact that the pharmacist-doctor relationship is of utmost importance. Both are major deliverers of healthcare and the services that they provide overlap. Both depend greatly on the activities of the other and the effectiveness of each will increase through appropriate cooperation between them. In order that this cooperation be well rooted in both pharmacy and medical graduates it may be of mutual advantage to hold joint training sessions in aspects of healthcare, for e.g. as in a U.S. Pharmacy School, where students are introduced to clinical diagnosis and therapy through a basic pharmacology course which enables them to apply their knowledge of biochemistry, physiology and pharmacology toward rational approaches to disease therapy.

In this way the presence of the pharmacist say, on the hospital ward as a member of the healthcare group is later taken as a natural sequel and the pharmacist will not lack the confidence in asserting information and advice concerned with his primary professional role to members of the public and other professionals especially medical colleagues.

#### **Nuffield Report**

In line with the training of community pharmacists who are patient-oriented and whose prime role is counselling on healthcare matters including the proper use of drugs, the Nuffield report recommends that the pharmacists' scientific education should be supplemented by skills relevant to their wider role e.g. communication skills and behavioural sciences. We are in agreement and are already working on a project to include such an exercise in our continuing education programme in future. The teaching of these skills should not ideally be dependent on a specific instruction course but the whole education process at university level should be essentially one that involves intercommunication between teacher and student. This necessitates full timers. Teaching methods should be concentrated more on discussion and development of these communication skills. However, due to pharmacy's neglect of the social context, the behavioural sciences must form an integral part of the academic course. In passing I wish to mention that the Nuffield report originated at the British Pharmaceutical Conference in 1981 when the President of the Pharmaceutical Society of Great Britain publicly expressed to the then Minister of Health of that country the need to de-

fine the future role of the community pharmacist.

Its overall conclusion was "that the pharmacist has a distinctive role and an indispensable contribution to make to health care which is capable of further development. Whenever drugs form part of treatment it is likely that both patient and NHS would benefit from a more active involvement of the pharmacist." With the local introduction of a Health Scheme whereby patients will be able to go to the pharmacist of their choice for their needs the pharmacist must be able to give advice for minor ailments and recommend medicines and therefore must be equipped by proper training to give his specialized service.

#### **Curriculum**

The pharmacy course must therefore be relevant to these needs. Pharmacy education is or should be a process of instilling theory by demonstrating its practical relevance throughout the whole of the course. Relevance is an essential aid to motivation and also to comprehension. The principal purpose of the degree course is to provide the scientific knowledge and approach to problem-solving (including the development of basic skills) necessary to enable a pharmacist to cope with the changing demands that will arise in the course of a career spanning say forty years. The science must be applied in the sense that it will be relevant to pharmacy; and it must relate to all aspects of the work, behavioural as well as pharmaceutical. It must be constantly brought home to students that their future role will be that of a scientist and a professional, equally, the relevance of what is taught to that role must constantly be demonstrated.

The Pharmacy curriculum presently includes a high dose of inorganic chemistry. Whilst conscious of the importance of the basic sciences at undergraduate level, perhaps a potential exists for pruning in the area of chemistry. The time saved in this way should be devoted to those areas of science which would improve pharmacists' capacity to perform their advisory role in the community and their clinical role in hospitals e.g. therapeutics and pathology.

Problem-solving should assume a greater role in the undergraduate course. Basic statistical concepts would help students learn about such things as bias, biological variation, sampling.

It would be advantageous if the traditional groupings under which pharmacy is taught be



# "After only one week of treatment with 'Tagamet' almost all patients were free of pain."

Panijel M (1985) Zeitschrift für Allgemeinmedizin; 61: 952-55

## Expected in ulcer therapy; but this study used 'Tagamet' in gastritis

When healing ulcers, you can expect high standards of efficacy and reliability from 'Tagamet'. You can achieve results that are 'close to the ideal'.

Now, in gastritis the well documented acid controlling properties of 'Tagamet' are proving to be effective. Particularly in patients who need more than the simple acid neutralisation offered by antacids.

The ideal gastritis therapy would offer; relief of pain and discomfort in all patients, rapid onset of action and a well tolerated therapy. In a comparative study, 'Tagamet' was found to be superior to antacids, providing 100% pain and heartburn relief after two weeks.<sup>1</sup>

'Tagamet' controls acid secretion at its source. This means effective relief of symptoms, a simple dosage and convenience that antacids cannot offer.

### Tagamet

(cimetidine SK&F)

400mg morning and evening

# close to the IDEAL

in acid related gastritis

#### Presentation

Pale-green, oval, film-coated tablets containing 800 mg cimetidine; pale-green, oblong, film-coated tablets containing 400 mg cimetidine; pale-green, circular, film-coated tablets containing 200 mg cimetidine; a clear, orange-coloured, peach-flavoured syrup, each 5 ml dose containing 300 mg cimetidine.

#### Indications

Duodenal ulcer, benign gastric ulcer, recurrent and stomal ulceration, oesophageal reflux disease. Other conditions where reduction of gastric acid is beneficial: persistent dyspeptic symptoms, particularly meal-related; prophylaxis of stress-induced gastro-intestinal haemorrhage and of acid-aspiration (Mendelson's) syndrome; malabsorption and fluid loss in short-bowel syndrome. Zollinger-Ellison syndrome.

#### Dosage

Usual maximum 2.4 g/day. For full instructions see Data Sheet.

**Adults - peptic ulceration, acute treatment:** For patients with duodenal or benign gastric ulceration, a single daily dose of 800 mg at bedtime is recommended. Alternative effective regimens are 400 mg twice a day, with breakfast and at bedtime, and 200 mg three times a day with meals and 400 mg at bedtime (1 g/day). Treatment should be given initially for at least 4 weeks (6 weeks in benign gastric ulceration).

**Maintenance therapy:** 400 mg at bedtime.

**Persistent acid-related dyspeptic symptoms:** 400 mg twice a day for 4 weeks. **Oesophageal reflux disease:** 400 mg four times a day, with meals and at bedtime, for 4 to 8 weeks. **Zollinger-Ellison syndrome and other hypersecretory conditions:** 1.6 g or more daily, in divided doses. **Prophylaxis**

**of stress-induced gastro-intestinal haemorrhage:** 200-400 mg every 4 to 6 hours. **Acid aspiration (Mendelson's syndrome):** 400 mg 90-120 minutes before induction of general anaesthesia or at the start of labour. While such a risk persists, a dose of up to 400 mg may be repeated (parenterally if appropriate) at 4-hourly intervals. 'Tagamet' Syrup should not be used. **Short-bowel syndrome:** duration of therapy will depend on individual response.

**Children:** Over 1 year, 25-30 mg/kg per day in divided doses.

#### Cautions

Impaired renal function: reduce dosage (see Data Sheet). Potentiation of oral anticoagulants, phenytoin and theophylline (see Data Sheet). Prolonged treatment: observe patients periodically. Potential delay in diagnosis of gastric cancer (see Data Sheet). Care in patients with compromised

bone marrow (see Data Sheet). Avoid pregnancy and lactation.

#### Adverse reactions

Diarrhoea, dizziness, rash, tiredness. Gynaecomastia, occasional reversible liver damage, confusional states (usually in the elderly or very ill). Very rarely interstitial nephritis, acute pancreatitis, thrombocytopenia, headache, myalgia, arthralgia; very rare reports of alopecia, reversible impotence but no causal relationship established at usual therapeutic doses.

#### Reference and Study Protocol

1. Panijel M (1985) Zeitschrift für Allgemeinmedizin; 61:952-55  
'Tagamet' 800mg/day or aluminium hydroxide gel 36g and magnesium hydroxide 2.4g/day.  
'Tagamet' n=30 and antacid n=30.

**Tagamet**  
(cimetidine SK&F)  
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broken down to demonstrate how the different subjects are interrelated to each other and to the practice of pharmacy.

Recently the Chamber's recommendation of an eight month study period has been implemented, resulting in an increase of contact hours. As has already been said in the Chamber's memorandum, due recognition to the study phase and an increase in contact hours are of great importance for the foreign recognition of our degree.

We have however increased complaints of lack of planning and orientation in the course organization; lack of technical staff and of present facilities not being utilized to the full; our undergraduates seem to have very little exposure to pharmacists who are involved with the day to day practice of pharmacy and are therefore faced with an identity crisis. The first year students must be the ones to feel particularly disoriented at this stage.

The discussion paper on the restructuring of the pharmacy course had criticized the previous course (1974-1977) as having been based on a traditional 'British type' course which necessitated a strong basic sciences background and that a small percentage was taken up by the Practice of Pharmacy without any aspect of Pharmacy Administration being introduced in the curriculum.

Neither did it include sociomedical topics as sociology of Pharmacy as a profession, instruction in public health, and medical care organization and methods of financing and paying of drugs and services.

Moreover, pharmacy practice with a clinical and industrial context was thought to have been dealt with lightly from both the theoretical and practical aspects.

The course of pharmacy of 1976-1979 fell into line with the student-worker scheme immediately and although this course was not itself restructured, it seems that it was adapted to run on more practical lines and to provide a programme of applied education for students. The curriculum presented for the restructured B.Pharm. course did not however bring about any clamorous changes.

#### **A Curriculum Development Plan**

A curriculum development plan for the education of pharmacists in a developing country as Malta could include the following essential pharmacy competencies:

1. Evaluates the chemical, physical and bio-equivalency of multisource drugs.
2. Interprets and evaluates accuracy and completeness of prescription order.
3. Selects appropriate ingredients, product, container, brand and dosage form for drugs to be dispensed.
4. Prepares prescriptions accurately by measuring, counting or transferring the medication.
5. Provides appropriate label information for prescriptions to be dispensed.
6. Evaluates OTC drug products.
7. Consults with patients of the selection, use and the effects of OTC drugs.
8. Evaluates the relative therapeutic use of medico-surgical devices and appliances.
9. Consults with patients in the selection, storage and use of medico-surgical devices and supplies.
10. Consults with patients regarding the uses and effects of legend drugs as related to their specific needs.
11. Identifies and locates appropriate drug information.
12. Evaluates and interprets pharmaceutical and medical literature.
13. Evaluates and monitors drug therapy.
14. Provides limited emergency first aid treatment and cardiopulmonary resuscitation.
15. Provides patient with access to poison control and treatment information.
16. Refers patients to other health care professionals and agencies.
17. Communicates effectively and participates cooperatively with other health team professionals.
18. Complies with all pharmacy practice laws, drug laws, pharmacy practice regulations, and drug regulations.;
19. Demonstrates a knowledge of professional practice standards and code of ethics.
20. Demonstrates appropriate professional responsibility and judgement in interpretation of laws and regulations.
21. Applies principles of good management practice to pharmacy personnel, pharmacy inventory control and pharmacy fiscal matters.
22. Applies principles of good management practices to pharmacy operations.
23. Performs drug control, storage and drug security functions in drug distribution.
24. Demonstrates basic knowledge of the nature

and treatment of disease.

25. Demonstrates knowledge of the physical, chemical and bio-pharmaceutical characteristics of drugs that influence the routes and ultimate effectiveness of drug administration.
26. Demonstrates knowledge of the principles of nutrition and relationship to drug use.
27. Explains the characteristics of pharmacy practice according to types, roles and settings.
28. Prepares medication accurately by compounding the prescription.
29. Performs bulk compounding and packaging of ingredients according to legal and professional standards.
30. Demonstrates knowledge of psycho-social correlates and consequences of illness.
31. Demonstrates a knowledge of the relationship of pharmacy to the local healthcare system.
32. Demonstrates a knowledge of public health problems, agencies, and epidemiological research.
33. Demonstrates an understanding of the aetiology, symptoms, mode of transmission, treatment and prevention of infectious diseases.

#### Pharmacist Recommended Medicines

Note that although we have used the abbreviated term for over-the-counter drugs (OTC), we prefer to use the unambiguous term 'Pharmacist-recommended medicines', which directly refers to that function pharmacists have traditionally carried out for generations. However, pharmacists have felt the need of more knowledge in clinical matters in the formal training that they had received at University. We feel that just as direct participation in laboratory work is important in such areas as, analytical chemistry and pharmaceuticals, so is it of utmost importance to present disease, symptoms, signs and treatment of patients as whole beings rather than pieces of isolated tissues in an organ bath as in experimental pharmacology.

Computer-assisted participatory learning system can be a cost-effective way of reducing demands on teachers' time. The initial development of such systems can be very time-consuming so there is a need for central coordination of efforts in this area.

Teaching by seminar or in small groups with interchange between teacher and student is

more expensive than teaching by lecture but is an essential part of the process of promoting understanding rather than communicating information.

Change has occurred globally in pharmacy practice in the last twenty five years, but this is also so at grass roots level where for e.g. particularly in community practice time-honoured compounding skills have been taken over by technological advances. In addition the discovery of new drugs, the complexity of therapeutics, the information explosion, the emergence of biopharmaceutics and pharmacokinetics and growth of health education services rank amongst the factors influencing the change from a 'product-oriented service to a patient-oriented service. Indeed, the clinical pharmacy movement illustrates this new orientation in pharmacy practice. Pharmaceutical education therefore needs also to change in response to these new movements, yet the evidence suggests a widening of the gap between education and practice. In the U.S. it is thought that behavioural science is as much a 'basic' science as chemistry. In 1979, the American Association of Colleges of Pharmacy carried out a survey which indicated that out of 61 schools responding, 48 were offering formal classroom teaching in communication skills.

#### Pharmacy Communication

Recently in the United Kingdom there has been a direct focus on the practice of pharmacy, communication being considered of fundamental importance.

The Working Party Report on Pharmaceutical Education and Training published in the *Pharmaceutical Journal* in 1984 stated that it will be even more important in the future for students to be able to communicate satisfactorily with the public and with members of other health professions. Otherwise they should not expect to graduate and register. The Nuffield Inquiry Committee has also emphasized the importance of communication to effective practice. The Committee recommended the testing of oral skills at the end of the pre-registration period and students would have to be successful before registration. We shall, I hope, later see what are the opinions of the participants of this seminar on this score and on the pharmacy curriculum in general.

Our students may gain some practical training and experience during their work-phase most of



which takes place in the hospital environment such as at out- and in-patient pharmacies, drug information unit, ward pharmacy, etc., and at the Government Medical Stores; others undergo training in a community pharmacy. Whilst we feel that it is important to gain as much experience of as many aspects of pharmacy practice as possible, we feel that practice and training at a community pharmacy should be mandatory for all and this pharmacy should be approved as being professionally run on all counts by none other than the Chamber of Pharmacists in the interest of the students and the public.

### Continuing Education

The Chamber has long realised that continuing education is an essentially integral part of the professional practice of pharmacy. The newly graduated pharmacist must be aware of the need to update his knowledge if he is to keep up with such an everchanging, expanding profession as is pharmacy and indeed all healthcare professions.

In line with international trends, the Chamber has been holding continuing education programmes on various aspects of pharmacy practice for some years now. The aim has always been to reach all pharmacists but especially those who are not so 'green' — participation is of course on a voluntary basis, but, and unfortunately, many pharmacists seem to be happy with the status quo and not enough of those at whom these courses are aimed do in fact attend — it is always the case of the interested minority!

So one might ask, should continued education be mandatory for such an important health professional as the pharmacist? Should there not be cooperation between the University Pharmacy Department and the Chamber; funding and organization have always been the crux of such ventures.

But we know that all this is of utmost importance; firstly, to enable the pharmacists to keep up to date in the light of developing knowledge and changes in practice — this is necessary for all pharmacists but particularly for those who resume practice after an absence from it; secondly, to supplement the initial training of a pharmacist by dealing with things not covered in the degree course; and thirdly, to bring up to date the knowledge of pharmacists now in practice, some of whom will have qualified up to forty years ago or more, after a much shorter

educational course than is now mandatory.

The need to bring the knowledge of existing pharmacists up to date is immediate and once our proposals for enhancing their professional role are adopted these needs will become pressing.

Should continued education be a requirement for continued registration as a pharmacist? Who will be the educators in the continuing education programmes? Besides the services of Pharmacy Department academic staff and members of other health professions, the Chamber has often obtained the services of pharmacists medical representatives who in their specialist areas have given very interesting presentations which were also accompanied by audiovisual aids, all of which were well received by a highly appreciative audience.

The Commonwealth Pharmaceutical Associations of which the Chamber is an Executive member, and the Pharmaceutical Industry, can surely be of great help for resources of various nature and with careful planning and the organizational collaboration of our alma mater, we can surely attract more and more interested members of the profession to further continuing education programmes.

### Post Graduate Education

Pharmacy is of its own nature interdisciplinary — we know that there are several pharmacists who wish to further their studies and specialize.

The pharmacy department should have the necessary funds to allow for post graduate studies. The needs of specialists in the hospital pharmaceutical services must also be identified which specialists should be able to contribute towards undergraduate education.

The establishment of the Faculty of Pharmacy will surely need specialists in various areas, for example Pharmacy Practice, Behavioural Science. We feel that scope for pure research should also be planned, for the training one acquires in the understanding of Research Methodology is an essential constituent of the preparation of trained manpower at this level.

The hospital environment is also an ideal location for academic units for research into the application of pharmacy to patient care as this links well with a clinical pharmacy programme.

Pharmacy Practice research should also be encouraged. Since the graduation of the first local M.Phil. student. Others have proceeded to

further studies abroad and have obtained a Ph.D. It is a pity that the conferral of the local Ph.D. in Pharmacy has not yet become a reality.

We look forward therefore to careful analysis of the needs for specialization and the Chamber hopes that all pharmacists who are suitably talented will be given the chance and encouraged to further their studies so as to staff the Faculty of Pharmacy with local talent as soon as possible.

### WORKSHOP RECOMMENDATIONS

1. **Faculty of Pharmacy**
  - a. **Student Intake**  
There should be an intake of 30 students every two years. The entry requirements should be brought up to 2B's and a C.
  - b. **The Faculty should be made up of initially three departments:**
    - i. Pharmaceutical services
    - ii. Pharmacy practice and social pharmacy
    - iii. Clinical pharmacy and biopharmaceutics
  - c. **Staff requirement**  
Each department should have at least  
1 full time lecturer  
2 part time grade A lecturers  
a number of extraordinary lecturers  
a number of demonstrators
  - d. **Foreign Staff**  
It is felt that the help of foreign expertise is a must in the initial stages. This should be for a period of three to five years during which time local people will be trained.
2. **Curriculum**  
The course will be based on these three main divisions:
  - a. **Pharmaceutical Sciences**
    - i. Pharmaceutical Chemistry and Analytical Chemistry
    - ii. Synthetic and Natural products
    - iii. Pharmaceutics
  - b. **Pharmacy practice and psychosocial pharmacy**
    - i. Pharmacy practice
    - ii. Managerial sciences
    - iii. Psychosocial and legislative aspects of pharmacy
  - c. **Clinical Pharmacy and Biopharmaceutics**
    - i. Pharmacology
    - ii. Clinical Pharmacy
    - iii. Physiology and Biochemistry
    - iv. Biopharmaceutics and Pharmacokinetics
    - v. Disease

### Minister's Concluding Address

The Minister of Education, the Hon. Dr. Mifsud Bonnici, closed the seminar. In his closing address, the Minister stated that this report is not something upon which he can act alone and promised that it will be presented to the University, who will look into the proposals put forward, particularly the proposal re the setting up of a Faculty of Pharmacy.

The Government believes that society needs pharmacists. Government is aware of the problems currently facing the practice of pharmacy, such as the 'nomina'. This he said, is 'a state' which needs to be properly resolved.

There will be no centralisation of pharmacy; medicines will no longer be dispensed only from the hospital pharmacy but private pharmacies will be used as distribution points in the National Health Service.

With reference to the curriculum, he appreciates the fact that foreign lecturers are required during which time Maltese nationals are trained to eventually fill the posts. The Government believes in the need for post graduate education.

In this respect Dr. Mifsud Bonnici stated that whereas EEC countries have mutual recognition of courses and degrees, our degrees are not recognised abroad. His Government is making enquiries with ERASMUS (European Community of Knowledge) and individual European governments.

Post graduate education abroad is very expensive and apart from recognition of our degrees we need all the financial help possible.

The Government is bound through its electoral programme to a lifelong process of education. Today's rapid changes necessitate a process of continuing education for all professionals. The Minister agrees that this has to be done through the University.

### 3. Continuing Education

- a. Department of Pharmacy must establish an attitude of career and lifelong education in students.
- b. It is not yet the time for the introduction of mandatory continuing education but we have to start aiming for it.
- c. There are two forms of continuing education
  - i. active
  - ii. passive
    - i. active — this consists of the organisation of lectures preferably jointly between the Chamber and the University.
    - ii. passive — special articles should be prepared by the University and publish-

ed in the Journal. These will be accompanied with questions which readers will be invited to answer and send in for assessment by the University.

- d. Needless to say topics chosen must be relevant to the day to day running of pharmacy practice.

#### 4. Postgraduate Education

An identification of the possible areas of research has been made by the University. Furthermore areas of continued research particularly with respect to hospital pharmacy should also be identified.

Also an eye should be kept on the future requirements of the Faculty of Pharmacy so that people can be trained to fill these needs in the near future. The setting up of the Faculty of Pharmacy will help provide the necessary pharmaceutical environment for these studies to be carried out including the necessary supervisors.

It is indispensable that students are helped to carry out study periods related to their studies abroad.

#### Specialisation

Apart from postgraduate education there is an immediate need for the development of specialists in areas such as ward pharmacy and analysis. These can be trained locally by bringing tutors from abroad or sending graduates abroad.

It is most unfortunate that finances have to date been generally lacking.

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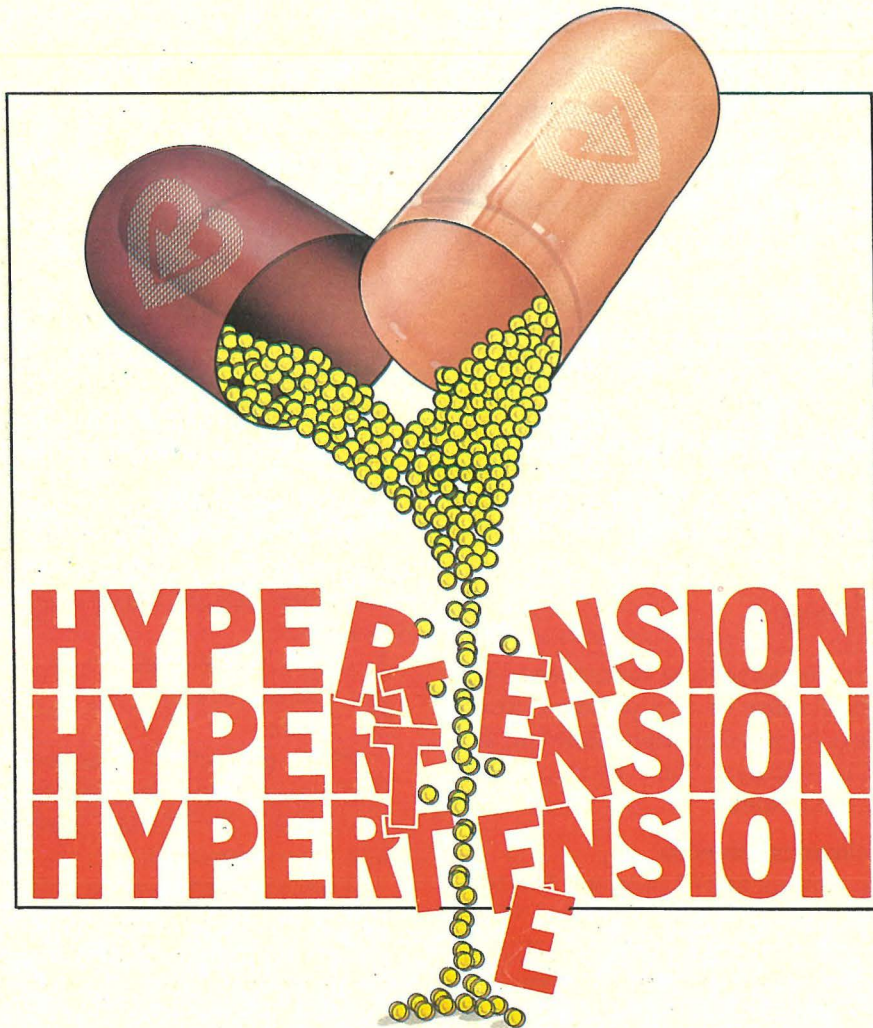


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## Educational Tours

Margot Zammit Montebello

This Study Tour was organised by the Pharmaceutical Students Association together with NSTS. The aim was to give the Maltese students an insight into the large Pharmaceutical Industries.



Tours to Ciba-Geigy and Sandoz were organised by Interpharma.

Interpharma also contacted the Pharmacy Institute of Basel, and the students invited us to visit the Institute. We were given three twenty-minute talks on plant tissue cultures, the pharmaceutical training of the institute and the chemistry department. One student also took us around the pharmaceutical museum which is the oldest and one of the most complete museums in Europe.

### Tour to Ciba Geigy

The tour, which was conducted by the Mediterranean Export Manager, was introduced by a slide show on the history of this pharmaceutical company followed by another slide show on the products of Ciba-Geigy. The products are divided into six operations.

### Dyestuffs and chemical division

The division's various activities cover the production of dyes, chemicals and finishes, which are used for dyeing and painting of textiles made of wool, silk, cotton, synthetic fibres and blends and of leather, furs and paper. Finishing chemicals do not merely improve the in use and wear properties of textiles but they also facilitate coating lamination and produce effects such as stretch and softening, all of which have become an essential element of fashion. Other important chemicals are — a range of fluorescent whitening and photo-bleaching agents which are used in detergents.

- Antimicrobials which are used in deodorants, soaps, hand washing preparations,
- Dyes and pigments used in the tannery industry,

- Dyes and bleaching agents used in the paper industry,
- Decolorization of liquid effluents and the suppression of foam in sewage treatment plants.

### Pharmaceutical Division

These were the plants that we toured. The five major areas of pharmaceuticals in which Ciba-Geigy is represented with highly effective products are:

1. Cardiovascular preparations
2. Anti-rheumatic and other anti-inflammatory products
3. Psychotropic and neuroleptic drugs
4. Antibiotics and medication for tropical diseases
5. Dermatologicals and drugs for cough and colds.

### Agricultural Division

The primary goal of this division is to improve the performance and quality of food crops, livestock and natural fibres and is divided into three branches:

1. Plant protection
2. Animal health
3. Seeds

**Plant protection** is concerned with the production of larger and better harvests and they are mainly herbicides, insecticides, fungicides and macronutrients.

**Animal health** branch offers drugs used for the prevention and treatment of disease.

**Seed Branch** is engaged principally in the breeding and production of improved, locally suited highbred seeds.

### Plastics and Additives

This group is made up of three important components:

- Plastics
- Pigments
- Additives.

All three components are used in an innumerable number of processes.

**Ilford Group:** which is a manufacturer of black and white photographic material.

**Electronic Equipment Group.**



### Tour of the Pharmaceutical Division

The tour was divided into the following processes:

1. Solid dosage forms
2. Creams and ointments
3. Injections
4. Suppositories
5. Transdermal therapeutic systems
6. Storage and transport of materials.

Before entering each department we were shown a video on each process which was very informative. These videos also highlighted important points of good manufacturing practice for example sectioning of factory into sterile areas and non sterile areas. Each area is clearly marked so contamination does not take place. Also sectioning is important so that

1. Chemicals and products that are being processed do not get mixed up.
2. Fault in system may be identified
3. Error may be corrected, this would be impossible if process is left to completion
4. Machinery and condition adjusted so that the same error will not take place.

### Labelling

Each container is labelled so that easy identification may take place. The label indicates the material present, state of material e.g. powder or granule if tested.

Finished products are either labelled by computer codes as in the case of creams and ointments, by coloured bands as in the case of ampules, identification marks are punched into the tablets as they are being processed.

### Records

Each step in a process is recorded in a register. This would contain batch number of finished products, the code numbers of raw materials and the signature of controller of the process.

### Tour of Salco

Although this company is a small company as compared to Ciba-Geigy and Sandoz, it showed us a manufacturing process which was different to the ones we had previously seen.

The main product of Salco is Solcoseryl which is a natural product obtained from the blood of calves that is used on damaged skin to promote wound healing. The tour was introduced with a video of the product which explained its function, clinical use of the product and results of clinical trials which showed that the main actions of Solcoseryl are:

- Stimulates the cells to divide
- Promotes vascularization

Stimulates the formation of collagen.

We then were shown around the factory and given a detailed explanation of how the product is extracted.

The company also produces a variety of vitamins and other injectables.

### Tour to Sandoz

On arriving we were greeted by Dr. Agius who gave us an introductory talk after which we were shown a promotional feature about new Sandoz products. Then we were taken to the various departments of the plant. In each department we were introduced to the staff, who explained in great detail every step in the production of particular products. We also had the opportunity to visit several laboratories where we acquainted ourselves with the techniques and protocols employed. At every stage on our tour we were given the opportunity to ask questions and the staff were most helpful.

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(Continued from page 15)

time "party" to which people are invited, but a year-long national mobilization for health development.

Suggested possibilities for action include debates in parliament, radio and television programmes, information and discussion in the press, the issue of special stamps, exhibitions, activities by municipalities, local and provincial authorities, non-governmental organisations, professional associations, universities and schools, competitions and sports events of all kinds.

A number of countries have already set up national committees to prepare for the WHO anniversary.

The grook by Piet Hein is available as a source of inspiration and to help seed up worldwide action for health.

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### Membership 1988

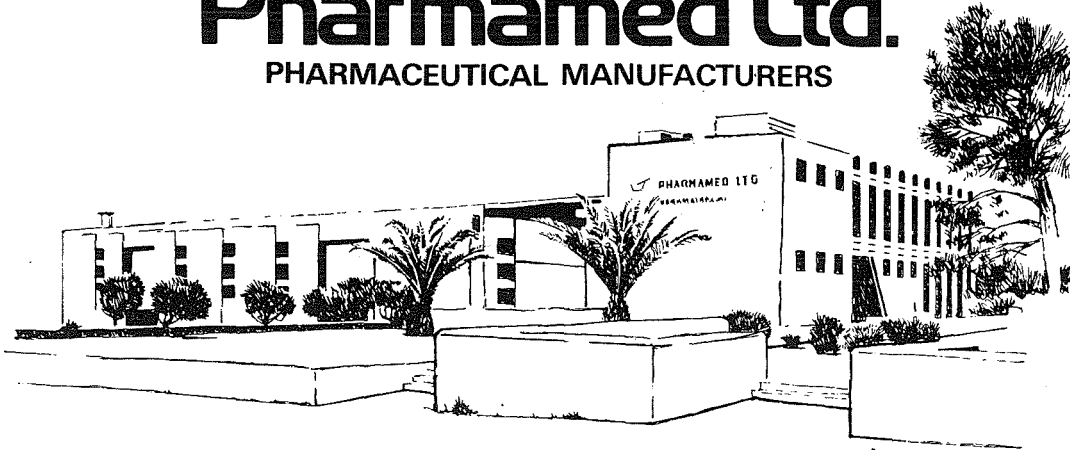
All registered members of our Chamber and other pharmacists are asked to enrol or renew their membership. We are pleased to announce that all registered members for 1988 can collect their free copy of the British National Formulary from the permanent secretary of the Federation of Professional Bodies. This offer is a result of the first 'Pharmaid' Collection and Distribution Scheme organised by the C.P.A.





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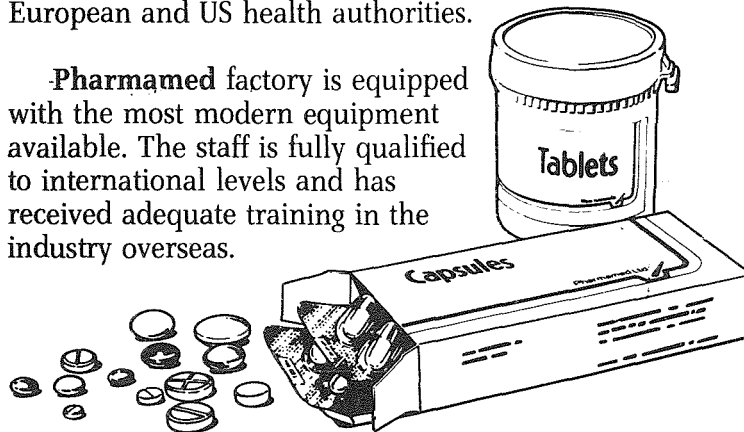


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Pharmamed Ltd produces generic pharmaceutical preparations, mainly for export. The Company produces some 800 million tablets/capsules per year, 96% of which are exported to Europe for onward distribution to over 100 countries.

Pharmamed products comply with internationally recognised standards such as BP, USP, EP, and are manufactured under strict adherence to Good Pharmaceutical Manufacturing Practices as outlined by European and US health authorities.

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# A Safer Organism for the Rideal-Walker Test

Anthony Serracino Inglott, B.Pharm., D.Pharm.

This paper was presented by Dr. A. Serracino Inglott, B.Pharm., D.Pharm., at the 47th International (Jubilee) Congress of Pharmaceutical Sciences of F.I.P. in Amsterdam. The paper is the result of research work carried out under Dr. A. Serracino Inglott by a Pharmacy student, Miss V. Naudi, with the assistance of the microbiologist, Mr. V. Gauci.

The Rideal-Walker (RW) test is a quantitative test by which the antimicrobial activity of the phenolic disinfectant is compared with that of phenol. (1-3)

The Rideal-Walker test is carried out:

- by manufacturers as a quality control procedure during production.
- is a tender specification for the phenolic disinfectant to be used in hospital and laboratories.
- to devise a practical use dilution for a particular brand of phenolic disinfectant.
- to test preliminary disinfection evaluation of new active phenolic agents.

## Main problems in using this test

However the Rideal Walker test has two main disadvantages: (1-3)

- The test specify *Salmonella typhi* as the test organism, which is a very dangerous pathogenic organism responsible for the typhoid fever. This organism was the main concern of microbiologists during the discovery of the test, when typhoid was still fatal. The use of *Salmonella typhi* presents a problem for small scale manufacturers and laboratories because pure cultures of pathogenic organisms require high initial and running costs. The laboratory workers face serious hazards.
- It is a single organism test and so only the antimicrobial activity against *Salmonella typhi* can be studied. The use of a single test organism may produce incorrect results when comparing disinfectants for purchasing. This is because a certain disinfectant may possess a high Rideal-Walker coefficient against a certain test organism and a low Rideal-Walker coefficient when another test organism is utilized.

## SPECTRUM OF ACTIVITY OF

### PHENOLICS

Phenolics have a wide range of bactericidal activity, including *Pseudomonas*, *Tubercule bacilli*. They have fungicidal activity but little viricidal activity. Bacterial spores are not sensitive to the phenolic disinfectant and are only moderately resistant to acid fast bacilli like *Mycobacteria*. The addition of sodium EDTA, pine oil and sodium castor oil soap enhance the antimicrobial activity of the phenolics.

Hard water and organic matter has a marked influence on their activity. Pus, blood, soil, faeces, milk etc. all reduce the effectiveness of a disinfectant.

Material such as fabrics, cork, plastics and rubber absorb and inactivate them. So in the presence of interfering substances the concentration of the disinfectant must be increased<sup>(6)</sup>.

## Alterations to the test

Alterations to the Phenol coefficient tests were carried out by the British Standard institution in 1961<sup>(4)</sup> using *Staphylococcus aureus* instead of *Salmonella typhi* and also by the association of the official analytical Chemists<sup>(5)</sup> (AOAC) using *Staphylococcus aureus* and *Pseudomonas aeruginosa*. By using different species of microorganisms, a spectrum of activity of a certain disinfectant is given. However these microorganisms are still pathogenic and the problem can only be eliminated if non pathogenic organisms are used. **This study concerns the carrying out of the Rideal-Walker test using the non-pathogenic *Escherichia coli*.**

### Rideal-Walker Test

The Rideal-Walker test, using the British Standard, 541:1985<sup>(8)</sup> Determination of the Rideal-Walker (RW) Coefficient of Disinfectants' was carried out substituting *Salmonella typhi* ATCC6539 for the non-pathogenic *Escherichia coli*, ATCC11229

1. The test culture using *E. coli* is prepared in a specified way using Rideal-Walker broth (containing Oxoid nutrient broth (code CM 67)).

2. Serial dilutions of Phenol and of the disinfectant under test are prepared using sterile water.

3. 5ml volumes of the test disinfectant of phenol solution are inoculated with 0.2 ml's of the culture at a temperature of 17-18°C.

4. At 2.5, 5, 7.5, and 10 minutes intervals a standard loopful of the contents is added to 5mls of the Rideal Walker broth to prepare a subculture of the surviving organisms.

5. The broths were then incubated at 37°C for 48-72 hrs and then tested for growth.

The pattern of growth in the test tubes is ob-

**Table 1.**

#### Composition of the Disinfectant

The spicemen disinfectant is made up of:

Chlorophenols  
Chloroxylenols  
Pine oil  
Sodium Castor Oil Soap  
Alcohol  
Sodium EDTA  
Brown dye  
ph 9.1

It is manufactured to BS 5197:1976<sup>(7)</sup>.

served and those containing a turbid broth indicated that there was growth, whilst a clear broth indicate absence of growth.

6. The phenol coefficient was calculated by dividing the highest dilution of the test disinfectant showing growth after 5 mins but not after 7.5 mins, by the highest dilution of phenol giving the same result, e.g. Table 2, 3.

Higher RW numbers indicate better disinfectant performances.

**Table 2. Rideal-Walker test results of the Phenol control.**

| Phenol Dilution | Exposure Time |         |         |          | Phenol Coefficient |
|-----------------|---------------|---------|---------|----------|--------------------|
|                 | 2.5 min       | 5.0 min | 7.5 min | 10.0 min |                    |
| 1:95            | -             | -       | -       | -        |                    |
| 1:100           | +             | -       | -       | -        | 1:105              |
| 1:105           | +             | +       | -       | -        |                    |
| 1:110           | +             | +       | +       | -        |                    |
| 1:115           | +             | +       | +       | -        |                    |

**Table 3. Rideal-Walker test results of the disinfectant at a dilution of 1:4.**

| Disinfection Dilution | Exposure Time |         |         |          | Rideal-Walker Coefficient |
|-----------------------|---------------|---------|---------|----------|---------------------------|
|                       | 2.5 min       | 5.0 min | 7.5 min | 10.0 min |                           |
| 1:100                 | +             | -       | -       | -        | 200/105 =<br>1.90         |
| 1:150                 | +             | -       | -       | -        |                           |
| 1:200                 | +             | +       | -       | -        |                           |
| 1:250                 | +             | +       | +       | -        |                           |
| 1:300                 | +             | +       | +       | -        |                           |

+ = growth.

- - no growth.



**Results**

The Rideal-Walker test was performed on the sample disinfectant at different concentrations (1:1, 1:3, 1:5) using Escherichia Coli as the test organism. Table 4 gives the results of the Rideal-Walker coefficient at the different concentrations. Fig 1 represents the histogram of the test results.

**Table 4. Results of the Rideal-Walker coefficient using E. Coli.**

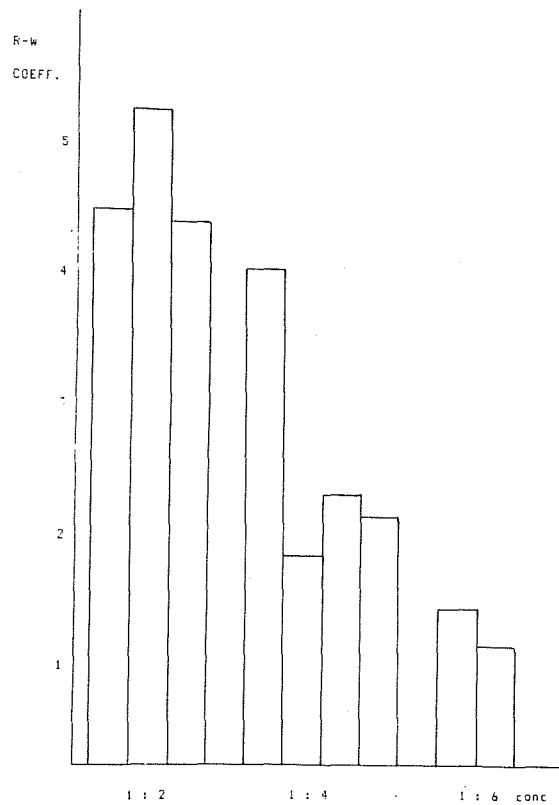
|                               |           |
|-------------------------------|-----------|
| 1. Disinfectant of Conc. 1:1: | RW = 4.76 |
|                               | 1         |
|                               | RW = 5.24 |
|                               | 2         |
|                               | RW = 4.65 |
|                               | 3         |
| Average RW Coefficient        | = 4.88    |
| 2. Disinfectant of Conc. 1:3: | RW = 4.09 |
|                               | 1         |
|                               | RW = 1.90 |
|                               | 2         |
|                               | RW = 2.38 |
|                               | 3         |
|                               | RW = 2.14 |
|                               | 4         |
| Average RW Coefficient        | = 2.63    |
| 3. Disinfectant of Conc. 1:5: | RW = 1.39 |
|                               | 1         |
|                               | RW = 1.16 |
|                               | 2         |
| Average RW Coefficient        | = 1.27    |

From these results the mean Rideal-Walker coefficient of the undiluted disinfectant using E. Coli is 9.63. (Standard deviation 2.74; Coefficient of variation 28.74%).

The Rideal-Walker test was performed on the same batch of sample disinfectant using Salmonella typhi as the test organism. Table 5.

**Table 5. Rideal-Walker test results using Salmonella typhi.**

| Disinfectant Dilution   | Rideal-Walker coefficient |
|---|---------------------------|
| 1:7   | 1.86                      |
| 1:4   | 20.5                      |
| Average Rideal-Walker coefficient of the undiluted disinfectant is 10.64. |                           |



**Fig 1. Histogram representing the test results.**

**Discussion**

The statistical results show that the coefficient of variation is 28.74%. This result is in the same order as when a large number of tests were carried out by skilled operators.

But the high coefficient of variation can be due to a number of errors whilst performing the test.

In this study, not a large number of tests on the specimen disinfectant using different concentrations were carried. The test should be performed for a large number of times to reduce the significance of errors.

Errors can arise if the conditions of the laboratory vary, such as temperatures, apparatus, material and different batches of reagents. The analyst must be very careful so that the conditions vary as little as possible.

In the test results when E.Coli was used to evaluate the disinfectant at a concentration 1:3 the first result is much higher than the others. This could be because the microorganisms were damaged with time.

The test culture should be changed frequently as the microorganisms are damaged with time and so a lower concentration of disinfectant will be needed to kill them. The RW coefficient will be lower than it should actually be.

Long intervals between successive sampling lead to imprecision. Samples are removed at intervals of 2.5 minutes. The phenol and disinfectant dilutions should kill the organism in just over 5 or just under 7.5 min respectively and still give the same end-point.

In practice disinfection takes place at a variety of temperature and because bactericides have characteristic coefficients, their performance at the temperature of the test may fail to reflect their behaviour at other temperatures.

Sampling is done with a small inoculating loop and there can be considerable variation in the size of the sample.

### Conclusion

When the test results using *E. Coli* are compared with those using *S. Typhi*, it can be concluded that the average Rideal-Walker coefficient do not differ so much from each other.

The antimicrobial activity of the specimen disinfectant against *E. Coli* is similar to that against *S. typhi*. However this can only be true for the same type of phenolic disinfectant as the specimen, as results can deviate when another phenolic disinfectant is tested.

It is recommended to consider the possibility of including *E. Coli* as a possible test organism in official RW tests to facilitate the carrying out of quality control of disinfectants. This change has the advantage of not using a highly pathogenic organism. In this way the initial and running cost for such a test are reduced. The test is still useful especially in small scale manufacturing and purchasing.

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### REMINDER

In the last 15 years significant new problems in the use of disinfectants have arisen. The emergence of Hepatitis 'B' and more recently the AIDS virus has made it necessary to reconsider disinfectant policies.

It is worth noting that the following biocides do not have wide spectrum viricidal activity:

- Phenolics
- Quaternary Ammonium Compounds
- Chlorhexidine

### THE CONTROL OF HEPATITIS 'B' AND AIDS VIRUS (HTLV III)

The U.K. Advisory Committee on Dangerous Pathogens produced interim guidelines in 1984. For the destruction of the virus they recommended Glutaraldehyde or Chlorine based Biocides.

There is substantial evidence to demonstrate that both 2% Alkaline Glutaraldehyde and Chlorine releasing biocides will effectively destroy both Hepatitis 'B' and AIDS virus. 1% inactivated Glutaraldehyde was shown to be effective within minutes. Immersion in 2% Alkaline Glutaraldehyde for 10 minutes for clean instruments and if pre-cleaning is not possible for 1 hour, will effectively eliminate a key enzyme of the AIDS virus.

It was also demonstrated that 1000ppm available Chlorine resulted in a large loss in enzyme activity of the virus in 5 minutes. They go on to recommend the use of 2000 ppm available Chlorine for disinfecting clean floor and work surfaces.

The key to safety is the use of suitable biocides and the avoidance of sharp injury and contact with blood.

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## PADA

# Medicines and Drugs on the Job

Mary Anne Ciappara B.Pharm.

Members of the Federation of Professional Bodies, Chamber of Advocates, Federation of Industries and the Caritas Association for Drug Prevention and Action participated at a Forum entitled "Medicines and Drugs on the Job". This forum was organised by the Chamber of Pharmacists on the 16th June 1987, on the occasion of the Commonwealth Pharmacy Day, which commemorated the holding of the first exploratory conference in London of the Commonwealth Pharmaceutical Association of which the Chamber of Pharmacists is a full member.

The forum was aimed at all professionals, many of whom are sure to meet the problem of workers or colleagues working under the influence of drugs, at great risk to themselves and their fellow workers.

Indeed it was attended by members of different professions including medical doctors, engineers, accountants, insurance brokers, social workers, medical and pharmacy students, Caritas members and last but not least pharmacists. All those who attended contributed interesting views on this problem and will hopefully, be better off to face it in the future.

The speakers were:

Magistrate Dr. David Scicluna LL.D., who hears all the drug cases on the island except those that involve trafficking of drugs on a large scale;

Dr. Mary Sciberras, M.D., who besides being a family doctor is a founder member of Caritas Association for Drug Prevention and Action and one of the group involved in the setting up of the Detoxification Centre at St. Luke's Hospital;

Mr. Tony Darmanin, Managing Director of F.G.P. Ltd., a director of Prosan and Pace and Darmanin Ltd., and a member of Caritas Core Group.

The Chairperson was Pharmacist Mrs. Mary Ann Sant Fournier, B.Pharm., M.Phil., President of the Chamber of Pharmacists.

## Commonwealth Pharmaceutical Association (CPA)

After welcoming the participants, Mrs. Sant Fournier explained the *raison d'être* of the CPA which is that of training and maintaining high standards of professional pharmacy in its various fields, which include education, community

practice, distribution of medicines, Hospital Pharmacy. 'Health for all by the year 2000' is a World Health Organisation concept which the CPA readily embraced and it is the present policy of CPA to work with WHO so that the various decisions taken will be eventually implemented by the Health Ministers of the organisations.

## Medicines and Drugs

In introducing the topic under discussion, Mrs. Sant Fournier said that the title was carefully chosen to include both 'Medicines' and 'Drugs' in order that the existing confusion be terminated once and for all. She continued that in fact, in 1982, the WHO saw fit to suggest a modification to the standing definition of the word 'DRUG', "a substance that when taken into the living organism may modify one or more of its functions"<sup>(1)</sup> (1968) to "a drug, in the broadest sense is any Chemical entity or mixture of entities, other than those required for maintenance of normal health, the administration of which alters the biological function and possible structure"<sup>(2)</sup> This modification was proposed to exclude "food, oxygen, water, endocrine substances, etc. in amounts required for normal health"<sup>(3)</sup> but not meant to exclude drugs which are used to regain and maintain normal health.

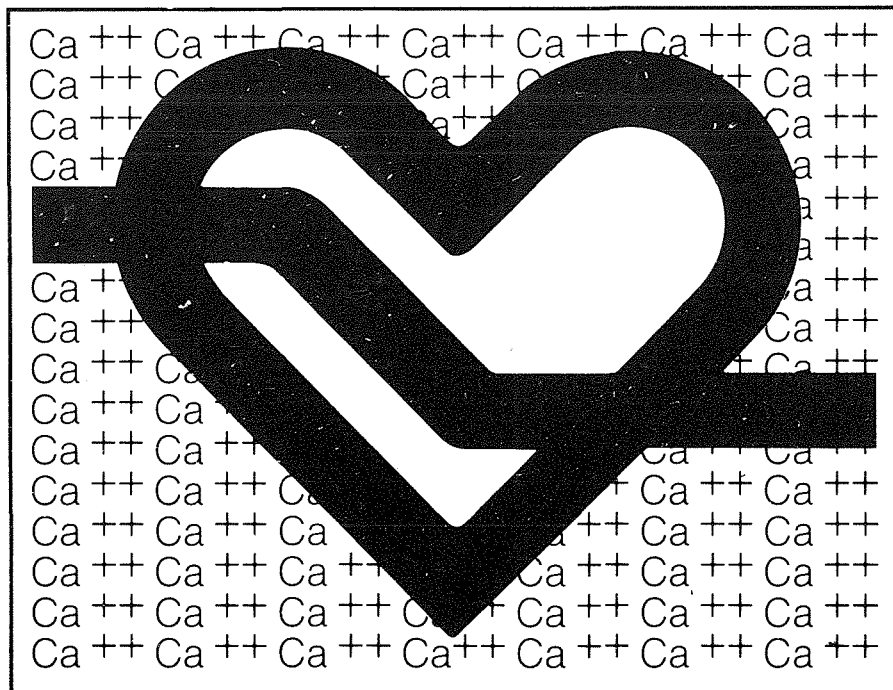
The word 'drugs' when defined in the narrowest sense immediately brings to mind narcotics or drugs of abuse, but drugs could mean medicine prescribed by the physician for treatment of illness such as antibiotics, steroids, etc., proprietary medicine, household and industrial chemicals, tobacco, alcohol and even tea or coffee since they contain the stimulant caffeine.

These are the 'legal' drugs. Illegal drugs are ones that have been stolen, smuggled into the



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country or manufactured or grown without licence. Some illegal drugs are marihuana, heroin, cocaine. It is a criminal offence to process, buy, to sell or to use such drugs. All prescription drugs that are not obtained through the normal channels (i.e. dispensed by a pharmacist on a doctor's prescription) are also illegal.

The problem of drug abuse is as old as civilization but another aspect which could be just as serious is the misuse of medicine. Pharmacists and other health professionals share a great responsibility in preventing drug consumers from turning into drug abusers.

The film 'High on the Job' was then showed, which portrayed several professionals in America who addicted to Cocaine, experienced a gradual deterioration in their professional performance. The message of the film is not in the write off of these professionals, but in providing ways and means for their rehabilitation and return to their former professional place in society.

A discussion on the topic then ensued, with particular emphasis on the problem in Malta. The members of the audience also actively participated in the discussion. A review of the discussion is being presented.

### Drugs and medicines on the job

It has been noted that declining work performance and high absenteeism especially on Mondays can be related to alcohol or other drug use. From an opinion poll, it has been found that locally the problem is poly drug. Only a minority (a small percentage) use Cocaine as it is very expensive.

Various problems arise when the employee is a drug addict. He tries to hide the problem from the employer. They find the place of work a good market place for drugs as he is likely to push drugs to his neighbour. Persuasion by fellow employees can be very powerful. One needs to belong in a group and it is extremely difficult to act against it. This is apparent in work groups where peer pressure is very high.

### Company policy in Malta. If there is a problem what happens?

In Malta if an employee is suspected that he is under the influence of drugs, he is sent to the company doctor. There is not the set up of social workers and welfare officers. In the case of alcohol abuse, an employee is given three chances

before he is dismissed. Employment can be terminated as his addiction affects his performance and relationship with friends at work and management.

What happens when certain employees are taking Diazepam as prescribed by the doctor or are taking antihistamines or cough preparations? Motor incoordination and impairment of ability to operate machinery may also be considered a form of behavioural toxicity. Are we going to stop the employee from operating machinery and give him alternative work?

### Detection

Sniffer dogs can be used to detect the presence of drugs on the premises. But these spot checks with sniffer dogs can cause embarrassment and friction between employee and management.

**Work scanning programmes** have been developed abroad. These programmes are based on the premise of using simple routine procedures to screen employees. Screening procedures involve the use of laboratory tests to detect drug levels in urine and blood. Persons so identified are then assessed further to determine the nature and extent of drug-related problems and appropriate interventions to be adopted.

Such early intervention before severe physical, mental and social damage has occurred decreases the risk of more severe long term problems. It has been demonstrated that screening can be a cost efficient approach.

**Drug free status as a condition of work:** Should a prospective employee be screened for drugs? A person interviewed for a job can undergo laboratory tests to make sure he is drug free. These tests can be made part of the necessary entry requirements.

### Local situation

Is it a good idea that the contract of work authorises the management to have the employees screened for drugs? What are the employer's legal rights? It is best to think of safety at work first and foremost so as to safeguard other people's lives. If these screening tests are not included in the contract of work it is advisable for the management to go ahead and carry them out as it will be too late to wait until some accident happens. In Malta no statistical studies have been carried out on what causes accidents on the job and their frequency.

(Continued on page 31)

# The Control of Pharmaceutical Supplies in the Navy of the Order of St. John in Malta

Paul Cassar M.D., Ph.C., D.P.M., F.R.Hist.S. (Lond.), D.Litt. (Hon. Causa)  
Hon. Fellow of the University of Malta

I have elsewhere dealt with the organization of the naval medical service of the Order of St. John while in Malta and with the various duties of the professional personnel afloat<sup>(1)</sup>.

The ship's crew usually consisted of 30 to 35 knights and 200 soldiers besides technical officers, artificers and mariners; and some 340 oarsmen who were either slaves, convicts or mercenaries known as *buonavoglie*. The need of having medical men on board to look after the health of this mass of men — approaching the 500 to 600 mark — was duly recognised by the Order; in fact a medical team consisting of a physician; a surgeon and sometimes an assistant surgeon and a barber-surgeon, formed part of the ship's company<sup>(2)</sup>.

As the number of ships in the Order's navy never exceeded ten at one time, the whole medical staff must have consisted, at the maximum, of two physicians, ten surgeons, ten assistant surgeons and twenty barber-surgeons. The pharmacist never formed part of this naval medical team though he occupied an important post on the professional staff of the Order's hospital in Malta since at least 1555<sup>(3)</sup>. In the absence of a pharmacist on board, the officials entrusted with the storage, issue and administrative control of medicaments required for the crews were a knight, called the *Re della galera*, who among other duties had to countersign the bills showing the expenses connected with the issue of medicaments; the surgeon and the barber-surgeon.

Until 1757 the medicinals needed for the crews of the Galley Squadron were bought by the naval surgeons themselves. For some time the Treasury of the Order had been receiving frequent complaints from the crews regarding this practice. Having ascertained that "in the majority of cases these complaints were quite true and well founded, the Treasury Commissioners, being very keen that sick crews should be "well treated", issued a decree on the 15th November of that year aiming at the elimination of the "abuses" to which the prevailing system of ac-

quiring and issuing the drugs gave place<sup>(4)</sup>.

The decree laid down that in future the Medicine Box of every galley was to be furnished with drugs from the pharmacy of the Holy Infirmary of Valletta. Thus the drugs were no longer to be purchased by the surgeons but were to be provided at the expense of the Common Treasury. This Box was to have two different locks and keys — one key to be kept by the *Re* or *provveditore* of each galley and the other key to be retained by the surgeon. The *Re* was to be present during the daily compounding of the medicaments and during any other occasion when drugs had to be issued.

All medicaments prescribed by the Physician of the Squadron were to be registered by the barber-surgeon and countersigned by the physician in an apposite register to be kept in the Medicine Box. In the same register were also recorded the remedies for external application ordered by the surgeon who, like the physician, had to countersign them. The decree confirmed the "old established rule", set down by the Congregation of the Galleys, which "severely prohibited the surgeons from administering any internal remedy".

Apart from the medicaments, the Medicine Box was to contain also the tow, calico and bed-sheets for the use of the sick. The daily consumption of these items was to be entered in the register already mentioned and signed by the *Re* of the galley.

Before the departure of the squadron from Malta, the *Re* together with the Government Physician-in-Chief (*protomedico*) and the Physician of the Galleys, was to be present during the preparation of the Medicine Box at the pharmacy of the Infirmary. The clerk of the *Re* was to keep a note of the quantities, weights and qualities of the various items.

On returning to port at the end of the cruise, the Medicine Box was conveyed to the pharmacy of the Holy Infirmary and the items checked to ensure that no excess of medicaments was issued over and above the amounts



Decreto della Vendera Camera Relativo all'Amministrazione  
 de' Medicamenti forniti a spese de' Cerusici della Squadra  
 delle Galere per l'Equipaggi delle medesime; Emanato  
 sotto li 15. Gbre 1757.

Li Vendi Granjornni. Re. E.

Informate Noi delle Frequenti doglianze degl'Equipaggi della  
 Galere relative all'Amministrazione de' Medicamenti forniti  
 a spese de' rispettivi Cerusici nelle occorrenze delle loro Infer-  
 mita, e riconosciute queste essere nella maggior parte troppo  
 uere, e fondate, mossi dallo zelo della ospitalita, e della pre-  
 muza, che giustamente abbiamo, che siano dotti Nostri Equi:

11.2.771

Fig. 1. The opening paragraph of the decree of the 15th November 1757 recording the complaints of the crews regarding the management of medicinal preparations on the part of the naval surgeons. Courtesy of National Library, Valletta.

prescribed by the physician and the surgeon as recorded in the apposite register. Any unauthorised issue of medicaments had to be paid for by the surgeon from his own pocket. At the end of the year the registers were submitted for examination to the Treasury for calculating the total expenditure for drugs and medical supplies incurred by the squadron.

Every member of the crew had a portion of money deducted from his wage. Part of this levy was passed on to the surgeon, in addition to his salary, and the remainder was held by the Treasury to defray part of the cost of the medicaments provided for the squadron. The surgeon was also allowed to continue to receive treatment fees from the *buonavoglie* and from other members of the crew suffering from venereal diseases. He was, however, to continue to provide his surgical instruments from his own purse.

The galley captain was responsible for the supply, from funds issued by the Treasury, of wine, oil, pots, porringers and almond drinks for the use of sick seamen; while the *Re* was to ensure that there was no increase in the issues

of bed-sheets for the sick berth and for tearing into strips for bandages and dressings for the wounded.

Finally, the decree contained two provisions consideration of which falls outside the scope of this paper but which deserve mention for the sake of completeness. First, was the granting of an increase in salary to the surgeons and barber-surgeons; and second, the establishment of the principle that when weighing the merits of surgeons and barber-surgeons for promotion, the Venerable Congregation of the Galleys "was always to give preference to the most competent candidate without any regard to seniority as the appointment to such posts must always be decided solely according to his ability"<sup>(5)</sup> — an administrative principle that after more than two centuries has not yet received the recognition and the practical application that it deserves.

#### Discussion

The opening paragraph of the decree refers to "complaints" by the crews and to "abuses" regarding the management of the medicaments destined for sick seamen on board the galleys.

"necessarij. et tale effetto si raccomanda alla suddetta Vendita Congregazione in occasione di promozioni di Cerusici, e Barbe: rotte dar sempre la preferenza alli più capaci senza riguardo all'anzianità, stantedi in tali posti si deve dar luogo alla sola capacità".

Undecimo si raccomanda infine alla detta Vendita Congregazione delle Galere di fare puntualmente, ed esattamente osservare questa nostra Ordinanza, e non altrimenti.

Fig. 2. The last paragraph of the decree establishing the principle that promotions of the surgical staff were to be given according to professional competence and not to seniority. Courtesy of National Library, Valletta.

The decree, however, does not specify what these "complaints" and "abuses" were. Various possibilities come to mind. Did the surgeons fob off the patients with lower doses than those actually prescribed by the physicians to make the ingredients last as much as possible and thus spend less of their own money on drugs? Did the surgeons use false weights and measures to economise on the prescription? Did they claim to have purchased larger quantities of drugs than the amounts they had actually bought? Or did they charge for ingredients which were never acquired and used? Did the money spent by the surgeons represent actual market prices or were the claimed prices inflated ones?

If the above irregularities did occur how were they finally detected? Were any investigations carried out by the Congregation of the Galleys or the Treasury to establish the nature and gravity of such possible frauds; and if so, with what results? Unfortunately the decree is silent on these points. No other documents on the matter have so far been encountered. We are, therefore, left guessing what the "complaints" and "abuses" were and where the faults — if any — lay.

Irrespective of the nature of the irregularities, the Congregation of the Galleys seems to have availed itself of the occasion to restrict the issue and use of medicaments to realistic levels and thus prevent the acquisition of large or unwanted quantities of drugs — perhaps at exorbitant costs.

The provision of a Medicine Box with two different locks and keys, with one key retained by the *Re* and the other kept by the surgeon, ensured that none of the two officials could open the Box in the absence of the other one. Embezzlement of medicaments at the primary source was thus forestalled. The scrutiny of the contents of the Box both before the departure of the galley and after its return furnished an additional check on the possibility of fraud — as did the comparison of the quantities of drugs actually remaining in the Box with the quantities recorded in the register as having been consumed by the patients.

One last reflection. How are we to interpret the increases in salaries accorded to the surgeons, etc. in the context of the references to grievances and to "abuses"? Were these salary increases a tacit recognition by the Congregation of the Galley or the Treasury that the surgeons were insufficiently paid and that, because of this, they were more liable to temptation and to resorting to fraudulent ways of augmenting their income by overcharging the Treasury for the drugs they had purchased?

In the absence of any documentary evidence it is reasonable to extend the benefit of the doubt to the surgeons and to clear them of having mismanaged the supply and use of medicaments in the Order's navy; yet we cannot escape the lingering thought that something had gone wrong in the administrative arrangements that regulated the purchase and use of medicaments prior to 1757. Indeed knowing that human nature does



not change, we may be allowed to ask:- What happened after the issue of this decree of 1757? In other words, did the Treasury succeed in ensuring that sick crews were provided with an adequate and genuine supply of medicaments; that the new arrangements were sufficiently fool-proof so that the Treasury was not cheated by some clever stratagem conceived by some ingenious official aiming at lining his own pocket at public expense?

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4. Archive 654, fol. 220, National Library of Malta, Valletta.
5. *Ibidem*, fol. 221 v.

(Continued from page 27)

#### Impaired Professionals

Professionals are no different from any other part of our society and therefore, one can expect that some of our colleagues would fall prey to drug dependency.

An impaired professional is one who is chemically dependent upon drugs, alcohol or both to such an extent that the usage of such substances interferes with his ability to practice optimally.

In the U.S.A. medicine has dealt with the problem of impaired physicians rather openly for a number of years. Perhaps this is due to the recognition of the life and death nature of some medical and surgical procedures. Whatever the cause, it has been heralded as a big step in the right direction. As seen from the film 'High on the Job' made in 1982, a policy has been adopted that supported and encouraged the development of special programmes to counsel, refer, treat and rehabilitate professionals who are dependent on alcohol and on other drugs.

**Detecting impaired professionals.** All professionals should be more candid and forthright in confronting their peers and colleagues when their behaviour suggests the possibility of a drug/alcohol abuse. We do our profession, our colleagues and their clients no favour by pretending not to see which is prevalent today. At present we can be reasonable optimistic about the recovery of impaired professionals.

All those present agreed that these policies should be adopted:

1. Screening programmes to be done routinely on all employees starting from the managerial level downwards as everyone is liable to drug abuse. (It is unacceptable to screen lower grades only).
2. For screening to be carried out, one must legislate. Just as abroad breathalisers have been accepted by drivers on the road to test their alcohol intake, so will in future drug screening programmes on the job be accepted and carried out routinely. (It is a wonder that notwithstanding the number of road accidents, breathalisers have not been introduced in Malta).
3. Persons who are found to be under the influence of drugs are made to undergo detoxification and attend a rehabilitation centre. Ideally the person should be granted sick leave. He will then proceed to a half way house, with others of the same social background or same profession to undergo group therapy. No disciplinary measures should be taken.
4. It is important that an efficient system is planned in advance and that it is maintained, otherwise early intervention does not occur.

#### Conclusion

There was a general consensus that legislation should be enacted to make mandatory drug-testing legal and that jobs should require drug free status as a condition of employment. Professionals should take the lead in this area.

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Pivmecillinam

**tailored for urinary tract infections**

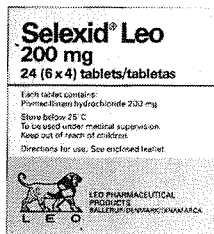
- The first amidino-penicillin
- Selective and powerful action against G negative bacteria
- Effective 3-day treatment for acute cystitis

### Calcipen® Leo

Calcium phenoxymethylpenicillin

**still preferred in most upper respiratory tract infections**

- Prolonged therapeutic serum levels
- Unsurpassed activity against streptococci and pneumococci
- Thrice or twice daily dosage



For further information, please request literature.



**LEO PHARMACEUTICAL PRODUCTS - DENMARK**

LEO PHARMACEUTICAL PRODUCTS SARATH LTD., 224, SYNGROU AVENUE, 176 72 KALLITHEA, ATHENS, GREECE.



## The new generation of lipid reducers:

### **Lipo-Merz® and Lipo-Merz® retard**

The monosubstance Etofibrate (INN), active ingredient of Lipo-Merz® and Lipo-Merz® retard, is a product of Merz research. All pharmacological and clinical criteria have demonstrated the excellent effectiveness and good tolerance of Lipo-Merz® and Lipo-Merz® retard.

#### **Etofibrate**

- reduces elevated total cholesterol and triglyceride levels significantly;
- has a favourable influence on the atherogenic index thus reducing the risk of atherosclerosis;
- reduces increased platelet aggregation;
- improves organ perfusion by reducing elevated plasma viscosity.

**Lipo-Merz®** for initial treatment. It is recommended to take 1 capsule 3 times daily.

**Lipo-Merz® retard** for long-term treatment. The administration of 1 capsule daily guarantees optimum patient compliance. Long-term treatment with Lipo-Merz® retard can be carried out with good tolerance and without loss of effectiveness.



Merz + Co. GmbH & Co. D-6000 Frankfurt/Main 1 Federal Republic of Germany  
Agent: Joseph Cassar Ltd., 54, Melita Street, Valletta/Malta



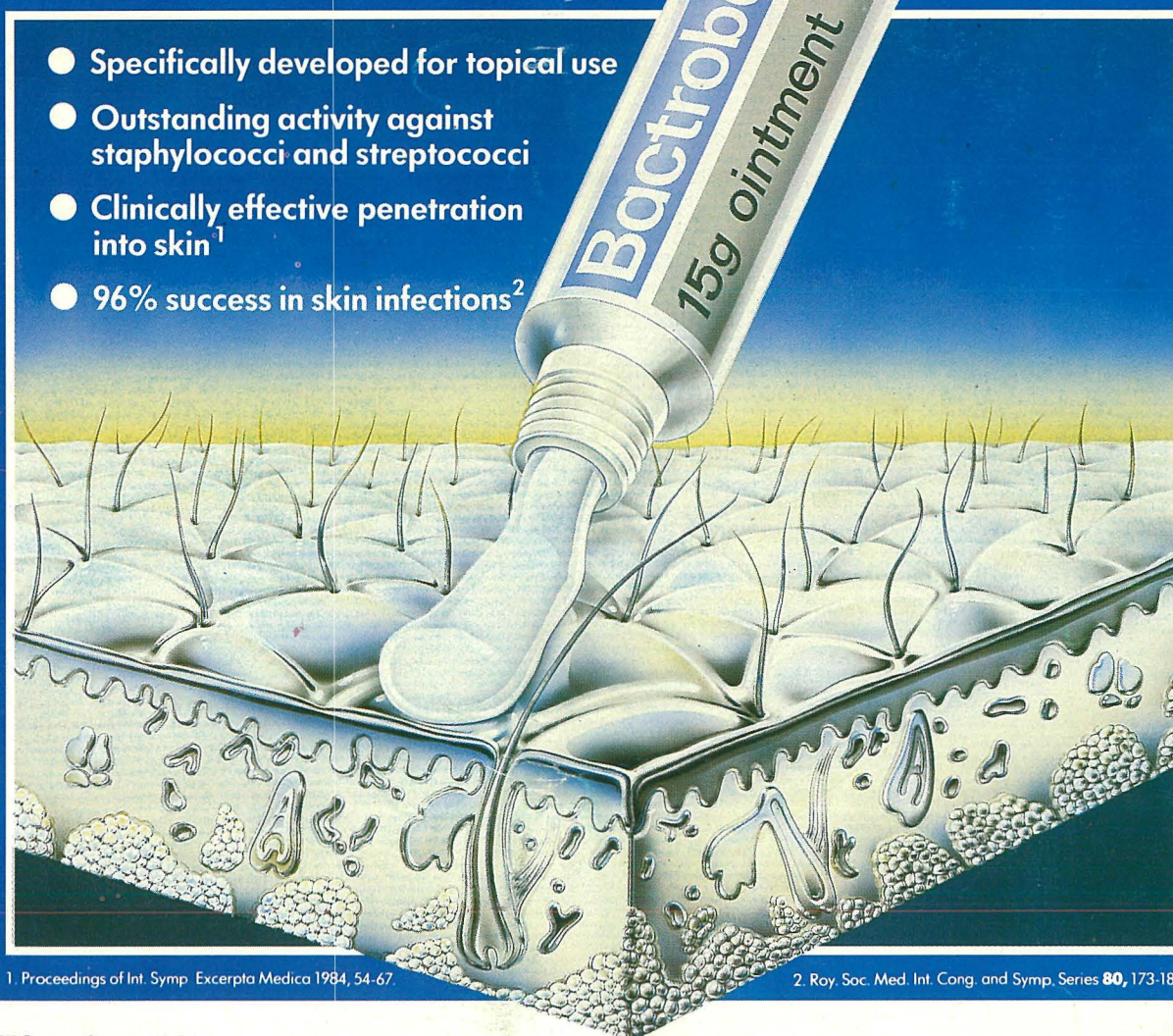
# Bactroban

mupirocin

New

Today's topical  
antibiotic.  
From Beecham.

- Specifically developed for topical use
- Outstanding activity against staphylococci and streptococci
- Clinically effective penetration into skin<sup>1</sup>
- 96% success in skin infections<sup>2</sup>



1. Proceedings of Int. Symp. Excerpta Medica 1984, 54-67

2. Roy. Soc. Med. Int. Cong. and Symp. Series 80, 173-180.

## PRESCRIBING INFORMATION

**Presentation** BACTROBAN ointment: A presentation of mupirocin 2% weight/weight in a white, translucent, water-soluble, polyethylene glycol base. Available in 15g tubes.

**Activity** BACTROBAN is a topical antibacterial agent, active against those organisms responsible for the majority of skin infections, e.g. *Staphylococcus aureus*, including methicillin-resistant strains, other staphylococci, and streptococci. It is also active against Gram-negative organisms such as *Escherichia coli* and *Haemophilus influenzae*.

**Indications** Acute primary bacterial skin infections, e.g. impetigo and folliculitis.

**Dosage and Administration** Adults and children: BACTROBAN ointment should be applied to the affected area up to three times a day, for up to 10 days. The area may be covered with a dressing or occluded if desired.

**Precautions** When BACTROBAN ointment is used on the face care should be taken to avoid the eyes. Polyethylene glycol can be absorbed from open

wounds and damaged skin and is excreted by the kidneys. In common with other polyethylene glycol based ointments, BACTROBAN ointment should be used with caution if there is evidence of moderate or severe renal impairment. Use in Pregnancy: Studies in experimental animals have shown mupirocin to be without teratogenic effects. However, there is inadequate evidence of safety to recommend the use of BACTROBAN during pregnancy.

**Contra-indications** Hypersensitivity to BACTROBAN or other ointments containing polyethylene glycols. BACTROBAN ointment formulation is not suitable for ophthalmic or intra-nasal use.

**Side Effects** During clinical studies some minor adverse effects, localised to the area of application, were seen such as burning, stinging and itching.



Further information is available on request from  
**Beecham Research Laboratories**  
Brentford, Middlesex, England

BACTROBAN and the BRL logo are trademarks.