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THE GHANA PHARMACEUTICAL JOURNAL

OFFICIAL ORGAN OF THE PHARMACEUTICAL SOCIETY OF GHANA

Volume 12 Nos. 3 – 4 July – December, 1989

THE GHANA PHARMACEUTICAL JOURNAL

NATIONAL HEADQUARTERS OF THE PHARMACEUTICAL SOCIETY OF GHANA
SOCIAL ADVANCE INSTITUTE BUILDING
P. O. BOX 2133, ACCRA

VOLUME 12 NOS. 3 & 4 DECEMBER, 1989

Contents

The Ghana Pharmaceutical Journal is published quarterly by the Pharmaceutical Society of Ghana at the Social Advance Institute, Accra. Correspondence concerning editorial contents and advertisements should be addressed to: The Editor, Ghana Pharmaceutical Journal, P. O. Box 2133, Accra, Ghana. * All materials intended for publication should be submitted typewritten, in double line spacing on one side of the paper and in duplicate. Illustrations (apart from tables) should be limited to only two. Materials accepted for publication may be subjected to editorial revision and, in the case of original papers, once they are published in this journal they cannot be published elsewhere except by agreement. Authors should conform with current style in the presentation of papers, indicating where tables and figures should be inserted. * Views expressed by contributors do not necesssrily reflect the opinion of the Editor. * Partial or total reproduction of the contents of this issue in any manner or form is prohibited.

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ANNOUNCEMENT

COMMONWEALTH PHARMACEUTICAL ASSOCIATION

Primary Health Care Data Base

As a result of a current study of the role of pharmacists in Primary Health Care (PHC), the Commonwealth Pharmaceutical Association (CPA) has decided that it would be valuable for it to compile a data base of pharmacists who have been involved in *non-pharmaceutical* primary health care activity (ies) in their localities.

So, if you have participated in PHC activities such as health education, the provision of general health care in rural areas, promoting good hygiene, etc., which are not part of the traditional pharmaceutical services of purchasing, preparation and supply of medicines from pharmacies or pharmaceutical departments, then do furnish the CPA Secretariat with the following Information:

(*a*) Name and address for correspondence

(*b*) Qualification and major appointments held

(*c*) PHC activities: Brief description of activity(ies), country(ies) and date(s).

PLEASE, USE THE ADDRESS GIVEN BELOW:

THE SECRETARY
Commonwealth Pharmaceutical Association
1 Lambeth High Street
London SE 1 7JN
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Telex: 265871 (MONREF G):
Quote 72: MAG 19186 in first line.

EDITORIAL

A Bold Move is Made

THE idea of decentralization, ever since it came up with the launching of the Economic Recovery Programme (ERP) by the PNDC Government in 1983, has been translated into reality in different forms culminating perhaps in the establishment of the District Assemblies.

Talking about decentralization of professional services, and in particular that of the practice of pharmacy, repeated calls have been made to pharmacists to do away with centralization in some few cities and to extend their services to the rural areas where over 70% of the population live and where, as a result of no qualified pharmaceutical services, drug peddlers have been enjoying a field day giving rise to unjustified deaths.

In the last edition of the Journal (Vol. 12, Nos.1 and 2) we lamented the fact that several years after we ourselves had seen the need to extend our services to the rural areas nothing at all had been done, at the time of writing, to realize this laudable idea.

Now, happily, what looks like the much awaited bold move has been made. The Pharmacy Board has come out with a directive that henceforth fresh pharmacy graduates after their national service will have to work in public hospitals for another three years before they are allowed to go to the private sector.

Certainly, this move is not merely aimed at satisfying the desire to decentralize pharmaceutical services for we believe it is also intended to make fresh graduates acquire sufficient experience in hospital pharmacy practice and to better equip them to forestall the abuses they are subjected to in the private sector by unscrupulous proprietors who take undue advantage of their "greeness."

It is important at this juncture to note that those freshly qualified pharmacists who will be posted to the rural areas will not comply without showing some forms of resistance and the reason for this is not hard to find.

In the first place, conditions of service for pharmacists working in public hospitals and clinics are rather poor compared with those of their closest partners with whom together they render health services in these establishments.

Secondly, social and other conditions prevailing in these areas are far from being condusive to any meaningful pharmacy practice to go on.

Naturally, the potentiating effect of these two negative factors is enough to dampen the zeal of even the most nationalistic young professional with any good intentions.

It is against this background that we feel this self-imposed move to get qualified pharmaceutical services to the rural areas is a bold one.

The Ministry of Health (MOH) can only reciprocate this gesture by seeing to the improvement of service conditions for pharmacists in its employment.

In addition, the Ministry of Health, in conjunction with the Pharmacy Board and the Pharmaceutical Society of Ghana should ensure that all the pharmacy departments to which these young pharmacists are sent are provided with the needed basic equipment as this would go a long way to enhance job satisfaction and eliminate frustration.

In conclusion, we wish to chip in this short advice to all pharmacists involved in this programme, especially those who will be posted to the districts of the hinterland and this is that they should discharge conscientiously their duties, which should include thorough supervision of the activities of the chemical seller within their districts which, of late, is getting out of hand. They should also involve themselves in other social and economic development programmes of the community in which they find themselves.

Pharmacy Awareness Campaign

—JOYCE ADDO-ATUAH (MRS)
POLICE HOSPITAL
PHARMACY DEPARTMENT
ACCRA

I was just reading through an issue of the journal and a letter by a fellow pharmacist caught my attention. She was obviously saddened by the fact that there seems to be little or no awareness of the correct role or social level of the Pharmacist in the public eye and suggested a kind of pharmacy awareness campaign with the help of the mass media as a solution to the problem.

Much as I would agree with her suggestion as a similar action has been taken by the National Pharmaceutical Association (the British counterpart of the Pharmaceutical Co-operative here) in recent times to increase public awareness by their "Ask Your Pharmacist" campaign, they went further than just slogans in order to elicit the height of success the campaign achieved.

In the light of this, I would like to make the following suggestions: I still hold fast the age-old adage that "Action speaks louder than words" in that society weighs or places people by the latter's actions and behaviour and not by their long speeches of who they are or think they are.

To be precise, in our hospitals for example, how many pharmacists are seen by the public, that is patients, etc. being actively involved in patient care either directly by way of patient interviews, counselling etc. or in helping in taking decisions as to the type of medication to use or the need to discontinue one medication or the other.

Again, how many hospital Pharmacists bother to know something about the other health disciplines or what is going on in the other departments in the hospital all in the name of total health care? We should realise that knowledge is power and we cannot integrate properly as health care professionals with allied professionals if our knowledge of other areas apart from drugs is scanty or non-existent.

In the membership of various committees in the hospital (with perhaps the singular exception of Drug Committees), how many pharmacists can be counted among the membership of such committees not just as members but those of import?

In the areas of community practice, we can do a lot to set a clear distinction between a pharmacy and a chemical seller's shop, not merely by the name but by the level of professionalism and the spirit of service that can be found in the former as against the business of selling drugs by the latter.

With this, a few questions come to mind how many pharmacists in general practice as superintendent pharmacists actually go to work regularly, or if they do, take any meaningful part in the actual running of their premises? Again how many pharmacists make it a rule to ask questions about prescriptions presented to be served or requests for purchase of drugs for fear of losing business to the next premises?

I dare to state that after the initial hurdle has been cleared, people in the community would rather prefer to frequent the pharmacy where service to the people seems to be the overriding factor than the other type of premises because experience has shown that people would normally want to know more about their medication, for example, why the doctor has prescribed a particular medication, is it necessary, is it the best available, any contra-indications with food or alcohol, the expected side effects etc.

Community involvement of pharmacists is another area of great importance. How many pharmacists for example are involved in the development of their areas of residence or of operation as for example on serving on Hospital Management Boards? In the just ended District Level Elections, how many of us found it necessary to leave our business and get involved or were sent in to the assemblies as government appointees as ha been done to members of othe professions?

Another area of great worry to m is the apparent lack of the desire b pharmacists especially the young one to persue further studies in specialise areas of pahrmacy like Clinical Phar macy, Pharmacy Technology, Com munity Pharmacy Practice, Qualit Control etc. and even take smalle areas within these, such as Dru Information, Pharmacokinetics etc under Clinical Pharmacy.

How can a profession grow if he members regard the attainment of th first degree as all-sufficient to func tion in all areas for long periods o time on end without recourse t further studies in any particular are of specialisation.

In this wise, pharmacy is uniqu among all other professions in thi country, and unless we start havin holders of PhD's and professors o specialised areas of pharmacy i Industry, Community Practice, hospi tals, research institutions and consul tancy services, I am afraid we wil continue to stand still as a professio and fail to exert any real impact o society as a body.

All that I am driving at is that n amount of slogan shouting would d the trick and place us on the pedesta that we claim to deserve, but a members of such a noble profession we can project ourselves more clearl as servants of the people seeking th common good who are thus worthy t be accorded the due respect an recognition that we deserve by ou active involvement and total commit ment and sincerity of actions wherever we may find ourselves.

LETTERS to the Editor

Chemical Sellers

Sir,

In a communique issued at the end of their last Annual General meeting held at the University of Cape Coast, Chemical Sellers claimed they now have in their fold graduates (other than holders of Pharmacy Degrees) and for that matter they should be permitted to sell all classes of medicines.

For such an embarrassing (to the chemical sellers) and cruel (to Ghanaians) statement to come from those who are supposed to assist pharmacists in their job of distribution of medicines clearly underscore their ignorance about drugs.

Perhaps pharmacists ought to be blamed for this sorrowful state of affairs which is not in the interest of any Ghanaian.

In order to raise chemical sellers from this deep state of ignorance, I suggest pharmacists draw up a comprehensive programme to educate them on who they and pharmacists are, the relationship between them and pharmacists and more importantly what drugs actually are.

This measure could save all of us from a possible holocaust.

—Edwin Quarcoo
Ampadu Pharmacy
Accra

Cash and Carry

Sir,

The Ministry of Health (MOH) will soon institute the "Cash and Carry" drug supply system as it indicated it would some months ago.

What this means is that every public pharmacy department will as from the date of implementation no longer collect drugs free but will purchase these from the central medical stores and elsewhere using monies they have accrued since the introduction of the cost recovery programme and sell them to patients making marginal profits.

What this further means is that, the pharmacy that gives out drugs away for free will eventually run at a loss and may even gradually eat up its capital.

I would like to use the columns of this journal to appeal to all health workers and indeed the general public to take note of this impending new order and desist from making demands for free drugs from pharmacists.

—Joseph Turkson
Korle-Bu Teaching Hospital
Accra

ORS.....

ORAL REHYDRATION SALTS

NOW ON SALE!!

Diarrhoea kills our children because it makes them very dry (dehydrated). They lose a lot of body salts and sugar and that kills.

ORS (Oral Rehydration Salts) Mixed with water and given to baby will quickly replace the lost salts and sugar, This will give baby, strength.

Buy some packets today and keep them in case your child gets diarrhoea.

Available in Hospitals, Pharmacies and retail outlets throughout Ghana.

Remember ORS can save a life.

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another high quality product
from the **GSMP**

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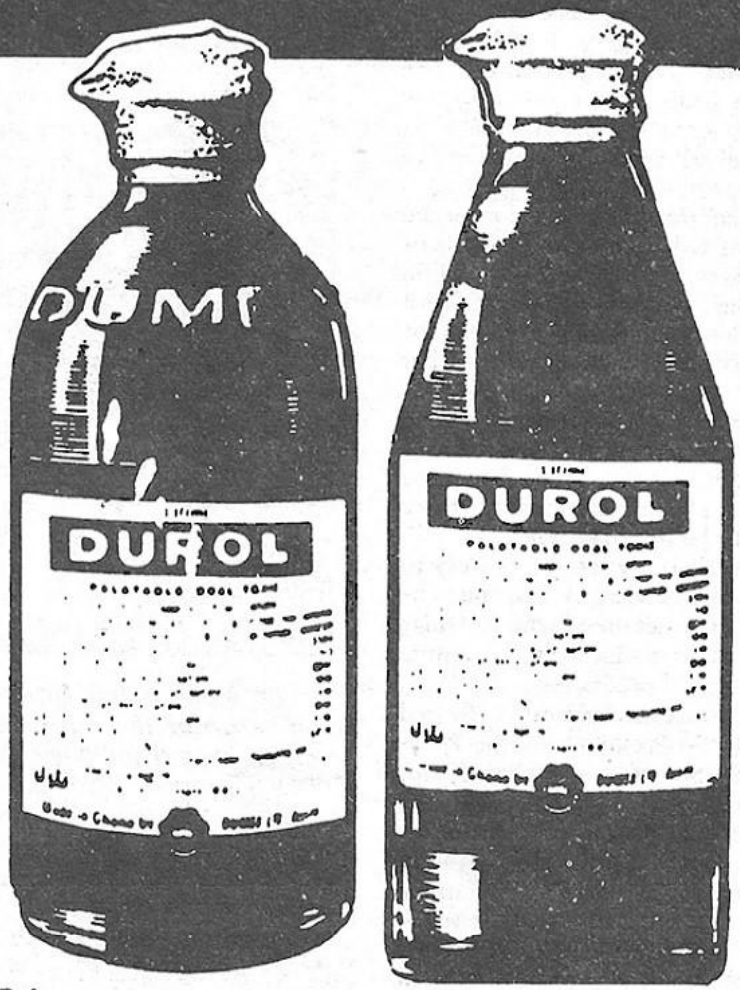
Energy for the whole family

*

Available in all leading Pharmacy shops throughout Ghana



DANAFCO

Leading name in medicine

Enforcement of Pharm. Act Will Eliminate Problems

– Nana Akuoko-Sarpong

NANA Akuoku Sarpong, PNDC Secretary for Health has noted that there are serious problems, where drugs are concerned, from the production level through distribution, dispensing to consumption.

He made this remark in a speech read on his behalf by the Director of Medical Services, Dr. Moses Adibo during the opening of the 40th National Conference and Exhibition of the Society on Thursday, September 21.

The Secretary therefore urged pharmacists to allow the enforcement of the Drugs Act to receive their attention at all times in order for these problems to be managed.

Nana further advised the Society to lay down strict criteria and punishment for its members who infringe regulations that would bring disrepute to the pharmacy profession.

In his welcome address delivered earlier on, the President of the Pharmaceutical Society of Ghana, Mr. E. O. Gyamfi explained that the purpose of the theme of the Conference "Pharmacy Practice in Ghana in the Next Decade" was to "examine and critically assess the current functions, training, recognition and legal status of the pharmacy profession with a view to broadening and improving, as the case may be, these factors in order for the profession to be able to cope with the new social, political and economic environment which we anticipate to prevail in the next decade as a result of recent policies adopted by the Government."

Touching on pharmacy education, the President said there was the need to enrich pharmacy curriculum to match up with the new pharmacy practice likely to prevail in the foreseeable future.

Training, he said, should be biased towards patient care rather than turning out "product merchants" and in that case "clinical pharmacy as a

Dr. Moses Adibo, Director of Medical Services, reading the opening address on behalf of the PNDC Secretary for Health. On his left and right are Mr. E. O. Gyamfi (outgoing President) and Mr. F. K. Bruce (Acting Director of Pharmaceutical Services) respectively.

The outgoing President of the Society, Mr. E. O. Gyamfi reading his welcome address.

component of undergraduate training should be intensified and postgraduate training introduced."

He suggested that pharmacists should interact more with other health personnel through seminars and clinical meetings at work places as these would foster a sense of team spirit and would bridge the communication gap between them. Mr. Gyamfi particularly commended the rural orientation courses jointly organized by the students of the Faculty of Pharmacy and the School of Medical Sciences all of the U.S.T. and the Ghana Medical School, Legon.

He suggested that all efforts be made to provide all populations with health facilities with emphasis being placed on primary health care and once again appealed to pharmacists to extend their services to cover the rural areas.

"The Pharmacy Board", he said "should evolve a system of allocating pharmacy premises to populations in such a way that pharmacies and pharmacists are evenly distributed to eliminate quackery."

The President was however happy that in the face of many operational constraints, the Board has been seriously enforcing the laws regarding the practice of pharmacy and inspecting pharmacies. To make the Board more effective, he appealed to the PNDC Secretary for Health to assist it with more vehicles to facilitate mobility.

A section of the audience at the conference.

Mr. Gyamfi thanked the Government for measures it is adopting to boost local manufacture of drugs and urged manufacturers in turn to do research into traditional medicine.

The Pharmaceutical Society, the President said, fully supported the three-year compulsory service imposed on newly qualified pharmacists.

The "cash an carry" drugs supply system, according to him meant additional responsibility to the pharmacist and for this and other reasons humbly asked in return from Government "reasonable allowances and improved conditions of service for all grades of pharmacists and technicians."

The Keynote address on the theme of the Conference (the full text is presented elsewhere in this issue) was read by Prof. K. Boakye-Yiadom, Head of the Pharmaceutics Department of the Faculty of Pharmacy, U.S.T.

An exhibition of pharmaceuticals was later on opened by Dr. Adibo. This was followed by a cocktail reception by courtesy of Danafco Limited to close the day.

The second day of the Conference saw the presentation of Scientific Papers under the Chairmanship of Mr. T. T. L. Bernasko, Training Manager for the UpJohn Company.

Dr. G. M. Konning (Faculty of Pharmacy, U.S.T.) read a paper entitled "An Appraisal of Aids against AIDS" in which he dilated on the AIDS disease and talked about methods available for its control.

Mrs. Christiana Atuobi (Faculty of Pharmacy, UST) made a presentation on behalf of Dr. Abaitey, also of the same University. The title of the paper was "Anti-Sickling effect of *Grifonin*" and in this she outlined the potentials of *Grifonin* as an anti-sickling agent.

Dr. J. K. Kwakye (Faculty of Pharmacy, UST) spoke on the topic "NMR as a tool for quality control of

A section of the exhibition mounted during the conference being inspected by the Director of Medical Services, Dr. Moses Adibo.

Drugs", a useful topic at this time in history when fake drugs have seriously infected the pharmaceutical market.

Mr. L. L. Crabbe (Managing Director, CIS Pharmacy) presented the paper "Plant Medicine in Contemporary Pharmacy Practice" with a view to encouraging more pharmacists to go into the manufacture of medicines from locally available ingredients using his own product "Flagellates" as an example.

Prof. Ayitey-Smith, (University of Ghana Medical School, Korle-Bu) talked on "Medicinal Plants with Anthelmintic properties with special reference to Clinical Trial of *Elaeophorbia drupitera* on Guinea Worm infestation."

These papers will be reproduced in full in future editions of the Journal.

Also on the second day, a symposium on the theme of the Conference took place. This was done under the Chairmanship of Dr. S. O. Larbi (Vice President, P.S.GH.). Panelists were Dr. N.I.Y. Fiagbe (Faculty of Pharmacy, UST), Miss Jane R. Onny (Acting Managing Director, Gihoc Pharmaceuticals), Mr. Isaac Adams (Resident Pharmacist, Ridge Hospital) and Mr. Osafo-Sampong, Barrister-at-Law and a member of the Pharmacy Board.

Their contributions, except that of Mr. Adams which was not available at the time of going to press, are reproduced elsewhere in this edition of the Journal.

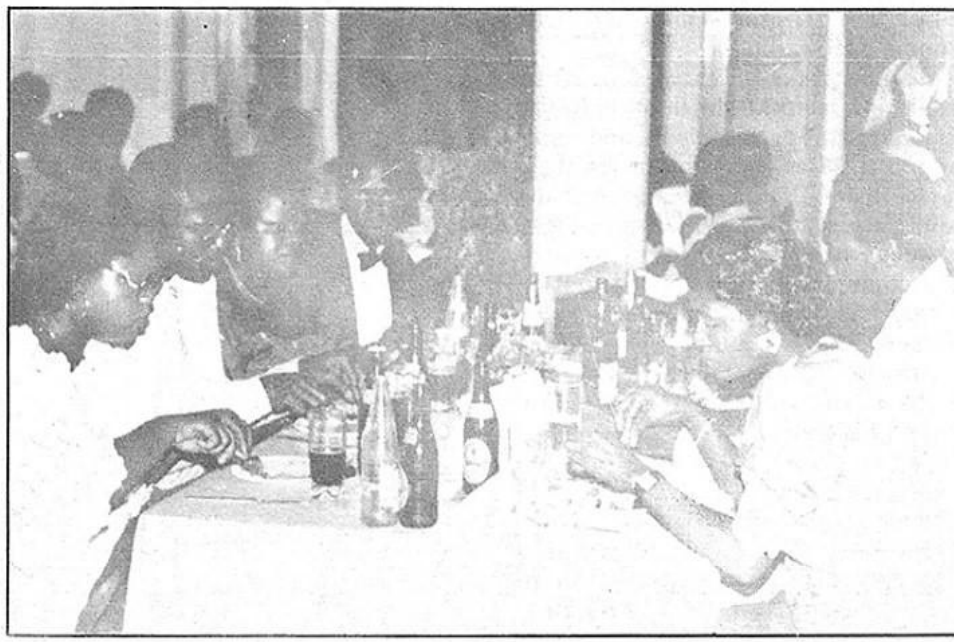
The Hon. General Secretary's Report as well as that of the Hon. Treasurer were presented later on in the day. This was then followed by the discussion of these reports.

In the evening, a cocktail by courtesy of the Greater Accra Branch of the Society was enjoyed by participants.

The last day of Conference, Saturday, September 23 witnessed the usual group meetings and an open forum.

Election of fresh officers was done later on in the day. This was characterized by intelligent and interesting campaign speeches by the contesting presidential candidates, Mr. David Anim-Addo and Prof. K. Boakye-Yiadom. The latter came out wi flying colours.

A dinner cum dance to round o the Conference was held at the St Hotel in Accra. Some highlights this dinner were the induction Pharmacists registered during t current year and the year befor presentation of the John Ocran Awa to the best students in the Profession Examinations (Benjamin Botwe, 198 and Alfred Owusu-Darko, 1988) ar the novel Danafco Award for the be final year student which went Mr. Enoch de la Porte.



Some members of the Society enjoying the sumptious dinner at the Star Hotel.

Correction

IN the July-December, 1987 edition of the Journal we stated that Mr. T. C. Corquaye was born in 1934; this was a mistake. His correct date of birth is August 23, 1940. We regret any inconvenience caused.

Pharmagold

THE Board of Directors of Pharmagold Limited under the Chairmanship of Mr. E. O. Gyamfi, has, at the last Shareholders' meeting held at Christ the King Hall on September 21, been given the mandate to continue in office for another one year term.

Retention Fees

PHARMACISTS who wish to reta their names on the Register of Pha macists will as from January 1990 pa ₵5,000.00.

The increase from ₵ 3,000.00 w approved by the 40th Conferenc

Pharmacy Practice in Ghana In the Next Decade

Below are the papers presented by three of the four panelists at the symposium on the theme of the 40th conference. That of the fourth panelist was not available at the time of going to press.

The Paper Presented by
Mr. Osafo Sampong
Barrister at Law and Member of the Pharmacy Board

Until the present Act (Pharmacy and Drugs (Act 64) was passed in 1961), the laws governing the practice of the profession were contained in the following ordinances: Cap 70, Cap 73 and Cap 74. Cap 70 was the Pharmacy and Poisons Ordinance (No. 21 of 1946); Cap 73 was the Dangerous Drugs Ordinance of 1935 and Cap 74 was the Undesirable Advertisements Ordinance of 1944.

I recognise that by making extensive reference to these statutory provisions, I may risk being prosaic, but be that as it may, the parameters within which the profession is permitted to operate have always been laid down by law. This makes reference to the law inevitable.

These three ordinances were the forerunners of Act 64. Cap 70 was enacted to make "better provision for the regulation of the profession of pharmacy and the control of the trade of drugs and poisons". Cap 73, the Dangerous Drugs Ordinance was an ordinance "to make further and better provision for the regulation of the importation, exportation, manufacture, sale and use of opium and of poisons and other substances that have properties contained therewith". As far as Cap 74 is concerned, it was an ordinance "to prohibit certain acts of undesirable advertisements".

As I have already mentioned earlier on, in 1961, Act 64 i.e. the present Pharmacy and Drugs Act was passed and repealed the ordinances I have alluded to.

The preamble states clearly that "an Act to regulate the pharmacy profession and to control the supply, manufacture, storage and transportation of drugs". This Act was passed to consolidate all provisions of the ordinances I have referred to, namely, Cap 70, 73 and 74.

The practice of this profession was not accorded its full place until the early sixties. In the early stages, through ignorance, pharmacists were equated with dispensers and it was rather late that a whole pharmacy faculty was established in the University of Science and Technology to cater for the training of pharmacists and the needs of the profession. Out of ignorance, pharmacy has for a long time been considered as a peripheral profession.

Ironically, it is under this Act 64 and in 1961 that recognition was first given to the chemical seller. As a result of this recognition, there has been an upsurge in the chemical seller's activity, not only in rural areas, but in cities as well. The idea of recognising the chemical seller was to move him from the backyard and allow him to operate in the open legitimately and to complement the efforts of the pharmacists. He was not supposed to operate in the urban areas, but what do we see today? These noble ideals have not been realised. Unless the profession is able to stem the tide, the chemical seller is going to make serious inroads into pharmaceutical practice. The chemical seller has been able to form a strong pressure group because he claims to practice in the rural area and has close contact with the ordinary people. Mind you, he is capable of politicising his role.

Having spoken about pharmacy practice as it was and as it is today, let me now attempt to discuss what it is likely to be in the next decade. Fortunately for me, I am privileged to have a copy of the Drugs, Cosmetics and Poisons Commission Law and a draft copy of the Pharmacy Council Law. These drafts have been in existence since the beginning of this decade, and it is hoped that by the end of this decade, they will become statute laws.

Under these two draft laws, it is envisaged that there will be two statutory bodies; one body (Council) to control the profession and another to control drugs, cosmetics and poisons. It would look as if we are going back to the position under the ordinances I have already referred to - Cap 70, 73 and 74. However, this is not exactly the case, it is the first time that cosmetics have been taken care of. All along, cosmetics have been subsumed under drugs and poisons. Furthermore, it is envisaged that disciplinary proceedings will be taken care of by the professional body and not by the Board or the commission.

The commission would concern itself with drugs and cosmetics. In the case of education, registration and all matters dealing with the profession would be handled separately by the Council. By entrusting the Council with these functions, it is expected that the inroads which the chemical seller has been making into the practice of pharmacy would be halted. His presence is still acknowledged and there will still be the need to acknowledge his presence without according him professional recognition. This is necessary in order to be able to control his operation for the benefit of the general public and for the protection of the pharmacy profession. It is ironical that at the moment, there is virtually no sanction against the chemical seller, apart from closing the shop when there is an infringment on the law. It is expected that in the next decade, it will be possible to discipline the chemical seller and to impose severer sanctions and appropriate penalties for any infaction of the law. It is not expected that within the next decade, he will belong to an independent body, he will still operate under the umbrella of the commission.

Before I am done, I would like to mention some of the main features of the proposed law which is going to govern the practice of the profession for the next decade or so.

The profession will be governed by a Council, not the Board or the Society. The membership of the Council is predominantly made up of pharmacists. The chairman of the Council shall be a registered pharmacist and not the Director of Pharmaceutical Services. There would be no representation of the medical profession on the Council, but of course, there still is the need for a lawyer, but this lawyer must be an eminent jurist.

As I have already stated, matters affecting discipline would be handled by a committee - namely, the Disciplinary Committee of the Council. It is also envisaged that a member of the Council shall act as a treasurer and he would be generally responsible for the proper administration of the finances of the Council. It is the Council which will be charged with the general responsibility of securing the highest practicable standards in the practice of the profession and for the training, examination and registration of pharmacists.

The proposed law ensures that apart from the state and a qualified pharmacist, no other person or body of persons shall own a pharmacy shop. If the pharmacy shop is a body corporate, the majority of shareholders would have to be pharmacists. I think the rationale behind it is to check the practice which obtains in some places where pharmacists have been turned into mere employees.

The commission would retain the main functions of the Pharmacy Board as far as they relate to the regulation and control of drugs.

The commission is expected to set up at least four committees and these are:

a) registration and classification committee

b) committee on safety of drugs

c) a pharmacopoeia committee

d) agricultural chemicals committee (pesticides and veterinary products)

For the first time minimum standards have been prescribed for cosmetics and agricultural chemicals.

The committee would be expected to keep a register of herbal medicines and to control their manufacture, supply and distribution.

Furthermore the commission would be required to register and regulate the manufacture, supply and distribution of homeopathic drugs.

I can foresee in the next decade, i the draft becomes law, and if it i adequately enforced, a more vigilan Council and vigilant commission mor dedicated to uphold the highes standards as required of the profes sion.

I must admit that the topic migh not have been exhausted but at leas the most important points have bee highlighted. I hope you will thin about these points and give the pro posed law your full support when it i finally enacted.

The Paper presented by
Miss Jane Rose Onny
G.M. GIHOC Pharmaceuticals

THE Pharmaceutical Industry started in Ghana in the late fifties after independence. However, in the early sixties what was termed the industry was mainly packaging of a few medicaments and household chemicals in Accra and Tema by some Multinational Drug companies.

In the late sixties, pharmaceutical dosage forms such as tablets, capsules, syrups, injections, etc. were being manufactured from imported pharmaceutical raw materials and excipients and this practice has been maintained throughout the last two decades. Hence, from the import licensing seventies to the auctiongoing eighties, raw materials have been imported to produce dosage forms side by side with the importation of finished dosage forms.

Although in 1971, the Commercial & Industrial Bulletin No. 2009 of 17th December, 1971, restricted the importation of some pharmaceuticals, this was thrown overboard together with the regime that introduced it and we continued to produce and import the same dosage forms. Despite all these, we are still informed that only about 30% of the Ghanaian population uses these pharmaceutical dosage forms.

The question then is what do the 70% of the population use when they are sick? We all know that these are Traditional Medicines. I therefore believe that the drugs which must be produced by our industries must include at least some of these Traditional Remedies. And this means that herbal medicines must be identified and prepared for use by the Pharmacist who is the lawful manufacturer, custodian and distributor of medicines.

Therefore, if the Ghanaian Pharmaceutical Industry is to survive in the next decade, we should:-

1. Also recognise the important role that herbal medicines play in the total health care of our people and we should actively participate in a cooperative effort with institutions such as the Centre for Scientific Research into Plant Medicine, which is conducting research into some of these traditional herbs.

2. For continuity in this, plantations must be set up in various parts of the country by the manufacturing companies specifically to grow medicinal herbs with proven and potentially useful therapeutic efficacy. But alas! How much does the Pharmacist of today know abou herbal remedies?

Therefore, in the next decad Pharmacists should active grasp herbal knowledge and ga ground in this area of dru therapy which was once ou domain before the therapeut revolution, as we were taught i the history of our professio Herbal remedies are also pote and *not* without side effects drug interactions. Therefor they must be handled by Pha macists who have this trainin

Also, Pharmacies should b places for the sale of the products because they are th only places equipped for storin such products.

Pharmacists should be the leg timate manufacturers, for this their job.

In order to achieve this, Pha maceutical Education mu include a regular section herbal remedies and the Pharma ceutical Society must arrange continuing educational series o it by means of lectures, sem nars, etc.

Raw Materials

In the next decade, I will like to see a Fermentation Plant in Ghana and a Petroleum base drug in Nigeria. Thus, it will not be out of the way if we can produce an antibiotic and an analgesic raw materials on the West Coast.

For excipients, I know that we are already in the early stages of production of various starches and microcrystalline cellulose. We are already using local Kaolin for external preparations and these must be perfected in the next decade.

Pharmacopoeia

If we are to indulge in our original herbal preparations and excipients, then,

We must have ways and means to standardise and have specifications for them. Hence, there will be a need for a local Pharmacopoeia. It may not necessarily be Ghanaian, but at least African. It is only in this way that our country can survive the throngs of Pharmaceutical Industrialisation.

Like India and some other so-called Third World countries, we must produce our own machinery and equipment so that we do not go back to the times when a tiny plate or spring renders an expensive machine idle.

If Pharmacists can take the right decisions on these and give the right advice, I am sure our Pharmaceutical Industry will not depend solely on other countries and therefore on foreign currency which is very hard to come by but will have a strong Pharmaceutical base.

And in this way, there will be health for all in the year 2000.

The Paper presented by
N. L Yao Fiagbe
Department of Pharmaceutical Chemistry, U.S.T., Kumasi

Definition and Roles

A drug is a chemical or a preparation used for diagnostic, therapeutic, or proplylactic purposes which produces chemical and biological effects in the body. In some individuals, under some conditions, in some combinations or circumstances of illness, diet, or time, drugs may produce unexpected and undesirable results or may prove therapeutically ineffective. Hence, any decision on drug therapy and its execution must involve a careful weighing of the expected benefits against the possible risks. Each decision requires a judgement. In the interest o fthe patient that judgement should be as *"highly informed"* as is humanly possible.

Pharmacy therefore is and should be an integral part, a sub-system of what should be the health service delivery system of the nation.

All pharmacists in their many roles practice within the health care system.

Some of them are involved in the

a) decision-making process concerning the utilisation of drugs;

b) all dispensing pharmacists are deeply involved in the execution of the physician's drug decisions;

c) The pharmacists should have access to pertinent information about drugs and about their use by patients and participate in the weighing of expected benefits against possible risks and hence their professional judgement is of importance.

The character and quality of any professional service, whether it be that of a physician, a lawyer, an engineer, a soldier, or a pharmacist, is determined largely by the *character*, the *quality*, and the usefulness or the practicality, of the *education* and *training* he has received.

The ultimate objective of any professional education is to produce practitioners to provide an important, needed, and useful service.

Any rational judgement about Pharmacy education and any rational suggestion for change must be based upon a clear determination of the important, needed, and useful drug - related services which the pharmacist can, do, and should provide.

Health Service

My conceptualisation of the health service is that it is a *matrix*. The Pharmacist is one of the elements of the matrix because he provides a *drug-related* service to a patient to facilitate the achievement of the ultimate aim of the system, namely the recovery or the maintenance of the health of the individual.

Some of the matrix or components of the health delivery system are:

Physicians - of all categories

Dentists

Nurses - of all grades and categories

Allied Health Professionals

The Pharmaceutical Industry

Government Agencies

- at the state level
- at the regional level
- at the district level
- at the village/community level

Health Service Institutions

- Hospitals
- Clinics
- Nursing homes
- Maternity homes
- Educational institutions

Health Insurance Organisations of all kinds.

Consumer Groups/Co-operatives of all kinds etc. etc.

Within these matrix there are interrelationship between the Pharmacist and each of the other individuals, institutions and organisations. The forces which are to produce change in Pharmacy and in the health delivery system/service are diverse.

Next Decade of Pharmacy Practice

To be able to forecast for the next ten (10) years what sort of Pharmacy practice there should be, we must take note that:-

Students who are admitted into the Faculty of Pharmacy in 1989 will not graduate until 1993. These students will not become experienced practitioners until after

another three (3) to five (5) years or so. This puts the safe period at 1998.

These Pharmacists by 2,000 will barely be having their feet on the ground and to practice pharmacy as it is now.

With this background information what sort of training should they have? They will go through the present system of training which does not adequately take note of the matrix - the result is that the trained professional finds it difficult to leave the big cities and urban areas - He/She is afraid of his environment from which he emerged.

What then is the appropriate education for Pharmacy practice from the year 2,000?

Before I tackle that I want to observe that our present educational system though grand, well staffed and in some cases provided with expensive equipments, the training we offer are all in isolation of the reality into which the graduate is to find him/herself. So far, the sciences and health sciences one will advocate — "Health Sciences or Life Sciences University" where all those who are within the matrix should be under one roof sometimes to hear the interfaces within their specialised areas and that of those within his or her matrix.

Why give 4 years education to a sociologist student who does not know that he has a physiological functions which the physiologist cannot explain to him in sociological forms for him to understand?

Wise and forceful action to improve education has resulted directly in higher standards of practice in some cases with clearly increased benefits to those who receive professional services in our case in Ghana at a great expense to the majority in the rural areas.

Pharmacy Education

Substantial changes have occurred in Pharmacy education in the country. Having only one place - Faculty of Pharmacy-training is a limiting factor. There is no competition, no effective monitoring system for the students produced, the courses we offer nor their performance in the field etc.

The major change in Pharmacy education has been increased emphasis upon the basic physical, biological and pharmaceutical sciences. These sciences dominate the syllabus/curriculum.

Recently there is added a small portion of the course content devoted to general or liberal education referred to as "pharmacy administration" or Social Pharmacy".

Recently also some instruction has been introduced, described as "clinical pharmacy" this should emphasize *services* to patients who use drugs as contrasted to *services* connected only with drug products.

Because these two major changes are taught in isolation and in the case of the clinical component without a hospital setting, the students who benefited cannot put these knowledge effectively into practice. This is not a question of "half bread is better than none" it is poisoning and demoralising your students.

Attitudes, Motivations and Aspirations of Pharmacists

Professions change in response to both external and internal forces, but response to such forces is greatly affected by the attitudes, motivations and aspirations of the individual human beings who collectively comprise the profession. They may resist the forces of change, blunting them or changing their direction. They may welcome change and align themselves with the forces causing it.

One finds a great deal of dissatisfaction among some pharmacists if not all; however the nature of this feeling varies from group to group.

1.0 Resentments are expressed in economic terms;

2.0 Mounting Paper Work should be done according to the Act of Pharmacy Practice;

3.0 Monotonous practice - just pouring, counting, labelling - with little opportunity to use their full knowledge and professional skills.

4.0 Difficulty in communicating with other health professionals - especially with physicians. They feel that pharmacy is treated as a peripheral profession, not in the mainstream of health services. One sometimes hear that the pharmacist is the most *over-educated* and the most under-utilised of all professionals

Those who do not complain, o which there are very few, have take the initiative to alter some of th aspects of their practice and to over come some of the factors causin *discontent* and *frustration*. They hav changed their practices in many diffe rent ways to improve their services, t find new ways to serve etc.

Motivations which pharmacist exhibited for change are varied as thei attitude

— desire for greater economic reward

— desire for greater public recognitio

— desire to be of greater service t patients and to the public at large

Whatever the motivation it is grati fying to note that it is *towards change*

— "back to the good old days'

— forward to a bright, although undefined, future.

The greatest cry for change is for a profession of *greater service* and *stature*. The wish to provide professional services of greater effectiveness to those they *serve* and to the *public well-being*. So we need expanded and new roles for the past, present, and future pharmacists in their educational and training programmes.

It is obvious that because the education and training of the pharmacist so far does not take cognisance of the matrix I talked about earlier we have many and real gaps in the health care system as to

1. knowledge
2. practices
3. procedures
4. organisations and
5. communication which result in less than optimal benefit to patients who require drugs and drug therapy in order to recover or maintain health.

It is my conviction that *properly educated*, and properly trained pharmacist can fill or, at least, narrow some of those gaps.

Pharmacist of the future

The need to identify precisely the gaps in which improved pharmacy

services would be peculiarly effective in the improvement of patient care becomes relevant to bring out our motto: Amicus Humani Generis.

Clinical Pharmacy Education

The term clinical pharmacy was first used by a group of pharmacists engaged in developing drug information centres. Subsequently it has been used to denominate a wide variety of practice roles developed by individual pharmacists, groups, and institutions of education and service.

At present it is possible therefore only to describe the area as a spectrum of individual, group or institutional ideas.

At the one end of the spectrum is the practice of an individual community pharmacist who has expanded his dispensing practices to include patient medication profiles, more frequent consultation with prescribing physicians and, particularly, improved communication with patients.

The communication includes the reinforcement of the physician's instructions concerning administration, dosage and timing; possible interactions with other drugs being used concurrently, with foods or with alcohol; and expected therapeutic results.

At the opposite end of the spectrum in the practice of a hospital pharmacist who is stationed in patient areas of the hospital participating regularly in prescribing decisions, monitoring patients response to therapy, taking drug histories and keeping detailed records of drug utilisation and responses thereto, participating actively in the formulation of drug protocols and institutional drug policies and providing drug information to physicians, nurses and other health professionals.

Such pharmacists can be described as integral members of the health care team providing direct patient care.

In between these ends of the spectrum are many other forms of pharmacy practice including one or more of the needed services mentioned earlier. In a number of prepaid organised systems of health care, (Ghana has been talking about Health Insurance), there are pharmacy services and pharmacy systems designed expressly to meet the needs of such organisations and their patients (You find some of such systems in the firms and companies etc.).

Even though there is no single definition of "Clinical Pharmacy" or of the knowledge, skills, and roles involved, it is clear that there is one common idea which is present in all of the manifestations; that idea is an emphasis upon *DRUGS* as they are *UTILISED* by and in the *PATIENT* which is the inseparable and continuing concern of the evolving pharmacist. This is to be contrasted to the focus of the pharmacist only upon the *DRUG PRODUCT*, its distribution, control, safe keeping and dispensing. One must observe that although the concept of "Clinical Pharmacy" is still evolving it should be regarded as a powerful force internal to pharmacy producing change in the system of pharmacy and in the practice of pharmacists. It is supported by attitudes, motivations, and aspirations of a large number of individual pharmacists and by a growing emphasis in pharmacy education. It has and will continue to have the public endorsement. At the moment in this country there is only little evidence that physicians, other health professionals, hospital administrators or patients are urging that pharmacists provide clinical services. This situation may change, sooner or later as other health professionals (in the matrix I spoke about earlier) become more and more aware of the potential contributions to patient care and the patient's total environment.

I am convinced that there are many and real gaps, short comings in our health service delivery system as to knowledge, practices, procedures, organisation, communication etc. which result in less than optional benefits to patients who require drugs and drug therapy in order to recover or maintain health.

I am further convinced that properly educated and trained pharmacist can fill or at least, narrow some of those gaps. The need is to identify precisely the gaps in which improved pharmacy services would be peculiarly effective in the improvement of patient care and reduction of its cost. When such a task is completed I believe we shall have a rational definition of "Clinical Pharmacy" of "Social Pharmacy" and this definition will describe the practice of the vast majority of pharmacists who should be deeply involved with people and their health needs as they are met through drugs.

In the next decade therefore I personally will expect that Pharmacy education in Ghana should take great note of the matrix and the environment into which the educated and trained pharmacist is to operate.

What I am advocating for is Socio-Cultural elements. Such elements if introduced into Clinical Pharmacy education, Pharmacy training and Pharmacy Practice in this country will remove some of the gaps if not all in our present health delivery system. This Socio-cultural element should then be introduced into all our professional educational programmes, training programmes so that we can service within the matrix in every part of our community.

Resolutions from the Conference

THE Pharmaceutical Society of Ghana is to liaise with the Faculty of Pharmacy at the University of Science and Technology (U.S.T.) "to design the training needs of the pharmacist so as to orientate him more towards the challenges of patient care."

This intention was contained in a communique issued by the Society at the end of its 40th National Conference held in Accra.

The Society is also to intensify its involvement in the primary health care programme and to commit the expertise and efforts of its members to tap the enormous potential of herbal medicine so that by the year 2000 a significant volume of the nation's drug requirements could be manufactured from local resources.

The communique expressed the Society's concern over the fake drug menace and its desire to impress upon Government to institute the appropriate statutory laws to combat this.

In order to avert periodic shortages of the recently restricted drugs, which

incidentally are the primary therapeutic agents for the commonest diseases in the country, the Society resolved to assist the Ministry of Health to closely monitor the inventory levels of these drugs.

Finally, the communique stated that "having instituted a three-year compulsory post-qualification, government service intended to extend qualified pharmaceutical services to all districts, the Pharmaceutical Society calls on government to improve service conditions of pharmacists in the public sector and appoint a substantive Director of Pharmaceutical Services with his appropriate deputies in order to properly stratify the organizational structure at the Ministry of Hea as to improve efficiency and highten morale in the public s

The Pharmaceutical Society is pared to negotiate with goverr to bring this about so that pharm in the public sector will no frustrated."

Extension of Services to Rural Areas will mea more profits — DR. GRANT

THE annual turnover of the Ghana Co-operative Pharmaceuticals Limited (GCPL) could be raised should its operations be extended to the rural areas.

This was the view expressed by the PNDC Deputy Secretary for Health Dr. (Mrs.) Mary Grant in a speech she delivered at the 15th Annual General Meeting (AGM) of the company held at the Continental Hotel in Accra on August 24.

Dr. Grant who expressed her recognition of the importance of the co-operative idea to the economy of the country in general and to the Ministry in particular was also of the opinion that local production of pharmaceutical raw material and promotion of research would help greatly to increase profits in the long run.

Noting the importance of the weaning period of children, she urged her audience to come out with locally formulated weaning foods so that these will become easily available and at affordable costs.

In conclusion, the PNDC Deputy Secretary wished Co-operatives "many, many years of successful operations."

In an earlier address to welcome participants and invited guests the President of GCPL, Mr. E. Y. Sese noted that "accountability coupled with excellent running of the affairs of the Society" was responsible for the increase in its membership from 40 in 1983 to 91 at present.

Mr. Sese called for the complete removal of customs duty on imported drugs as this, he pointed out, would facilitate the success of the Primary Health Care programme as well as contribute to the attainment of health for all by the year 2000.

In order to avert the situation where some drugs are deleted from health permit applications thus delaying the acquisition of these permits which in turn cause shortages of drugs in the system, Mr. Sese implored the Secretary for Health "to cause to be circularized to pharmacists and doctors the list of drugs whose importation has been banned or restricted."

The President also appealed to the PNDC Secretary through his deputy to appoint a substantive Director of Pharmaceutical Services.

A message read on behalf of the PNDC Secretary for Mobilization and Social Welfare by the Registrar of Co-operative Societies said Government saw the co-operative movement as a great potential "for harnessing the scarce resources of people especially in the rural areas, for community development" and would therefore leave no stone unturned in resuscitating the co-operative sector.

Like the Health Deputy Secretary, he also asked the society to extend its activities to the rural areas adding that his "Ministry will lend its full support to any programme you may draw up to reach the rural areas."

After a sumptious buffet lunch, Mr. T. C. Corquaye, Registrar of the Pharmacy Board was invited to chip in some few words of advice.

He took the opportunity to impress upon members to renew, each year, their practice licence within the stipulated time limit and this, he said, they could do by maintaining good accounting systems. Tax Clearance Certificates (TCC) issued at the end of the previous year could be used to renew licences for the current year, he hinted.

Mr. Corquaye stated that only imports coming in through Tema and Kotoka International Airport (KIA) and under very special cases, through Takoradi would qualify for health permits.

Dangerous Drug books should be properly kept as importers would be required to provide returns on the distribution of their products, he

In reply to a question by a me on why certain hospitals continu sell certain drug items from o (people's shops) outside the di sary, Mr. F. K. Bruce, Acting Dir of Pharmaceutical Services said the introduction of the "cash carry" system this obnoxious pra would die a natural death.

In an interview, Mr. I. D. Me Secretary/Managing Director of company informed me that performance this year of G.C.P.L below that of last year's as a resu financial difficulties and that to

Cont. on Page

Prof. Boakye Yiadom is President

PROF. Kwabena Boakye-Yiad Head of the Pharmaceutics Dep ment of the Faculty of Pharmac the University of Science and Tech logy (U.S.T.) Kumasi, was ele President of the Pharmaceut Society of Ghana at the 40th Natio Conference to serve a two-year te

Prof. Boakye-Yiadom who i Fellow of the Society was the Dea the Faculty of Pharmacy, UST f 1979 to 1985 and Pro-Vice Chance of the same University from 198 1988.

He thus heads the Standing Exe tive Committee comprising the fo wing who were also elected at Conference:

Dr. S. O. Larbi (Vice Preside Mr. A. K. Y. Kokukokor (H General Secretary), Mr. Eric Ah (Assistant Hon. General Secreta Mr. E. K. Addotey (Hon. Treasur and Mr. Oscar Bruce (Editor). rest are Mr. M. A. Akiwumi and T. T. L. Bernasko.

Sister Angelina Leaves Ghana For Good

A farewell dinner in honour of Sister Angelina, a Fellow of the Pharmaceutical Society of Ghana and founder of the Sunyani Diocesan Pharmacy or "Roman-mu", as it is popularly called by the local people, has been held at the Catering Rest House, Sunyani on July 21.

Sister Angelina who is 67 left for her motherland, the Phillipines after 19 years of devoted pharmaceutical services in Ghana on Monday, August 16, 1989.

The dinner took place on the terrace of the Rest House, in the open, to enable invited guests to enjoy the sumptious meals served while experiencing the refreshing evening breeze of a typical tropical rain forest area.

The Brong-Ahafo Regional Secretary, Mr. Owusu-Acheampong graced the occasion with his presence and most Regional Heads of Government departments witnessed the ceremony as well.

Also present were, Mr. F. K. Bruce (Acting Director of Pharmaceutical Services) representing the Ministry of Health; Mr. T. C. Corquaye, Registrar of the Pharmacy Board; Prof. K. Sarpong, Dean of the Faculty of Pharmacy, U.S.T.; Mr. Oscar Bruce, Editor of the Pharmaceutical Journal, as well as representatives from the various branches of the Society. It was no surprise therefore that Mr. T. A. Boamah, the Brong-Ahafo Regional Branch Chairman in a short welcome address said that "perhaps for the first time in the history of the Society, a farewell dinner for a member of the Society has attracted the attention of the dignitaries in a Region, the National Council and Pharmacists all over the country."

The Regional Chairman revealed that in the main, the Branch decided to honour Sister Angelina because of the "able manner she, despite her age, has projected the image of pharmacists in this region and the country as a whole."

It is worthy to note that Sister Angelina spent all the 19 years of her stay in Ghana in the Brong-Ahafo working first at Techiman, then Berekum and finally in Sunyani.

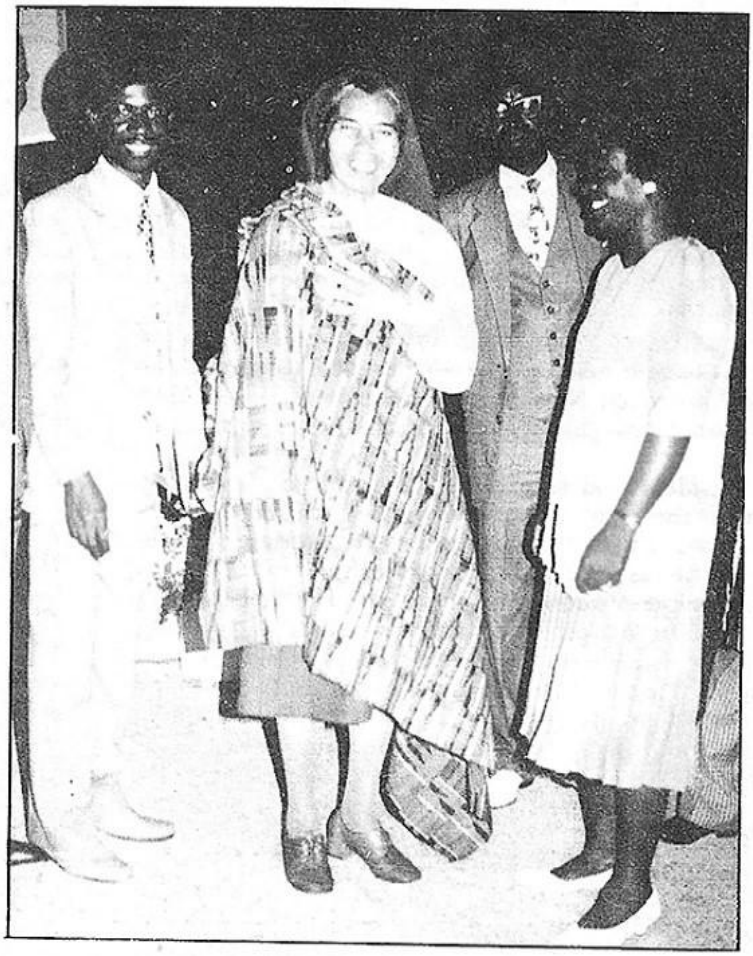
Mr. Boamah took the opportunity to demand co-operation from doctors in the region so that the "cash and carry" programme initiated by the Ministry of Health could be successfully implemented.

In what he described as a "pep talk", the Regional Secretary said Sister Angelina exemplified the kind of friends Ghana needed, that is friends who were willing to help in the nation's development efforts.

The Secretary noted with admiration, Sister Angelina's courage on arriving in Ghana to bypass big cities like Accra and Kumasi only to settle in a rural setting like that of Techiman and what is more to stay on and work tirelessly through the harsh times of 1983 when even born Ghanaians fled to seek greener pastures elsewhere. He thanked Sister Angelina and the Catholic Church for such a display of will to sacrifice and regretted that now that Sunyani was enjoying 24 hour electricity supply from the national grid, Sister Angelina had to leave.

Mr. H. Owusu-Acheampong then called on pharmacists in the country to also sacrifice and work in the rural areas in order to change the situation where only 15 pharmacists worked in the Brong Ahafo Region despite the huge number of pharmacists that have passed out from U.S.T.

In a speech read on behalf of the



Sister Angelina is seen here trying the Kente Cloth presented to her by the Brong Ahafo Branch during the dinner organized in her honour. On her left is Mr. Tom Boamah, the Branch Chairman.

President of the Pharmaceutical Society of Ghana, Prof. Sarpong said pharmacists were not the only health professionals guilty of un-willingness to serve in rural areas adding that invariably professionals who attempted to work in these areas were often frustrated out.

Prof. Sarpong then brought to light the new arrangement where freshly qualified pharmacists are expected to render minimum of 3 years service in the public sector before they can go into private practice.

This measure, he pointed out, would make it possible, among others, for pharmacists to be evenly distributed throughout the country so that what would be left would be for government to retain these pharmacists.

Prof. Sarpong said Sister Angelina, who was a devoted and selfless worker helped immensely to ensure the survival of the Brong Ahafo Branch when it was newly formed out of the Ashanti Branch. This and other achievements by Sister Angelina earned her a Fellow of the Society.

He finally thanked Sister Angelina, on behalf of the President of the Society, Council and the Faculty of Pharmacy, for all the services she rendered throughout her 19 years stay in Ghana.

The Brong Ahafo Branch presented Sister Angelina with a Kente Cloth apparently meant as a decoration for her alter. The Ashanti Branch, Intravenous Infusions Limited at Koforidua and the family of Mr. Fofie, the Deputy Director of Pharmaceutical Services in the Region all gave presents to Sister Angelina.

Sister Angelina who was visibly moved by the gesture in a very brief speech thanked all who have helped and co-operated with her to achieve all that she accomplished.

She explained that she had to leave in order to expend her "little energy left" to help her country and concluded by saying "I will miss Ghana".

At a private get-together organized later by Mr. K. A. Ohene-Manu in Accra, also in honour of the depar Sister, the National Council of Pharmaceutical Society of Gh presented Sister Angelina with another Kente Cloth.

EXTENSION OF SERVICES

Cont. from Page

things around, members would expected to contribute more mo to raise the value of the compa working capital.

The following were elected to s on the Management Committee for period 1989 to 1990:

Mr. E. Y. Sese	—	President
Mr. G. S. Botchway	—	Vice-President
Mr. J. K. Korsah	—	Treasurer
Mr. M. Ayittey-Adjin	—	Assistant Treasurer
Mr. I. Otieku-Boadu	—	Member
Mr. R. P. A. Codjoe	—	"
Mr. W. M. Asima	—	"
Mr. E. W. Asante	—	"
Mrs. N. S. Ayibotele	—	"

"Herculean" Job for Pharmacists

THE President of the Pharmaceutical Society of Ghana, Prof. K. Boakye-Yiadom has noted that the subject of drugs is, in recent times, on the lips of all Ghanaians thus placing a "herculean" job on pharmacists who are custodians of the nation's drugs and this they should execute without endangering the image of the profession.

He made this remark at the inaugural meeting of the 1989-91 Council held at the Conference Room of the Pharmacy Board on November 18 after he had been formally sworn in by the Registrar of the Board, Mr. T. C. Corquaye.

The President said at present our profession is seen by government through a rather bad window and urged pharmacists to work hard towards having the profession placed in the good books of the Ministry of Health.

Prof. Boakye-Yiadom said that, as a teacher, he had come to realize that progress only comes through discipline and without discipline a person or society would not earn any respect. He therefore seized the opportunity to remind pharmacists that disciplinary action against defaulting members should first have to come from ourselves and so it would be.

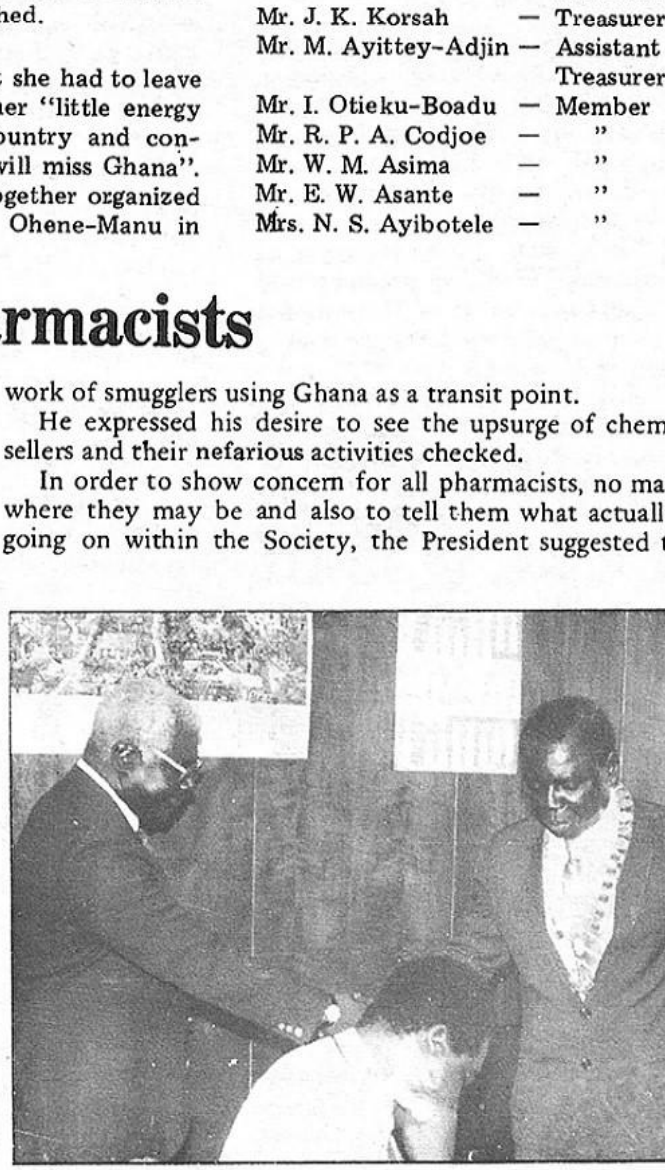
The President insisted that at the end of the day we should show to all and sundry that we are indeed "friends of the human race" and not "friends of cash."

According to him, one of the important jobs he would see to during this tenure of office would be the promulgation of the new Pharmacy Council and Drugs and Cosmetics Laws which "are prominent on the minds of most pharmacists."

Prof. noted that although statistics indicated that there was enough ampicillin in the system, there had recently been a shortage of this and attributed the shortage to the work of smugglers using Ghana as a transit point.

He expressed his desire to see the upsurge of chem sellers and their nefarious activities checked.

In order to show concern for all pharmacists, no ma where they may be and also to tell them what actuall going on within the Society, the President suggested



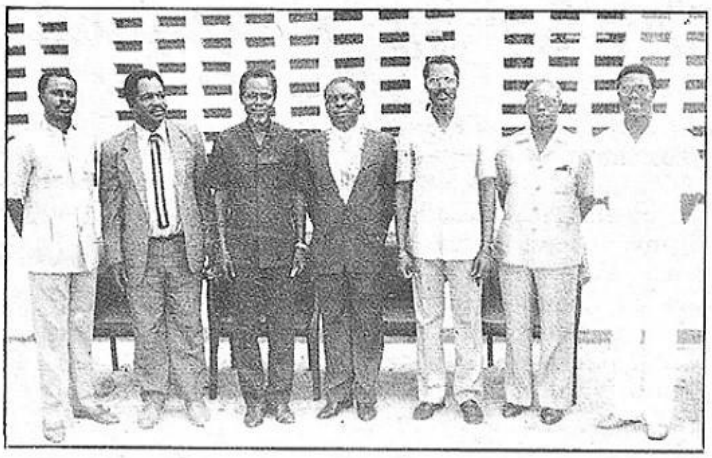
The President, Prof. K. Boakye-Yiadom is congratulated Mr. T. C. Corquaye, Registrar of the Pharmacy Board a he had been sworn in and the Chain of Office placed him.

members of Council make themselves available to the people through regional visists.

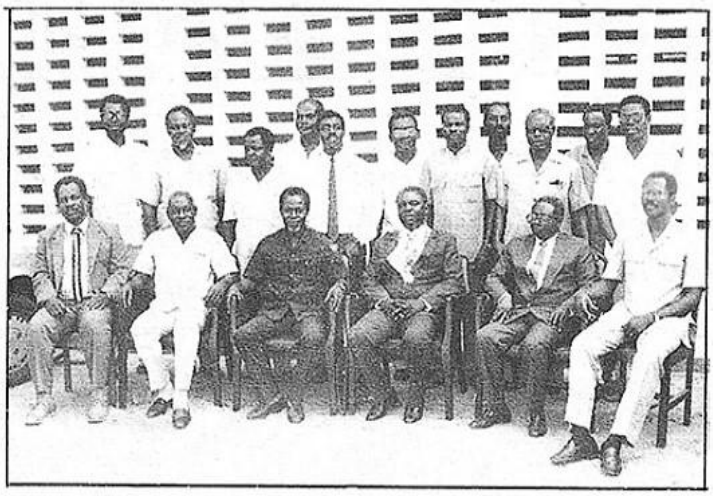
Prof. Boakye-Yiadom also reiterated what the outgoing President, Mr. E. O. Gyamfi said earlier on before handing over officially to him that each of us should work solely for the progress of the Society without allowing personal feelings for or against any individual to influence our output.

The make up of the new Council is as follows:

Prof. K. Boakye-Yiadom	– President
Dr. S. O. Larbi	– Vice President
Mr. A. K. Y. Kokukokor	– Hon. General Secretary
Mr. Eric N. Aheto	– Asst. Hon. General Secretary
Mr. E. K. Addotey	– Hon. Treasurer
Mr. Oscar Bruce	– Editor
Mr. M. A. Akiwumi	– Council Member
Mr. T. T. L. Bernasko	– Council Member
Mr. E. O. Gyamfi	– Immediate Past President
Mr. F. K. Bruce	– Acting Director of Pharcaceutical Services, MOH
Prof. Kwame Sarpong	– Dean, Faculty of Pharmacy, U.S.T.
Mr. D. C. Ashiabor	– Greater Accra Regional Branch Representative
Mr. Samuel Nkansah	– Greater Accra Regional Branch Representative
Mr. M. K. Aboagye	– Eastern Regional Branch Representative
Mr. S. A. Offei	– Ashanti Regional Branch Representative
Mr. M. K. Amoa-Ampah	– Central Regional Branch Representative
Mr. Tom Arko Boamah	– Brong Ahafo Regional Branch Representative
Mr. S. L. K. Akorlor	– Volta Regional Branch Representative
Mr. S. A. Bentum	– Western Regional Branch Representative
Mr. Issaka Abdel-Kasim	– Northern/UE/UW Regional Branch Representative



The Standing Executive Committee. In the middle is the President of the Society, Prof. K. Boakye-Yiadom. Others include (L to R) Mr. Eric Aheto (Assistant Hon. Gen. Secretary), Mr. A. K. Y. Kokukokor (Hon. General Secretary), Dr. S. O. Larbi (Vice President), Mr. E. K. Addotey (Hon. Treasurer), Mr. M. A. Akiwumi (Member) and Mr. Oscar Bruce (Editor). Mr. Ted Bernasko, also a member, is not in the picture.



Members of Council after the inauguration.

Appointments to WAPF Committees

THE W.A.P.F. has appointed the following members of the Pharmaceutical Society of Ghana (P.S.GH.) to serve on its stated committees:

Research	– Prof. Kwame Sarpong, Dr. B. Noamesi
Quality Control	– Dr. J. K. Kwakye, Mr. Kwatia
Finance	– Mr. A. K. Y. Kokukokor
Education	– Prof. K. Sarpong, Prof. K. Boakye-Yiadom
Publications	– Mr. Oscar Bruce

WAHC Drug Advisory Council Enlarged

FOLLOWING the acceptance of a recommendation from the West African Pharmaceutical Federation (WAPF) to the Assembly of Health Ministers of the West African Health Community (WAHC) to enlarge the community's Drug Advisory Council (DAC) which hitherto, comprised only Chief Pharmacists/Directors of Pharmaceutical Services of the member countries, Council has nominated Mr. Atta-Nyamekye (from the Pharmaceutical Industry) and Prof. R. Ansah-Asamoah (from the Academic Community) to serve on the DAC.

Dr. Gyang is nominated

DR. F. N. Gyang (a Pharmacist) of the Department of Biochemistry at the University of Ghana has been nominated by the Pharmaceutical Society of Ghana to serve on the newly constituted AIDS Technical Sub-Committee on Clinical Management as part of the institutional framework for the Medium Term plan of action on AIDS control in the country.

The function of the sub-committee will be to advise the Programme Management Unit of the AIDS control programme on the following:

1) Guidelines for the Management of AIDS;
2) Guidelines for the management of HIV seropositive pregnant individuals;
3) Training activities for doctors, pharmacists and other categories of health workers on the clinical diagnosis and management of AIDS;
4) A system for providing counselling to HIV seropositives and AIDS patients, and
5) Research in clinical areas.

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For General Run-Down Conditions.

It may be JUST the TONIC to meet Your HEALTH NEED!

MACRAFOLIN SYRUP

USES:

For the treatment of megaloblastic anaemia in children & Pregnancy and other macrocytic anaemias associated with nutritional difficiencies and sprue, reverse of cervical dysplasia in women taking oral contraceptives and neurological disorders. Folic Acid difficiency occuring in epileptics on continuous anti-convulsive treatment may lead to mental deterioration and this can be treated with macrafolin.

CAUTION

This preparatin should not be given before a diagnosis has been fully established. It should therefore be given under physiciants direction

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at all of its

GENERAL ASSEMBLIES

AND

SCIENTIFIC SESSIONS

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thereby contributing to its progress.

Make it a point,

therefore, to attend its next

meeting and subsequent ones.

The Sub-Regional Seminar on Pharmacy Management

IN recent times, any function intended to bring pharmacists together has not failed to draw a crowd much larger than one would expect. The Sub-Regional seminar on Pharmacy Management held at the Arden Hall of the Ambassador Hotel from May 16 to 19 was no exception to this apparent rule.

The attendance register indicated that 167 pharmacists from Ghana, Nigeria, Liberia, Sierra Leone and the Gambia participated. Of course there were quite a number of Ghanaians who showed up at the seminar from time to time but did not register.

On the morning of May 16, the President of the Society, Mr. E. O. Gyamfi welcomed participants to the seminar whose objectives were firstly, to focus on the application of sound financial, administrative and human resources management principles and techniques essential for modern pharmacy management and administration.

Secondly, to provide participants with an opportunity to review and apply current management techniques to improve their operational efficiency and lastly, to provide a forum for participants to exchange information, examine problems and share experience in improving pharmacy management practice.

In his address, Mr. Gyamfi justified the theme of the seminar "Administrative and Fiscal Controls in Pharmaceutical Services" saying it was appropriate since pharmacy service was both professional and commercial.

Dr. T. B. Wireko, Acting Director of the Ghana Institute of Management and Public Administration (GIMPA) read the Keynote Address.

The official opening was performed by Nana Akuoku Sarpong, PNDC Secretary for Health who urged pharmacists to provide better statistics on drugs manufactured and their consumption as what were now available were both inadequate and inaccurate to be used for any meaningful health planning.

This statistical lapse, he maintained, often led to hoarding and profiteering. Nana Akuoku Sarpong advised pharmacists against the leaving of the day-to-day running of pharmacies to non-professionals since this practice posed a great health hazard to the public and was indeed against the ethics of the profession.

A "cash and carry" drug supply system, according to the Secretary, would be introduced by his ministry to ensure that drugs are properly used and accounted for in the health care delivery system.

The Secretary also appealed to pharmacists to help develop herbal medicines for these to supplement their stock of orthodox drugs.

The training seminar was divided into three sessions. The first session considered the subject "Management and Marketing" and Dr. A. H. Ekpo (Nigeria) spoke on "Overview of the General Framework of Management" and "Management by Objectives" while Mr. Frank Boateng (Ghana) dealt with "Drug Marketing, Sales and Profitability Generation."

Also under this subject, Mr. E. V. Aikins (NCR, GHANA) lectured on "Managment of Information Systems" and also devoted some time to give practical demonstration on a computer.

The second session considered "Fiscal and Inventory Controls" where Dr. Fred Adenika treated "Fiscal and Human Resources Management." Under this same subject, Mr. S. A. Botchway (Ghana) dissected the topic "Procurement and Drug Revo ing Fund Management", while Mr. K. A. Ohene-Manu (Ghana) talked on "Pharmacy Ownership." Mr. Aikins gave a second talk, this time on "Inventory Management and Controls."

Group discussions on contemporary economic, social and regulatory factors impacting on pharmacy practice were held and representatives from member countries participating took turns to throw some light on legal requirements and security controls in their respective countries.

Session three was devoted to discussions on reports presented by rapporteurs from the different group discussions.

As expected, there was a lighter side to the training seminar. A cocktail reception organized by the Ministry of Health for participants took place at the Trade Fair site on the evening of the opening day. A dinner intended to close the seminar could not be held on the last day, instead it was held a day before. The seminar enjoyed the distinguished presence of the Secretary for Health, Nana Akuoku Sarpong at this dinner. Other distinguished personalities present were the 1st Vice-President of W.A.P.F., Mr. T. C. Corquaye; a former President of W.A.P.F., Mr. J. Pearce-Biney, and the agile Executive Secretary for W.A.P.F., Dr. U.S. Inyang, to mention a few.

Certificates of participation were distributed to participants as the last agendum.

A West African Health Organization in the Offing

A copy of the protocol on the establishment of a West African Health Organization conceived at the 10th Session of the Authority of Heads of State and Governments held at Abuja, Nigeria from July 7 to 9, 1987 has been forwarded to the Pharmaceutical Society for its comments from the W.A.P.F. Secretariat.

The West African Health Organization shall be the result of a merger of the West African Health Community and the Organisation de Coordination et de Cooperation pour la lutte Contre les Grands Endemies, an organization whose membership comprise the Francophone West African countries.

The new body shall be a specialized institution of ECOWAS.

Agriculture and Veterinary Pharmacy Diploma Course now open to all

THE postgraduate programme leading to a Diploma in Agricultural and Veterinary Pharmacy (D. Ag. Vet. Pharm) hitherto offered by the Royal Pharmaceutical Society of Great Britain (RPSGB) only to pharmacists on the British Register is not available to pharmacists outside Great Britain.

The course, which is largely one of self-study, commences in January each year and officially concludes on December 31.

The syllabus is broadly divided into two areas namely, crop protection and animal health, and consists of five elements:-

1) A residential course of one week duration on crop protection, legislation and dairy hygiene and consist of at least 30 hours of instruction.

2) A second residential course, also lasting one week on animal health and husbandary, again consisting of at least 30 hours of instruction.

These courses are usually held in April and September at the University of Aston, England.

3) A written project of between 8,000 and 12,000 words on a subject which is an extension of part of the course content. Guidance on appropriate subjects is given by the tutor who arranges the residential courses.

4) Private study consisting of all the subject matter defined in the syllabus.

5) 30 days practical experience.

A circular received from the RPSGB on the course states that "during the first three months of the year following the end of the course, students undertake a series of assessments. Firstly, they have to submit their project for marking and then they have to present themselves for written and oral examinations. The written papers are each of 3 hours duration. The first one covers the subject of crop protection, legislation and dairy hygiene and the second deals with animal health and husbandary. These papers are taken at the University of Aston in England usually in early February.

"The oral examination, which may cover any aspect of the syllabus and has particular reference to the practical application of knowledge is held in London immediately following the written examinations. The candidate must satisfy the assessors in the written and oral examinations as well as the project before a Diploma can be awarded."

The fee for overseas pharmacists is £1,000.00 sterling and this include the cost of the residential weeks.

Further information and copies of the syllabus and regulations are available from the Royal Pharmaceutical Society of Great Britain, 1 Lambeth High Street, London, SEI 7IN.

FIP to Review Membership Dues

FOLLOWING complaints reaching the International Pharmaceutical Federation (FIP) from Third World Countries experiencing serious economic problems and therefore find it difficult to meet their financial obligations to the Federation, the international body has expressed its willingness to reconsider the current dues paid by each national association and individual members as well as conference registration fees.

To this end, each national association is expected to present a memo to the Bureau and Management Committee on this matter.

The reconsideration exercise will take into account the value of each currency in relation to the dollar and the comparative salaries of pharmacists in countries comprising the Federation.

Those countries having difficulties in remitting money may be asked to open local F.I.P. Accounts.

WAPF to improve its Financial Position

IN order to improve the rather unsatisfactory financial position of the West African Pharmaceutical Federation (WAPF), Council has decided to enforce Article 4, Section (ii) of the WAPF Constitution relating to Associate Membership.

Invitation for Associate Membership is therefore being tendered to individual members of WAPF at an annual fee of $ 5.00 in local currency per member payable into WAPF/Local Society or Association accounts in the member's country.

It is envisaged that a privilege, among others, to go with associate membership would be the mailing of the WAPF Journal regularly to registered members.

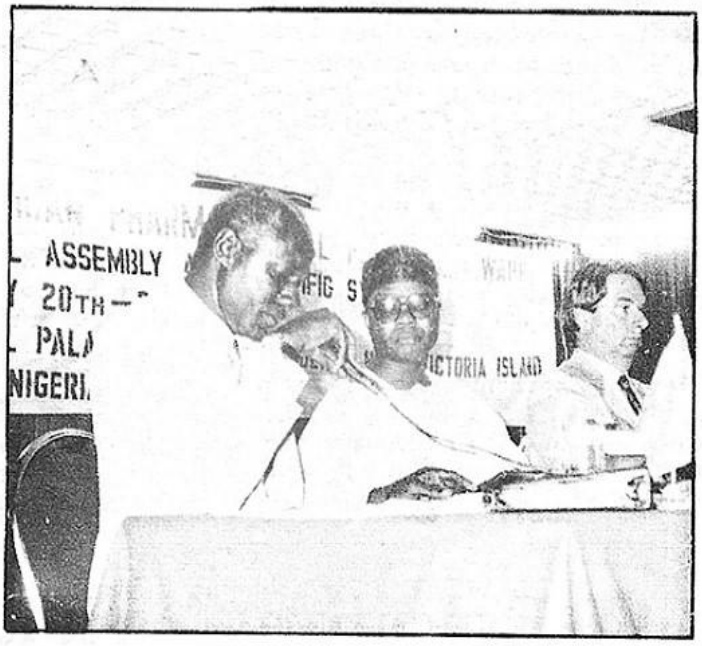
Council is also levying each National Society/Association an equivalent of one (1) dollar per pharmacist member annually again to be paid into the local joint account.

As a further measure to swell local joint accounts, Council has enjoined pharmacists to patronise WAPF programmes such as General Assemblies, Scientific Sessions, Training Seminars and Workshops in the hope that monies generated from such programmes would improve the financial standing of WAPF.

Pictures from Lagos

We have only now been able to bring to you some scenes our cameraman captured at the 7th General Assembly and Scientific Symposium of the West African Pharmaceutical Federation (WAPF) held in Lagos in February this year.

A portion of the participants at the conference. Mr. V. K. Aidoo, a former President of the Pharmaceutical Society of Ghana (PSGH) and one time WAPF Council Member is seen seated in the front row, forth from right.



Prof. K. Sarpong, Dean of the Faculty of Pharmacy presenting a paper. On his immediate left is Mr. Julius Adelusi-Adeluyi, President of the Pharmaceutical Society of Nigeria (PSN).

Fraternizing and enjoying some pre-dinner drinks are (from L to R) Miss Jane Onny, General Manager of Gihoc; Chief Bayo Ogunyemi, Immediate Past President, P.S.N.; Mr. T. C. Corquaye, Registrar of Pharmacy Board and 1st Vice President of WAPF; and Mr. T. Manly-Rollings, the outgoing President of WAPF.

Some Nigerian lady pharmacists in gorgeous smiles just before the dinner.

13 Pharmacists end Management Course

THIRTEEN pharmacists drawn from Ghana (5), Nigeria (7) and the Gambia (1) have completed a three-week Medical Stores Management Course at the Ghana Institute of Management and Public Administration (GIMPA).

The course which is one of the training programmes organized yearly by the West African Pharmaceutical Federation (WAPF) began on August 7, and ended on August 25.

During a cocktail party organized by the W.A.P.F. in honour of the participants, Mr. T. C. Corquaye, the 1st Vice-President of W.A.P.F. and Registrar of the Ghana Pharmacy Board urged participants to put what they had learnt into practical use.

Participants were tutored in Principles and Practice of Management, Communication Skills, Principles and Practice of Storekeeping and Supply Systems.

A foreign participant who described the setting of GIMPA as "wonderful" said he was confident that his performance back home would considerably improve.

The course was rounded off with a dinner where participants received their certificates.

7th Scientific Congress of WAPF

THE 7th Scientific Congress of the W.A.P.F. is to be held in Monrovia, Liberia from February 19 to 23, 1990, under the theme "Pharmacy and Primary Health Care in the West African Sub-Region."

It is the desire of the W.A.P.F. Council that as many pharmacists as possible attend this congress. All must make it a point therefore to be there.

CPA Executive Committee meets in Malta

THE Executive Committee of the Commonwealth Pharmaceutical Association (CPA) has met in Malta on May 1 and 2.

The deliberations of the Committee covered, among others, financial and constitutional matters, the Association's relationship with other international bodies, action arising from the 1988 regional education workshops, a study of pharmaceutical legislation in the Commonwealth, the primary health care role of the pharmacist and the 1991 conference in Canada.

Immediately after the Committee meeting, the President, other officers of CPA and representatives of the Malta Chamber of Pharmacists held meetings with the Minister for Social Policy, the Paliamentary Secretary for Health, the Minister of Education and the Rector of Malta University.

Matters discussed related to the greater involvement of pharmacists in activities associated with the rational use of drugs and medicines, the effective enforcement of pharmacy legislation and the urgent need to improve all aspects of the undergraduate education of pharmacists in Malta.

On the eve of the Executive Committee meeting a joint seminar was held with the Malta Chamber of Pharmacists on Community Pharmacy Services, the Control of Pharmacies and the pharmacists role in health education. This was followed by a reception given by the President of Malta.

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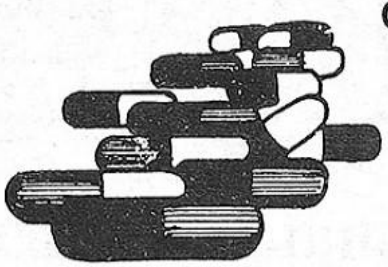

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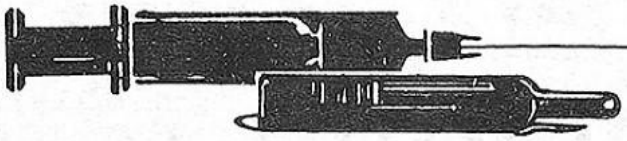

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Pharmacy Practice in Ghana in the Next Decade (1990-2000 AD)

The Keynote address read by Professor K. Boakye-Yiadom, Head, Department of Pharmaceutics, University of Science and Technology, Kumasi Ghana at the 40th National Conference of the Pharmaceutical Society of Ghana, Christ The King Hall. Accra, 21st September to 23rd September, 1989.

MR. Chairman, the art of the apothecary has always been associated with the mysterious. Our forebearer the tribal apothecary was one to be feared, respected, trusted and sometimes mistrusted, for it was through his potions that the whole community depended for their livelihood either for good or evil.

In the Homeric epics the term Pharmakon from which our word Pharmacy is derived connotes a charm or drug that can be used for good or evil purposes. Our break with tribal pharmacy practice is due in large measure to Hippocrates, the Greek physician accredited with the introduction of scientific pharmacy and medicine; for it was during his time that the term Pharmakon came to mean a purifying remedy for good only, transcending the previous connotation of a charm or drug for good or evil purposes.

Even then, drugs are today still held as items of mystery by many. One of the astounding qualities of drugs is the diversity of their action on the body. For while we have drugs which induce constipation, carthatics promote evacuation of the bowel, drugs can reduce or elevate the blood pressure, emetics do induce vomitting - while antiemetics have the opposite effect. Drugs seletively stimulate or relax muscles; the cardiac muscle, uterine muscle, smooth muscle or the skeletal muscle are selectively stimulated by different drugs. Drugs are used to reduce stomachache, headache, toothache, mental agitation, mental depression, to support life as in the maintenance of pregnancy or destroy life as in abortion so as Ancel rightly asserts the vast array of effective medicinal agents available today represents one of man's greatest scientific achievements and it would be frightening to conceive of our civilization devoid of these remarkable and largely beneficial agents. In fact drugs are indispensable in any health programme. The availability of safe and effective drugs is crucial in disease prevention and cure. And medicines may be regarded in the absence of expensive infrastructure as the main pillar for the implementation of a credible health policy.

Mr. Chairman, drugs are also "poisons" and can be detrimental to health if not properly used. The complexity of drugs has warranted the need for an effective specialist in medications, a custodian of medical information, a companion of the physician, a counsellor to the patient and a guardian of public health in so far as drugs are concerned, the Pharmacist.

When Emperor Frederick II in 1240 A.D. promulgated his decree that separated Pharmacy from Medicine for the first time, the edict separating the two professions acknowledged that pharmacy required special knowledge, skills, initiative and responsibility, that edict still holds today. For the Pharmacist still needs special knowledge and skills. To qualify for registration as a pharmacist in Ghana, one requires graduate qualifications and an apprenticeship period of not less than one year after graduation. Today the Pharmacist in our country is a legally recognised professional performing in the many and varied areas of applied pharmaceutical sciences and in areas where the professional aspects of pharmacy are required. Thus Pharmacists are found in industry where they contribute to the areas of product development and production; in management and sales. Pharmacists are found in teaching and research institutions. In the teaching institutions Pharmacists have not concentrated their efforts only in the training of pharmacy students but students in other medical professions, e.g. medicine and nursing. In government service, pharmacists play important roles in administrative functions, in drug regulations, in implementation of health care programmes, in the procurement and distribution of essential drugs and in drug utilization practices in government hospitals and clinics. The pharmacist holds responsible positions in the military and police service. The largest number of pharmacists in the country today are employed in community pharmacies where every type of facilitv and environment have been contracted to procure, store and dispense pharmaceuticals.

But dear colleagues how have we performed as pharmacists at our various tasks? Have we helped to enforce the Pharmacy and Drugs Laws of our nation, have we been managers of the pharmacies under our supervision or have allowed untrained people to procure and dispense drugs without the slightest idea as to the quality requirements of what they buy and the laws pertaining to the dispensing of drugs in this country? Have we managed drug supply in the nation by careful selection, procurement, storage, distribution and use without loss to the state and our employers? Have we kept our research findings in files without any effort to disseminate them for the use of our fellow countrymen? Have we been useful to the public on drug education?

Mr. Chairman, the theme of our 40th National Conference is "Pharmacy practice in Ghana During the Next Decade (1990 - 2000)". Pharmacy practice in this country in the next decade cannot be isolated from the social, political and economic environment currently evolving in this

country. Ghana is a young country with several challenges. The challenges of Economic Recovery, of Development, of Self-reliance, and of Health for all by Year 2000, are sure to be with us during the next decade. For any meaningful success to any programme involving human beings however, the number ONE PREREQUISITE to my mind is GOOD HEALTH. It is therefore very reassuring that our Government has not only seriously embraced the current world concept of HEALTH FOR ALL BY YEAR 2000, but is striving to achieve this objective through PRIMARY HEALTH CARE PROGRAMMES. The Alm Ata Declaration of 1978 made Primary Health Care the KEY to the attainment of health for all. PHC is the first level of contact of individuals, the family and the community with the National Health System, bringing health care as close as possible to where people live and work and constitutes the first element of a continuing health care process. It is worthy to note that of the eight targets or components assumed as being essential for the success of primary health care, five are dependent on drugs. Viz:

(i) Maternal and Child Health Care including family planning.

(ii) Immunization against major infectious diseases.

(iii) Prevention and control of locally endemic diseases.

(iv) Appropriate treatment of common diseases and injuries.

(v) Provision of essential drugs.

The involvement of the pharmacist therefore, in the implementation and success of the current programmes aimed at achieving a reasonable health for all by year 2000 is without question. It is incumbent on us as pharmacists to ensure that safe and effective drugs at affordable prices are made available in the country during the next decade.

Mr. Chairman, the danger of fake drugs currently circulating in this country is real. I am not aware if any research or scientific assessment has been contemplated by our health authorities to estimate the true extent of this menace to our countrymen, and thereby be in a proper position to institute stringent measures to curb this danger of fake drugs. Ladies and Gentlemen which of you would wish to receive an inactive drug if you were ill? As pharmacists you should accept the challenge of checking this negative practice by ensuring that drugs that get into our pharmacies are of good quality. Our Association has the responsibility of initiating programmes that will weed out traffickers of substandard and useless drugs from our country. Pharmacy practice is not just any other commercial venture and drugs are just not any other commodity of commerce which can be handled by all and sundry, where this is allowed to happen the economic loss to the state in both financial resources and health can be enormous.

Mr. Chairman, drugs are costly items, cost of drugs do constitute a very sizeable percentage of our National Health budget. In an economic recovery programme, such as ours, wastage of any kind should not be tolerated. To enable us prevent wastage in the drug supply system we as pharmacists should be knowledgeable in sound drug management systems. We should be capable of advising government and our employers on improved procurement practices, improved storage and dependable distribution systems. It is commendable that the Ministry of Health in collaboration with the Faculty of Pharmacy is mounting a programme in drug supply management for government pharmacists. The Society in its continuing education programmes should make this course mandatory for all its members to ensure that the right drug is procured for the patient at the right time, in the right quantity and at an appropriate and affordable price.

The Society is also expected to be more involved in the production of an Essential Drugs List and a National Formulary for the country as another means of rationalising drug management in the country.

Mr. Chairman, during the next decade the professional functions of the pharmacist should be felt in the health care needs of all our people. Our health system in the past was so poorly organised that about 70% of our populations do not have reasonable access to any permanent form of health care. Overwhelming proportions of our resources were spent for the delivery of health care in the cities and urban centres. The distribution of our pharmacist population has followed a similar pattern, with a concentration of pharmacists in the cities and urban centres, while the rural community who form the bulk of our population have no assess to our professional services. It is incumbent upon us as the specialists in drugs and therefore a key factor to the success of the Primary Health Care Programmes to be found in every district. It is essential that pharmacists are involved in district health management teams to plan and recommend appropriate health programmes for the District Assemblies.

The present trend in pharmacy training is shifting from the over emphasis on drug to patient care; during the next decade, the pharmacist must be in a much better position in addition to his traditional responsibility for dispensing medication upon an order from the physician, provide other functions such as sharing the responsibility with the physician for prescribing which include the selection, dosage form and dosage of drugs based upon the physician's diagnosis; recommending for or against the purchase and use of OTC drugs; keeping proper drug history of patients by recording medications, idiosyncrasies and adverse drug reactions, proper education of the patient and his medication, serving as a consultant to the clinician and patient in his role as a drug specialist, providing drug information to other health professionals and acting as a source of health information and education to the public.

We must make persistent effort at educating the public in view of the rampant misuse and abuse of drugs by a large majority of our population due mainly to ignorance. Our educational efforts should include public lectures, press statements, education of the public in our pharmacies and an active support for our pharmacy students in their Drug Safety Campaigns.

Mr. Chairman, the next decade should see traditional herbal medicines which have been tested and proved to be safe and efficacious on the shelves in our dispensaries in our hospitals and in our community pharmacies. Traditional medicine should assume a more important role in the nation's health care delivery system and I am hopeful that we as pharmacists would whip up enthusiasm for the assimilation of our traditional remedies into a comprehensive health delivery system - we must remember that 70% of our

population the rural folk, rely almost entirely on this system - and our greatest challenge for the next decade 1990 - 2000 A.D. is to provide good pharmaceutical services to all our peoples particularly our rural folk on whose toil and sweat our National Health Programme depends.

The International Training Seminar on Pharmaceutical Quality Assurance at the University of Lagos, Nigeria 27th–30th July, 1988

–JOYCE ADDO-ATUAH (MRS)
(B. PHARM, M.P.S. GH)
GHANA POLICE HOSPITAL
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THE assurance of the quality of drugs acquired from both overseas and local sources, and the maintenance of that quality throughout the shelf life and movement of same from the manufacturer down to the ultimate user - the patient - is of optimal importance, because of the huge costs and the human factor involved. The responsibility for this is shared by drug manufacturers, drug distributors and health care practitioners and is exercised within the framework of national and international regulatory controls.

Unfortunately, within the West African sub-region, and indeed much of the developing world, regulatory controls, if in existence at all, are often not backed by the requisite facilities for drug quality assurance, eg. Quality Control Laboratories, whose task it would be to scientifically assess:

i. the quality of new drugs presented for registration in the area;

ii. those in use in hospitals and on pharmacy shelves in retail and wholesale outlets;

iii. those that have exceeded the stated shelf-life or expiry date of the manufactuter.

These inadequacies as enumerated above, have resulted in the unscrupulous dumping of sub-standard, fake, adulterated and toxic drug products in our part of the world, originating from both internal and external sources in people's craze to amass wealth.

These practices have assumed such unprecedented proportions in some areas, involving some health care practitioners and supposedly reputable drug companies that, the West African Pharmaceutical Federation (WAPF) a specialised agency of the West African health community, exercising its obligations and professional responsibility, organised this international training seminar on quality assurance of drugs in conjunction with the Pharmaceutical Industry in Nigeria and the School of Pharmacy of the University of Lagos.

The objectives of the Seminar according to the organisers were:

(a) To provide participants with the opportunity to:

i. upgrade their knowledge and improve their skills in modern concepts of Quality Assurance (QA) and Good Manufacturing Practice (GMP);

ii. officially inspect modern drug manufacturing facilities and quality assurance laboratories;

iii. study practical applications of modern and efficient QA and GMP systems, emphasising on methods of drug monitoring especially in member countries without quality control laboratories and

(b) to bring together drug quality assurance experts from hospital, industry, academic and other relevant professional and governmental agencies for mutual inter-change of useful ideas and experiences.

In persuance of the stated objectives of the Seminar, topics treated included concepts of Quality Assurance touching on receipts, inspection, sampling and storage of raw materials, finished products and packaging materials. This is of utmost importance since the quality of finished drug products in terms of efficacy, physical appearance, safety, etc., depends on the quality of raw materials used.

Packaging materials are as important as the drug itself since for a given drug formulation, the particular packaging material that would give the optimum results in terms of stability during the shelf-life of the formulation is chosen, and this must be maintained for all batches of the given drug product.

Strictly adhering to the specifications set out for the packaging materials of a given drug manufacturer in terms of texture, colour shade, weight and volume of materials used, the type and size of print used for company logo, trade mark, batch number, manufacturing and expiry dates etc. are all important indices for differentiating a fake from a genuine

drug product on the market.

To stress the concept that quality is built into a product from the beginning to the end of a manufacturing process, the principles of GMP were treated, pin-pointing general cleanliness and sanitation within and outside the plant, cleanliness of equipment and working areas, physico-chemical and microbiological analysis where applicable, of raw materials, products still in process and of finished goods.

Assurance of the quality of finished drug products after GMP puts a firm guarantee of quality on each batch and in this regard, topics treated included Current Trends in Analytical Techniques of Drug Quality Assurance, followed by a practical demonstration of "WHO Basic Tests for Pharmaceutical Substances" on drugs like Aspirin, Paracetamol and Chloroquine at the School of Pharmacy of the University of Lagos.

Microbiological studies embracing Sterility Testing for Aseptic products and studies of Bioavailability on finished products were also given their due.

For the prevention of deviations in the quality of any given product, the collection and storage of data i.e. Record-keeping, Documentation systems (e.g. keeping of master batch document, quality assurance worksheets, raw materials, finished products and packaging materials specifications etc.) should be properly instituted and stored for reference and reproducibility of products from batch to batch. This important area was also adequately treated.

With drugs, storage and handling are as important as manufacture and this was stressed by such topics as Good Pharmaceutical Warehousing, Storage and Distribution Practices and the Protocols to follow in the release of any given batch of drugs on to the market.

Once on the market, consumers may have cause to complain about a product due to one reason or the other which might necessitate product recalls from the market and it behoves on every manufacturer to institute a system to deal with such complaints and recalls. These areas were also adequately covered.

Speakers on Self-Inspection and Quality Audits made it abundantly clear that it is absolutely necessary for every manufacturing house to incorporate Internal Audit Inspection of each and every area of their operation in their programme of activities, eg. to determine the appropriateness or effectiveness of all storage areas, validation of all equipment, balances, etc. used, documentation systems, etc. in a bid to ensure that the standards set for each product are strictly adhered to from batch to batch.

Other topics treated included the Organisation and Legal Framework for Quality Assurance and the Training of Personnel for Pharmaceutical Quality Assurance.

There was a lively symposium on the topic "Drug Adulteration and Consumer Safety" in which the dangers to which innocent patients are exposed to in this era of proliferation of adulterated, fake, substandard and other toxic drug products were fully expounded and suggestions for redress were made.

Perhaps the most interesting and enriching part of the programme was the visit of the participants to the seminar to selected pharmaceutical manufacturing houses in Nigeria.

Participants were divided into three (3) groups as follows:

Group	1	Pfizer Wellcome
Group	2	Sterling Glaxo
Group	3	May & Baker

Exchanges among the particpants after these visits pointed to the fact that the organisers made a careful and professional selction of these factories based on the following criteria:

i. Lay-out and General Cleanliness

ii. Plant and Equipment available

iii. Line of Drug products manufactured, and most importantly,

iv. Facilities for Drug Quality Assurance.

The most important lesson learnt from the Training Seminar in Lagos was that the Quality Control Department is the most sensitive unit in the entire manufacturing set up and it is incumbent on any industry bent on the principles of G.M.P. and Q.A. to make sure that this one department is adequately equipped and manned by properly trained and highly motivated personnel. It is the one department which is involved with all the other units in the set up, right from the identification, testing and passing for use of raw materials, through in-process and packaging material testing down to the assurance of the quality of finished products.

Another important lesson learnt was that although all drug manufacturers are ideally expected to conform to official standards in their production, a wholesale buyer of any drug, be it from a local or foreign source, bears the responsibility of clearly indicating to his supplier what specifications he expects his orders to conform to (eg. BP, USP etc.) and to ascertain on receipt, whether the agreed standards have been conformed to by the manufacturer.

However, the buyer, who can be a whole government ministry such as the Ministry of Health, can cross-check the quality of drugs so procured only if she has the requisite facilities for doing so, and hence the importance of adequately equipped Quality Control Laboratories for our sub-region.

In the interim, health care practitioners, especially pharmacists, have the professional responsibility of protecting our innocent and unsuspecting populace by making sure that we procure our drug supplies from only recognised and identifiable sources which can be brought to book in the event of any suspected faking, and leave the brief-case-bearing individual drug pedlars completely out of our sources of procurement.

Antimicrobial Activity of Syrup Xylopica

By

N. I. Y. FIAGBE, PH.D., B.PHARM., M.P.S.G.

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ABSTRACT

Syrup Xylopica prepared from the extract of the fresh ripe fruits of *Xylopica aethiopica*, a common ingredient in several Ghanaian folklore medicines and foods have been examined for antimicrobial activity against four micro-organisms, *Staphylococcus aureus, Streptoccocus viridans, Escherichia coli and Pseudomonas aeruginosa.* The syrup xylopica is found to have antimicrobial properties.

KEY WORDS: *Xylopia aethiopica,* Xylopic acid, *Staphylococcus aureus, Streptococcus viridans, Escherichia coli, Pseudomonas aeruginosa.*

INTRODUCTION

Xylopia aethiopica (Dunal) A. Rich (Annonaceae) is a straight-stemmed tree growing up to 18 meters high usually found on the upper edge of mixed deciduous forests and in fringing forests in West Africa[2]. . The roots, bark, fruits and seeds are extensively used in local folklore medicine. In Ghana the fruits and seeds are used in various indigenous formulations for bronchitis and dysentry and in topical preparations of foods. Due to their spicy nature, it was summised that their use in local medicines and foods might be because of the preservative and other medicinal uses[3,4].

Various workers reported active constituents from the various parts of the plant. In 1968 Ekong and Ogan[5] isolated a kaurene diterpene, xylopic acid, from the dried fruits. Then in 1969 Ekong, Olagbemi and Odutola[6,7] isolated five other kaurene diterpenes from the fruits.

Detailed structural studies on xylopic acid and some of the related diterpenes have been carried out[8,9,10] similarly preliminary and detailed GC/MS studies of the volatile constituents of the fruits of *Xylopia aethiopica* have been initiated[11,12].

Preliminary work has also been done to assess the antimicrobial activity of three deterpenes and two other isolates from the fruits of *Xylopia aethiopica*[13].

In this paper, preliminary work has been done to assess the antimicrobial activity of a formulated product, syrup xylopica, from the fruits of *Xylopia aethiopica* on four micro-organisms.

The mature ripe fruits of *Xylopia aethiopica* harvested from the species grown at the botanical gardens of the University of Science and Technology, Kumasi, Ghana were dried at 60°C for 5 days. The dried fruits were powdered and (1000 G) of the coarse powder was placed in a round bottom flask, water was added and the content of the flask was steam distilled, using the British Pharmacopoea (B.P.) method of distillation of essential oil, for 10 hours and 15 ml of the volatile oil was collected.

Syrup xylopica was prepared according to the British Pharmacopoea monograph on preparation of simple syrup, using refined sugar and the filtered extract of the powdered fruits of *Xylopia aethiopica.* The volatile oil collected was added at the final stages and the syrup refluxed, sufficient purified water was added to make up to volume. The syrup was amber in colour, weight/ml, 1.2521 gm/ml at 29° C, optical rotation of a 1 in 100 dilution in a 1dm polarimeter tube at 28° C ie + 0.8175° to + 1.0465°; refractive index of the syrup was 1.4325 - 1.4335 at 31° C and the pH of the syrup was 4.68 at 30°.

Active Constituents

The main active constituents are diterpenes of which xylopic acid, [9,13] as the main constituent and its isomer have been identified while further chemical investigations are going on to characterise the remaining minor constituents. Xylopic acid [17,13%], is a white powdery crystal with m.pt. 180-182 °C (dec.), in soluble in water, sparingly soluble in petroleum ether, soluble in ether, methanol and acetone. $[^{o}C]_{D}^{28^{o}}$: - 144.6 (1% w/v, CH_3OH); UV - λ max 210nm (Log ϵ 3.68), 235 (3.83); IR - ν max (KBr), 3450-3200 cm^{-1}, 1720, 1700, 1650, 1475, 1380, 1280, 1165,890 and 870. MS - M^+ m/e 360 (8%), 361 (2), 316 (100) 300 (71), 285 (43), 270 (32), 148 (43), 91 (61). High Resolution MS gave 360.23288 (C_{22} H_{32} O_4) and 316.20534 ($C_{20}H_{28}O_3$).

The isomer coded FE, is white crystalline solid, m.pt. 282-284 °C, insoluble in water, sparingly soluble in petroleum-ether and ether soluble in methanol, acetone, and chloroform $[^{o}C]_{D}^{28}$: - 191 (0.18 w/v CH_3 OH) UV - λ max 213nm (log ϵ 3144); IR - ν max (KBr) 3200cm^{-1}, 1705, 1650, 1470, 1450, 1380, 1170, 1060, 825, 790 and 740. MS - M^+ m/e 360 [13%] 345 (19). 318 (56), 300 (94), 285 (81), 120 (69), 105 (75), 91 (100), 79 (88).

Volatile Constituents

The essential Oil of *Xylopia aethiopica* is found to compose of many constituents belonging to different chemical classes e.g. mono and sesquiterpene hydrocarbons, alcohols, aldehydes and oxides. The monoterpene hydrocarbons accounted for about 19.5% of the oil of which B-pinene was the most prominent (14.6%); Sesquiterpene hydrocarbons accounted for 10.4% of the oil.

Alcohols represented the largest group of constituents of the oil (Ca 41.4%) of which terpinene-4-01 was found to be the major constituent (23.4%). Cuminic aldehyde (6.5%) was identified in a moderate concentration. Of the oxides, 1, cineole has a concerntration of about 16.3%. The presence of the crystalline constituents

[9,13] and the essential oil constituents [11,12] have all been confirmed independently as well.

EXPERIMENTAL

Preparation of Samples for Testing

The syrup xylopica (Sample A); Simple Syrup B.P. (Sample B) and extract of *Xylopia aethiopica* fruit (sample C) were used well as aliquots of the samples and 1 in 10 and 1 in 50 dilutions were also used. Methanol (M) was used as a positive control.

Test Culture Organisms

The test organism consisted of an 18 hour nutrient broth cultures of both two Gram positive trachea bacteria, *Staphylococcus aureus* NCTC 7972 and *Streptococcus viridens* USTTC 121 and two Gram negative enterobacteria *Escherichia coli* USTC 107 and *Pseudomonas aeruginosa* USTC 41 all subcultured from master cultures isolated at the U.S.T. Medical School (U.S.T.C.) were used. The bacterial cultures were maintained on nutrient agar (oxoid) [14] at 4 °C. Prior to testing they were subcultured in liquid nutrient medium (oxoid) and incubated at 37 °C for 18 hours and then used for the test.

Antimicrobial Tests

The cup-plate assay method was used to assess the antimicrobial activity of the test solution.

Four holes (8mm in diameter) were made in nutrient Agar plates (10 x 10cm) which had previously been seeded with 0.1 ml of test organism. Alternate holes were filled with aliquots, 4 drops from 1.0 ml pipette, of the samples of 1 in 10 and 1 in 50 dilutions were also done.

Each test/sample was replicated three times. The plates were allowed diffusion time of 1 hour on the bench and finally incubated at 37 °C for 18 hours and examined. Zones of inhibition due to the activity of the samples on the test organisms were measured after 18 hours of incubation.

The diameters of these zones of inhibitions were expressed as follows:-

i) - (no activity)
ii) + (diameter of inhibition zone up to 10 mm)
iii) ++ (diameter of inhibition zone between 10-15mm)
iv) +++ (diameter of inhibition zone between 15 - 20mm)
v) ++++ (diameter of inhibition zone above 20mm)

SUMMARY OF RESULTS

(See page 35)

DISCUSSION

Syrup Xylopica is active against all the four organisms. There is almost no difference between the original sample concentrate A_1 and the 1 in 10 dilution A_2, and dilution 1 in 50 A_3, also showed a considerable activity. The extract sample C_1, from which the syrup is made in its concentrated form is relatively active against all the four organisms which reduces considerably with dilution. At dilution 1 : 50 it shows no activity against *Streptococcus viridans* and *Pseudomonas aeruginosa.*

The simple syrup B.P., sample B_1 in its concentrated form, B_1, shows no activity against *Staphylococcus aureus* and *Streptococcus viridans.* At dilution 1 : 10 it barely shows activity against the four organisms; and no bacterial activity at all at dilution 1 : 50. The sample dissolved into activity against the test organisms even though there was some sample diffusion in most cases.

Further work on the formulated syrup xylopica is still in progress.

INTERPRETATION OF RESULTS

(See page 36)

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SUMMARY OF RESULTS

Codes: A_1 Total; A_2 1 in 10; A_3 1 in 50 test sample

B_1 Test Sample; B_2 Test sample; B_3

C_1; C_2; C_3

Table 1: M - Methanol (Control)

T. samples/ control	E. coli (mean in mm)	Staph. A. (mean in mm)	Strept. v (mean in mm)	Pseudomonas A. (mean in mm)
A_1	30	22	22	15
B_1	12	-*	-*	18
C_1	15	15	16	13
M	-	-	-	-
A_2	32	18	16	12
B_2	10	-*	-*	10
C_2	12	12	12	10
M	-	-	-	-
A_3	20	15	15	10
B_3	-	-	-	11
C_3	10	12	-	10
M	-	-	-	-

Diffusion only, no inhibition

INTERPRETATION OF RESULTS

Table 2

	E. Coli	Staphylococcus aureus	Streptococcus viridans	Pseudomonas aeruginosa
A_1	++++	++++	++++	+++
B_2	++	-*	-*	+++
C_1	+++	+++	+++	++
M	-	-	-	-
A_2	+++	+++	+++	++
B_2	+	-	-	+
C_2	++	++	++	+
M	-	-	-	-
A_3	+++	++	++	+
B_3	-	-	-	-
C_3	+	+	-	-
M	-	-	-	-

*Diffusion only no inhibition

ACKNOWLEDGEMENT

The author wishes to thank Mr. Mike Pobee of the Department of Pharmaceutics for the technical assistance.

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