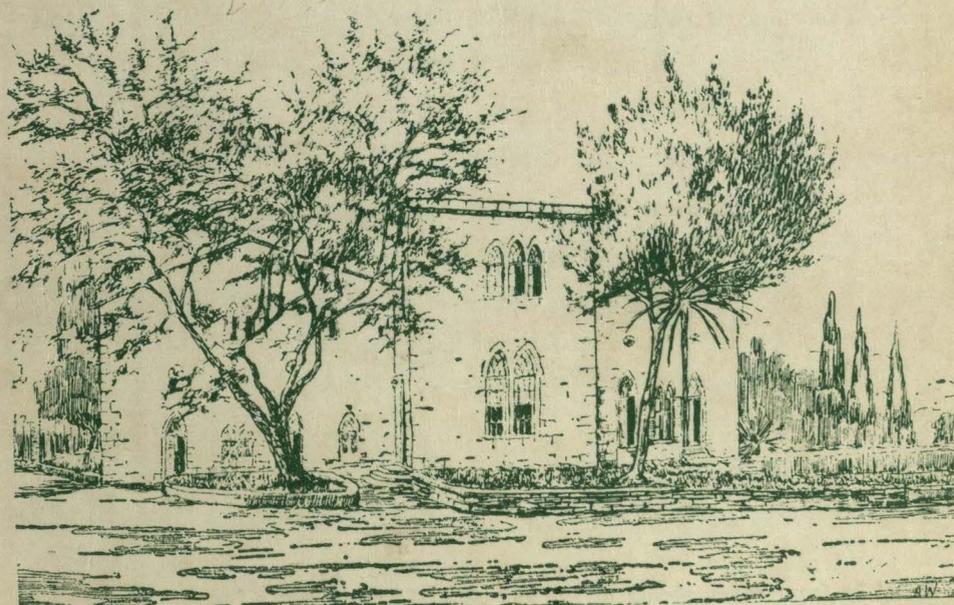




# The Apothecary



1949

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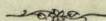
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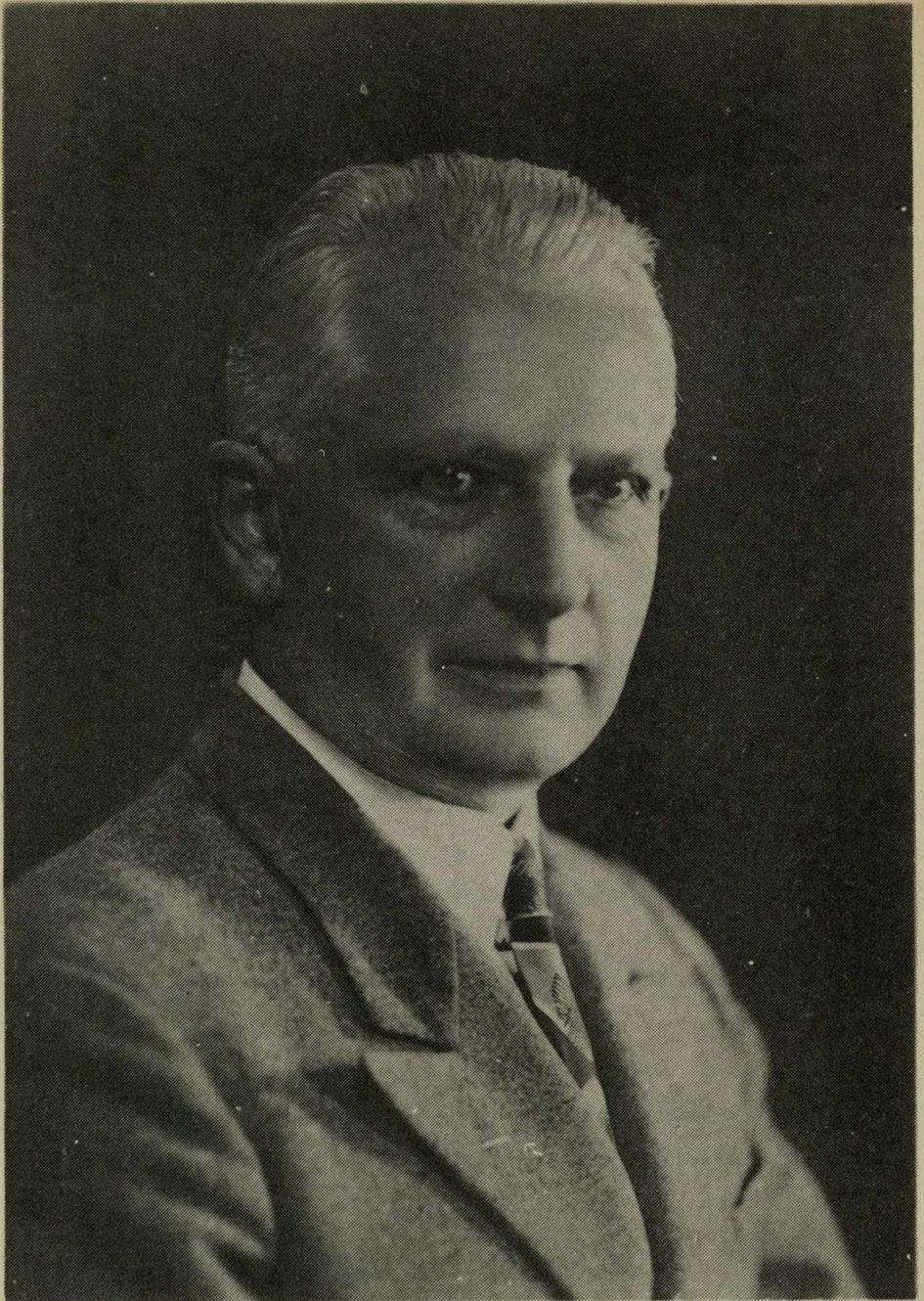
JUNE 1949



*The front cover sketch of the School of Pharmacy has been especially  
drawn for The Apothecary by Professor Alexander Wuthier  
of International College, Beirut.*

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THIS NUMBER OF THE APOTHECARY IS  
GRATEFULLY AND RESPECTFULLY DEDICATED  
TO OUR BELOVED RETIRING TEACHER,  
COLLEAGUE AND DIRECTOR -

RUDOLPH JOHANNES PAULY



## RUDOLPH PAULY

In dedicating this issue of "The Apothecary" to Rudolph Pauly the faculty, staff, and students of the School of Pharmacy wish to pay homage to the man who, for 25 years, at first as instructor in chemistry, later as professor of pharmaceutical chemistry, and finally as director of the School and the University Pharmacy, devoted his efforts and services to the cause of pharmaceutical education and is now severing his connections with this institution in order to go back to his mother country, the United States, to establish a home for his grown up children and look after their education.

Rudolph Johannes Pauly was born in Walla Walla, Washington in 1898. After completion of the Public and High School, during which time he was closely associated with the Boy Scouts of America and the Boy's Choir of St. Paul's Episcopal Church, he attended Whitman College in the same city. His love for rows of bottles, what happened when their contents were mixed, and whether the resulting products were worth anything led him to major in Chemistry and minor in Economics. During college years he assisted in the library and the chemistry laboratories, sang baritone in the Glee Club, was a member of Sigma Chi fraternity, attended two summer camps of the R. O. T. C. at the Presidio, San Francisco where he earned a sharpshooter's medal and, during his senior year, was captain of the college unit of the Reserve Officers Training Corps.

When his college days were nearly over in 1920 World War I had ended but the fact that many of his classmates had been abroad, coupled with the unsettled conditions of the times, led him and a friend to apply for a teaching position at the American University of Beirut as a broadening experience. He and Paul Copeland, brother in-law to President Penrose, travelled to Beirut seeing Quebec, Scotland, England, Holland, Belgium, and France enroute.

During his first period here as instructor of chemistry, from 1920-1923, when all the chemistry and pharmacy was taught in the building now devoted to pharmacy alone, he first took charge of the laboratories of inorganic and analytical chemistry and assisted in the recitations of these and the course in Organic Chemistry. He did so well that Prof. Close, head of the Chemistry Department, felt it possible to go on a year's leave of absence long due him. This meant that in his second year of teaching Mr. Pauly gave the lectures of Organic, Analytical, and Physiological Chemistry to pharmacy and pre-medical students many of whom were 10 years his senior. That he must have done well is evidenced by the fact that many of his students of those days, now successful physicians, stop to recall the value of those years whenever they meet him. He also found time to participate in the plays put on by the Staff Association. Two summers he joined the parties of American staff who toured Europe - thus getting to visit most of the central European countries. During the first summer he paid a visit to an aunt in Germany who, fearing he might not know sufficient German, asked the daughter of an apothecary friend to act as interpreter. This acquaintance grew into a friendship which brought him back to the same place the second summer and, three years later, led him to the altar. Upon the completion of his period as a "staffite" he joined Dan Bliss and Lex Kluttz to make up a "Circumterrestrial Trio" to return to the United States by way of Iraq, India, Malay, China, and Japan thus bringing up to 46 the number of countries he

had visited. Enroute they presented greetings of the University to King Feisal in Baghdad, ran into a continuous monsoon in India, visited Rangoon College in Burma and Canton Christian College in China, besides the various tourist sights of these countries, and finally experienced the terrific earthquake of 1923 in Japan where their boat was in Yokohama Harbor while that city was demolished by quake, typhoon, and fire and remained for six days to act as a relief vessel.

He arrived home a week before taking up teaching duties at his Alma Mater, Whitman College. Our recently inaugurated Pres. S. Penrose was in one of his Freshman chemistry courses at the time. Feeling the need for advanced work after one year Mr. Pauly went to Yale University as a graduate student and assistant at the Sterling Chemistry Laboratory. Here he specialized in Organic Medicinal Chemistry under Dr. A. J. Hill. After his first year there his mother joined him in a trip to attend his wedding in Brieg Bez. Breslau and bring back his bride. Towards the end of his second year at Yale he received a call to teach in the School of Pharmacy here in Beirut. In preparation for this post he then studied twelve months in the Graduate School of Pharmacy at the University of Wisconsin under Dr. Edward Kremers, one of the outstanding teachers of Phytochemistry in the United States. Majoring in Drug Chemistry and minor- ing in food chemistry and pharmacology, he obtained his M.S. in 1927 and published a monograph on the "Determination of Water by Distillation Methods" and a journal article on "The Determination of the Diastatic Activity of Honey".

Returning to Beirut in the Fall of 1927 with Mrs. Pauly, after a revisit to her home on the way, he took up his duties as Adjunct Professor of Pharmaceutical Chemistry in the School of Pharmacy and also assisted Dr. E. St. John Ward, Dean of Medicine, in the course of Pharmacology. During this period the Chemistry Department was moved to its present quarters and the School of Pharmacy expanded to occupy the whole of the building. In 1930 Prof. Pauly returned to Wisconsin to complete his Ph.D. degree leaving Mrs. Pauly with her mother in Germany. His thesis was:- "Chenopodium ambrosioides L. var. Anthelminticum, A. Gray and Its Volatile Constituents". On March 1 he received a telegram that he was a father of twins. One twin, a sister to Ralph, lived only six weeks.

On his return to Beirut in 1931, now as Associate Professor of Pharmaceutical Chemistry, the School was growing rapidly. In 1932 a full four year course of studies was begun which was made to apply to all students in 1942. The enrollment had jumped to 105. A student Pharmaceutical Society was started in 1933 which set a new tone to social life on the campus culminating in several large formal balls at St. Georges Hotel. It was during this period that the curricula of the School was enriched with courses in Latin, Biodrug Assay, History of Pharmacy, Library Practice, Jurisprudence and Pharmaceutical Ethics. Prof. Pauly also extended the work of the Public Analyst Laboratory to meet the growing demand for this type of work.

During 1938-1939 the first part of his furlough was spent in Ventnor, N. J., from where he commuted to Philadelphia to audit courses in P. C. P. & S., while the last five months were spent in the French section of Switzerland that he might learn the French language better. War broke out while he was in Corcelles near Neuchatel with his family. They were finally able to take a boat from Italy and reach Beirut a week before the opening of the University. The war years added new duties. Besides his regular teaching he took over the direction of the School and the University Pharmacy upon the retirement of Prof. T. Ladakis in 1942. Ways were found to augment the dwindling purchasing power of the worker's wages in the

School by accepting orders for the compressing of tablets and the preparation of parenteral solutions a demand for which was caused by the difficulties with imports. From the income some \$3000 was also accumulated with which to purchase manufacturing pharmacy machinery after the war. Because of the lack of dextrose for injections Prof. S. E. Kerr and he worked out a method for the preparation of a parenteral solution of invert sugar for the hospital. Their method was published and used by many other hospitals throughout the world during the war. Prof. Pauly was also appointed American Advisor on the Joint Pharmaceutical Advisory Board in the Foreign Economic Administration for the Middle East, which group was concerned with obtaining and allocation of pharmaceutical supplies for Lebanon and Syria. As students from this part of the world could not go to Europe or America for study the enrolment of the University as a whole doubled. The School of Pharmacy limited its number of incoming students to thirty and at the same time raised its standards for entrance. The total number of students in the School since that period has remained nearly ninety each year.

In 1946 Prof. Pauly was able to get off with his family for a year of furlough. Leaving early with his eldest son he was able to get in a summer as Visiting Scientist at the Sterling-Winthrop Research Institute at Rensselaer, N.Y. while waiting for the rest of his family to obtain passage. Then he had three months with them at the home of his mother in Walla Walla which place he had not seen for 14 years. Leaving the family there he joined the faculty of the School of Pharmacy of the University of Georgia as Professor of Pharmaceutical Chemistry for a period of six months, after which his family joined him for a month in the mountains of North Carolina before returning to Beirut. During his stay in the United States he was able to place orders for much of the machinery that has been put into use in the last two years to supply the ever increasing needs of the hospital with pharmaceutical preparations. As Chairman of the Drug Committee he has seen the third edition of the Hospital Formulary completed this April.

Through the many years of service in his quiet, forceful way, he has been the influence around which the School of Pharmacy has functioned and prospered, not only in its internal affairs but in its relationships to the other departments of the University, the pharmaceutical profession and the other health professions of this country. He has been available at all times in order to give unbiased, competent, and constructive advice on diverse problems to colleagues, graduates, students and others who have incessantly sought it from him.

Dr. Pauly's resignation will leave a great vacancy in the School of Pharmacy which will remain as this generation will live; and his influence will continue to persist as long as this institution will last.

To you, Dr. Pauly, and to your family we wish many happy and fruitful years in the United States and year after year as the A.U.B. School of Pharmacy opens its doors to a new generation you will be with us in spirit and we will be with you.

A. H.

#### Prof. Pauly's Creed

"I expect to pass through this world but once; any good thing, therefore, that I can do, or any kindness that I can show to any fellow-creature, let me not defer or neglect it, for I shall not pass this way again."

*Pharmacy*



*Faculty*



President  
S.B.L. PENROSE

Dean  
J. O. PINKSTON

Director  
RUDOLPH J. PAULY

Professor  
AMIN F. HADDAD

Professor  
FUAD ISTFAN

Professor  
C. ABU CHAAR

Public Analyst  
E. VORPERIAN

Instructor  
L. KARAMANOUKIAN

## MESSAGE TO THE GRADUATING CLASS

After having attempted to teach students of the American University for twenty five years, with breaks now and then in order to refresh my material, I have learned a universal truth of teaching: that a teacher can only guide the student to the fountain of knowledge but he cannot make him drink of its substance.

The desire and will to learn lies wholly in the student. That teacher who has been able to kindle even a spark of desire towards learning can be considered as having fulfilled his mission.

I trust that in the past years of contact with you and the other students who have gone before you I have, at least, given you the desire to work with your colleagues in the practice of your profession as a service to mankind and that you will do such on a high ethical level.

It is not easy for me to leave this School and Country, which have become so much a part of my life. I shall always remember it and the students who have vitalized it and hope that you, too, may look back someday upon your student years as having been among the happiest and most valuable years of your lives.

Sincerely yours,

Rudolph Pauly



Zaki Abu-Ghazalah

Nablus

Quote: "Be good wherever you go"

Plans: Not decided

Likes: "Hareem"-the fair sex, cinemas, reading stories.

Abdul-Ghani Anabtawi

Nablus

Quote: "Know thyself"

Plans: To study bacteriology, and to see the social standards of the profession raised.

Likes: Professional literature, swimming, dinemas.



Nabih Atiyyah

Beino

Quote: "To be or not to be - that's the question"

Plans: To practise the profession

Likes: Social activities

Adib Bashshur

Safita

Quote: "My strength is as the strength of ten, Because my heart is pure"

Plans: To practise the profession

Likes: Social activities



Daud (David) Farsun

Haifa

Quote: "Some for the glories  
of the world, Some sigh  
for the Prophet's Paradise  
to come"

Plans: To study bacteriology

Likes: Music, sports, social life



Adib Jidawn

Haifa

Quote: "Don't waste your life for  
the sake of a few minutes'  
pleasure"

Plans: To establish a pharmacy.

Likes: Girls, politics, dancing,  
trips, stamp collection.

Abdur-Rahman Kadri

Nablus

Quote: "Beauty is truth, truth  
is beauty,  
That's all ye know on earth,  
And all ye need to know"

Plans: To establish a pharmacy,  
then to marry.

Likes: Agriculture, Civic Welfare.



Uthman Kanafani

Haifa

Quote: "The world is a camera, SMILE,  
The task seems lighter,  
If you do it with A SONG!"

Plans: Travel and manufacturing pharmacy.

Likes: Music, "Baladi"(Oriental) Dance,  
Acting, driving, swimming,  
painting, picture and stamp  
collecting.

Hani Kawar

Sult

Quote: "Duty does not stop where power fails"

Plans: To practise the profession

Likes: Reading, rowing, swimming



Barkev Mugrditchian

Aleppo

Quote: "To thine own self be true and it will follow, as the night, the day That thou cans't not be false to any one"

Plans: To practise the profession

Likes: Journalism, agriculture, music, stamp collection.

Berj Nalbandian

Karkuk

Quote: "It's remarkable that when lips are silent, minds speak"

Plans: To become an army pharmacist and two years later - a pilot.

Likes: Music, riding, driving, painting.



Helene Perucka

Turka n/Str.

Quote: "Life is not easy for any of us. But what of that, we must have perseverance and confidence in ourselves."

Plans: To practise the profession

Likes: Music, sports.



Mundhir (Munzer) Shabib

Haifa

Quote: "All's well that ends well"

Plans: To become an army pharmacist.

Likes: Trips, cinemas, driving,  
skiing.

Jamil Suruji

Nazareth

Quote: "Beautiful faces are they that  
wear  
The light of a pleasant spirit  
there,  
It matters no whether dark or fair

Plans: To practise the profession

Likes: God knows!



Amin as-Sus

Liddah

Quote: "There is no meaning for  
life, if accomplished  
with despair"

Plans: To practise the profession

Likes: Reading, politics

George Tarazi

Ramleh

Quote: "The most valuable result  
of good education is the  
ability to Make Yourself  
Do the Things You Have To  
Do When It Has To Be Done,  
Whether you like it or not.

Plans: Study, open a pharmacy,  
family life.

Likes: Trips, music, swimming.  
stamps.





Samuel Manushakian



Partig Partikian



Rauf Salfiti



Joseph Abadi

# Third Year



Majid Yarid



Janina Herman



Nadim Khalluf



Solak Tutelian



Sarkis Keyorkian



Maria Widacka



Fuad Zaru



Hagop Mekhtchian



Edward Ishkhanian



Movses Bezirgianian



Anwar Hakim

# Third Year



Fuad Hakim



Abdul-Kadir Buhayri



Fahd Farraj



Hagop Ishkhanian



Anna Bem



Farid Kusus



Nuha Baddurah



Muhammad Faydi



Manuk Kemelian



Milad Milad



Joseph Andonian



Adil Maksad



Anis Wahbah



Hamdi Dürüst

## Second Year



Riyad al-Alami



Hovhannes Merdjanian



Badi Batshon



Salamah Kayyali



Hagop Yazijian



Sami Naman



Albert Krikorian



Victor Hitti



Bashir ar-Rashid



Kamal Tuffahah



Ilyas Hawwa



Samih Afifi



Ilyas Bikhazi



Daniel Abdulyan



Sabri as-Sukhn



Fathi Sayyid-Habib

# First Year



Morris Karam



Salim al-Jurdi



Ara Israbian



Nubar Tepelian



Jubran Atallah



Panos Titizian



Ibrahim Abd-us-Sayyid



Maurice Mikhail



Agop Marcarian



Rizkallah Mazlum



Samy Atala

# First Year



Amin Husayn



Faris Musallam



Serge Vinogradov



Amal Abu-Ghazalah



Muhammad Nimr



Ilyas Farah

Rifat Kishani



Edward Hitti



Fuad Taktak

Subhi Nassar

## Editorial

This, the fourth annual number of *The Apothecary*, remains true to its original purpose of bringing to its readers the new, the useful, the important, and the interesting in the field of pharmacy.

The *Apothecary* entertains the earnest hope of reviving cherished old friendships among the Alumni of the School. It hopes through its contact with other Schools of Pharmacy, to bring about an exchange of ideas and to provide stimulating contacts otherwise impossible because of time and distance. Thus *The Apothecary* welcomes exchanges of similar publications with other Schools.

A new feature in this year's issue, suggested to the Magazine Board by Prof. Amin Haddad, is the biography of a prominent Alumnus who did much to advance the cause of Pharmacy. Henceforth, it is hoped that each number shall carry at least one such biography.

The Magazine Board wishes to thank Prof. Alexander Wuthier for his beautifully executed cover sketch of the Pharmacy Building and Dr. Chas. Miller, chairman of the off-print press committee for his valuable assistance in make-up and style.

The success of *The Apothecary*, the continuous increase in the number of readers, even the actual realization of its publication, all have been due to the unrelenting efforts of the beloved director of the School of Pharmacy, Dr. R.J. Pauly, with his boundless enthusiasm for this project. Without his encouragement, without his readiness to participate and give help, without his advice and counsel, *The Apothecary* would not have become what it is today. It is with trepidation that the Magazine Board views his departure to his great and beloved country. However, they feel assured that he will continue to encourage and help them from across the sea by his valuable suggestions and by contributing material for publication. It is the Board's earnest desire that *The Apothecary* may continue to be published - published as a tribute to the man, who for a quarter of a century, gave generously of himself to further the cause of Pharmacy not only in Lebanon but also in the whole of the Near East through his students whom he loved so well. The Board, in acknowledging its debt of gratitude to Dr. Pauly, wishes him, Mrs. Pauly and their children Godspeed, asking the Lord to grant them long years of peace, happiness, and prosperity.

C.A.C.

(Boston, April 14)



Two Generations of Lebanese Pharmacists

Daoud Bechara Nahoul (1854-1931)

Adib Daoud Nahoul (1886- )

Daoud Bechara Nahoul was born in Deir-el-Kamar in 1854. His father occupied an important position in the office of Franco Pacha, "Mutassarif" of Lebanon. Therefore, during his childhood Mr. Daoud Nahoul had the opportunity of being the play-mate of the Pacha's children. The Pacha liked the young Daoud and appointed him to a position in his office with a remunerative pay. However, the ambitious young man resigned his attractive position as he wanted to build for himself a liberal career. In 1873, the School of Pharmacy of the American University of Beirut (then the Syrian Protestant College) was started and in the same year Daoud Nahoul and Salim Hallaq registered as first year students. Two years later, in 1875, both obtained the pharmacy degree and were entitled to appear before the Imperial School of Medicine at Constantinople for examination to obtain the license to practise Pharmacy in Lebanon.

Upon his graduation Mr. Nahoul established his well known pharmacy at Burj (Place des Canons) in Beirut. In a few years the pharmacy flourished so as to occupy a vast two-story building with four big doors on the main street. The pharmacy had well equipped laboratories with all necessary instruments, scientific or otherwise, for manufacturing and analytical work. It could compare favourably with the best pharmacies in Europe. Aside from prescription work, for which 8 to 10 compounders were employed, Mr. Nahoul's pharmacy supplied pharmacies in Lebanon and the neighbouring countries with all pharmaceutical supplies needed, including galenical preparations made on the premises. In this pharmacy Prof. T. C. Ladakis did his practical (stage) work.

Mr. Daoud Nahoul was one of the founders of the Society of Physicians and Pharmacists as well as of the Beirut Syndicate of Pharmacists. He was an active member of many social and philanthropic organizations. For many years he was a member of the Council of Advisors to the Wali of the Vilayat of Beirut. Mr. Nahoul died in Beirut in 1931 survived by his widow, Adma Sassine, and his four children, two boys and two girls.

Adib, the eldest son, succeeded to his father's business. He was born in Beirut in 1886. He went to school first at Zahrat-el-Ihsan, then at the Shwayfat High School (now National College of Shwayfat). Later he entered the Ecole Laïque, Henri Olivier, to learn the French language, which he now masters. He finally went to the Preparatory Section of the Syrian Protestant College, where he finished his secondary education in three years after which he entered the School of Arts and Sciences of the same institution from which he graduated in 1908 with a degree of B.A. He always chose mathematics and natural sciences as his elective courses. He was specially capable in differential and integral calculus.

Against his father's wish who wanted his son to study medicine, Mr. Adib Nahoul registered in the Pharmacy School from which he graduated in 1915, and in 1916 he successfully passed the pharmacy license examination required by the Turkish Government.

From 1915-1931, Mr. Nahoul was in charge of the Clinical Laboratory of his father's pharmacy doing biochemical and microscopical analysis, a type of work in which he got interested while a student of pharmacy. Because of his personal interest and out of private exertion, Mr. Nahoul developed himself to become one of the leading analysts of his time in Beirut. In 1931, when he succeeded his father in the direction of the pharmacy he closed the clinical laboratory and discontinued his analytical work which he always loved.

Mr. Nahoul is not married. He has a well sized library composed of books on different topics: history, literature, poetry, art, and music. He has a good collection of books on hunting and dog breeding. He is fond of classical music and has a big collection of records of both oriental and occidental music. He is a good shooter and for many years was a member of the Pointer Club of France. In 1922, he imported thorough-bred pointers to this country. His collection of sixty pipes which he used during the period ever since he started smoking until now attracts the attention of the visitor. He believes that the best furniture a person can own is persian rugs of which he has a beautiful and rich collection.

Mr. Nahoul is very active in Pharmaceutical circles and ever since 1933 to-date he has been re-elected yearly as President of the Syndicate of Pharmacists of Beirut (of Lebanon now). During the latter part of the second World War he served as the Lebanese Government Representative on the Pharmaceutical Advisory Board which was composed of American, British, French, Syrian and Lebanese representatives. He was always called upon to help in the making of the pharmacy laws of the country, and more particularly during the last six years he was exceedingly busy on the formulation of a proper and modern general pharmacy law which he now hopes will appear soon. His stand on many occasions to make the pharmacy law clear and comprehensive to protect the pharmacy profession and to safeguard the health of the public against unqualified and illegal dealers of drugs shall be remembered by many generations of pharmacists and many a patient.

A BRIEF HISTORY OF THE  
LEBANESE SYNDICATE OF PHARMACISTS

by Adib D. Nahoul, B.A., Phar.M., President

Prior to the first World War there were about 15 pharmacies in Beirut. This number was sufficient to meet the needs of the population and, at the same time, it allowed pharmacists to derive from their pharmacies an income that made possible for them a decent living and helped them to maintain in society the rank to which they were entitled by the general education they had received and their professional knowledge and responsibility. A new pharmacy would open every now and then - the now and then meaning several years - to meet a real need, and thus a right proportion between the number of pharmacies and that of the population was automatically maintained to the advantage of both population and pharmacists. The only professional association which existed at the time was the Society of Physicians and Pharmacists. The primary object of this association was the maintenance of a high ethical standard in both groups.

When the first World War came to an end, for reasons that need not be enumerated here, there was a rush of pharmacists to Beirut from different parts of the Ottoman Empire. They were allowed to open new pharmacies. This perturbed the proper ratio which should always exist between the number of pharmacies and that of the population, which ratio is imposed by law in many countries.

A new factor came into play which made things worse for the pharmacists of Beirut. Prior to the first World War few proprietary and patent medicines were imported into this country and prescribed by physicians. By far the greater number of prescriptions called for official preparations, and the more important pharmacies employed as many as 8 or 10 assistants for compounding these. The advent of proprietary and patent medicines, in continual and ever increasing amounts, made it easy for people, entire strangers to the profession, to deliver them to the public notwithstanding the stipulation of the law against this procedure. In order to resist the external competition, some pharmacists, like the fallen man who tried to rise up by pulling at his boots, started cutting down the profits to which they were entitled for the sale of these remedies. In a very short time confusion and unfair competition became almost general. The more important pharmacies in town which had been highly flourishing, together with others, were menaced with ruin. The standard of the profession which had been high was falling low; a phenomenon that always accompanies unfair competition and poor business conditions in Pharmacy.

It was at this time, when some of the more clear and high minded pharmacists, in order to remedy the situation, thought of creating from those pharmacists who own pharmacies, an association which would bind its members together with two objects mainly in view: (1) the maintenance of high professional standards, and (2) the protection of their pecuniary interests. It is as well to note here again that a high professional standard cannot be maintained if the business side is neglected or not properly attended to.

After some preliminary meetings the promoters of this idea drew up the statutes of the new association which they called the "Syndicate des Pharmaciens de Beyrouth". It was stipulated therein that Arabic was to be the official language of the Association. To this, the authorities at that time did not agree, when the statutes were submitted with a demand for a license for the Syndicate.

The difficulty was, however, surmounted by a slight change in the wording and Le Capitain de Fregate Trabaud, "Gouverneur du Grand Liban" sent Mr. Daoud Nahoul, President du Syndicate des Pharmaciens de Beyrouth, a letter in french dated the 29th, January 1921 which began thus: (translated) "In reply to your letter of the 17th, inst. I have the honor to inform you that I see no further objection against approving the statutes of the "Syndicat des Pharmaciens" modified as proposed by you. Arabic and French will be used in your deliberations, discussions and correspondence which is an excellent and indispensable procedure".

After the Syndicate had legal existence a general meeting of Pharmacy Owners was held. The meeting approved the statutes and elected, in accordance with their provisions, the Managing Committee with Mr. Daoud Nahoul as President. He continued to be re-elected yearly as President until his death in 1931. He was succeeded by Mr. Hassib Batlouni who in turn was succeeded in 1933 by the writer of this article, who continued to be re-elected yearly to that office until the present day.

It is noteworthy to mention here that the newly elected Committee at the very first meeting it held on the 2nd of August 1921 adopted a resolution to send a deputation to the Director of Public Health (there was no Minister of Public Health at that time) to ask him with insistence:- (1) That the laws concerning the practice of Pharmacy be applied integrally, and (2) That the number of pharmacies be in a fixed ratio to the number of population. Ever since that time, up to the present day, strenuous efforts were made to secure these ends with variable results.

A short time after the formation of the Syndicate, and thanks to its efforts, "La Commission Superieure de Pharmacie" was created in the Public Health Department in which the Syndicate was represented by its President. This commission was to deal with all questions relating to pharmacy. Its decisions were final. It was made up of only professional men and rendered a real service to the profession of pharmacy on several occasions.

Two aims lay clearly defined for the Syndicate. The first was to stir the authorities to act and act in the right way. This they tried their best to do as shown by the voluminous correspondence extending over a period of nearly 30 years and the innumerable deputations which at different periods and occasions called upon high officials to ask grievances redressed or abuses stopped. The second was to bring pharmacists together, make them understand their real interests and especially to make them look upon each other as colleagues, not as competitors. In this second aim the Syndicate is to be highly congratulated for the success achieved under its auspices. It may not be 100 per cent but is close to it. It could have been 100 per cent long ago, had pharmacists had a longer experience in team work and mutual brotherly interest. Pharmacists now are friendlier, have more faith in one another and realize that had it not been for their Syndicate and its "Tariff" (a list of fixed prices for ingredients of prescriptions, revised semi-annual, and a uniform method for calculating the price for prescriptions very similar to that of the "Deutsche Arzneitaxe" - Ed.) official recognition of which was secured, half of them would have starved during the last war and the other half would have gone to jail.

When the new law concerning labor was promulgated the Syndicate had to reorganize itself to comply with its requirements. In answer to a wish expressed by many pharmacists established outside Beirut, it seized the occasion and modified its statutes so that all qualified pharmacists established anywhere in Lebanon could become a member in the newly named "Syndicate of Pharmacists of Lebanon".

PHARMACY CONTROL IN PALESTINE  
DURING THE BRITISH MANDATE

May 15, 1948, is a memorable date in the history of Palestine. That date marked the destruction of a flourishing administrative machinery which was being progressively built up during the last thirty years. The machinery governing the pharmaceutical trade in Palestine which was also destroyed on May 15, 1948, comprises interesting study.

In this brief survey I wish to acquaint my fellow pharmacists in Lebanon and the neighbouring countries with a few general aspects of the law enacted for the control of the pharmaceutical trade in Palestine and the procedure adopted for the application of this law.

The fundamental structure of legislation governing pharmacy and the drug trade in Palestine was based on three main ordinances:

- The Pharmacists' Ordinance, 1921-1930.
- The Trades & Industries (Regulation) Ordinance, 1927.
- The Dangerous Drugs Ordinance, 1936.

Among the main provisions embodied in the Pharmacists' Ordinance and Rules made thereunder are the licensing of pharmacists, licensing of Assistant pharmacists and the issue of Poison permits.

The Trades & Industries (Regulation) Ordinance classified the various trades, and for the purpose of licensing, laid down special conditions in respect of each trade. The drug trade was classified into the following four classes:

- (a) Pharmacies
- (b) Wholesale dealers in drugs and poisons
- (c) Dealers in simple drugs
- (d) Manufacturing chemists and druggists and manufacturers of medicinal products.

The dangerous Drugs Ordinance governed the possession, trade, import and export of narcotics, limiting this trade to the licensed pharmacist and binding him by rules of procedure in pursuance of the requirements of the International Opium Convention.

The powers of enforcing this legislation was vested in the Director of Medical Services. The actual application of the regulations was however the duty of the Inspector and the Assistant Inspector of Pharmacies. The office of the Inspector of Pharmacies maintained statistical records of all important data relevant to the drug trade, and was open for all enquiries of pharmacists and traders in pharmaceutical supplies. Written enquiries and applications to this office were submitted through the Senior Medical Officer of the district in which the applicant resided. All decisions taken in respect of such applications were likewise addressed to the Senior Medical Officer of the district for transmission to the applicant.

The various processes of pharmaceutical control carried out by the Inspector of pharmacies involved:

- (1) Licensing, inspection and control of public pharmacies, Wholesale drug stores, manufacturers of medicinal preparations, dealers in simple drugs, dealers in poisons, hospital pharmacies and dispensaries of voluntary and charitable medical institutions, under the Pharmacists' and the Dangerous Drugs Ordinances.

- (2) Inspection and control of Government dispensaries under Stores and Departmental Regulations, which involves control on the use of drugs, requisition, issue and receipt vouchers, checking of stocks and records and preparation of crown Agents Indents.
- (3) Licensing of qualified pharmacists.
- (4) Examination and licensing of Assistant Pharmacists.
- (5) Issue of poison permits under the Pharmacists' Ordinance.
- (6) Approvals of locally manufactured preparations, control of manufacture and taking of samples under the Special Conditions applicable to Manufacturing Chemists and Druggists and Manufactories of Medical Products.
- (7) Issue of Import and Export authorizations of Dangerous Drugs.
- (8) Preparation of returns and statistics under the International Opium Convention.
- (9) Rendering professional advice to the Department of Police and Prisons in respect of drugs, particularly dangerous drugs, seized or confiscated by that department.
- (10) Giving technical advice to the Commissioner for Commerce & Industry on the essentiality of medical supplies to be imported from non-sterling areas.
- (11) Maintaining inter-departmental cooperation with the Department Customs and Excise regarding the examination and sampling of drugs arriving at the customs, the disposal of unclaimed or forfeited medical supplies and the release of duty free alcohol allocations to hospitals and medical institutions entitled to such exemptions. Of particular value was the cooperation in checking all narcotic drugs arriving at the customs against the respective import authorizations issued by the Director of Medical Services.

It was not my intention to bore you with details of legislation and procedure yet I do like to throw a little more light on a few procedures of pharmaceutical control in Palestine during the British Mandate.

Licensing of establishments: The law compelled every establishment for the sale of drugs and poisons to be licensed. Such licensing was subject to compliance with Special Conditions issued under the Trades and Industries (Regulation) Ordinance in respect of each class of trade. Applications for licensing of establishments were submitted through the Senior Medical Officer of the District accompanied by detailed plans of the proposed establishments showing dimensions, area of window space, internal arrangement and water supply through sink to main drainage. If the establishment was found to conform with the standard requirements laid down in the regulations and Special Conditions relative to its class of trade, approval was communicated to the Senior Medical Officer for the issue of a license.

Area, ventilation, internal arrangement, washing accommodation and drainage formed the basic factors in licensing of establishments for the sale of drugs and poisons. The minimum area requirements for pharmacies, wholesale dealers in drugs and poisons and dealers in simple drugs, was sixty square meters. Manufacturing establishments were required to comprise a minimum of six rooms, namely: Store room for raw materials, Manufacturing room, Packing room, Washing room, Store room for ready preparations, and Office.

Manufacturers engaging in processing, synthesis or ampoule filling were required to have a separate room for each type of manufacture.

Speaking of Special Conditions applicable to this class of trade the manufacture and sale of locally manufactured preparations were subject to the prior approval of the Director of Medical Services. The applications were dealt with by a drugs committee under the chairmanship of the Deputy Director of Medical Services with the Inspector of Pharmacies, Government Chemist and a Medical Officer as members, and the Assistant Inspector of Pharmacies as secretary. The functions of the drugs committee were to examine the particulars of the application from therapeutic, chemical and physical aspects and when considered necessary to order the analysis of samples submitted with the application.

The recent growth of the manufacturing industry in Palestine made it necessary to redraft these Special Conditions in 1947, requiring thereby manufacturers to maintain detailed records of manufacture and outlining special labelling instructions. Full particulars of every batch were recorded in the manufacturer's registers showing the date of manufacture, serial or batch number, quantities of the raw material used and of the finished preparation. The labelling requirements were substantially similar to those laid down in the New & Non-Official Remedies. The label affixed to every container indicated the name of the preparation, formula, dose and directions for use, net contents, batch number and the name and address of manufacturer. Wherever applicable, labels had to indicate special caution of contraindications, storage conditions or date of expiry of validity. An additional price label had to be affixed to every package. The prices printed on these labels were those approved by the Government, on application by manufacturers submitting detailed calculations.

In general a preparation had to be placed on the market within six months from the date of its approval and for purposes of control manufacturers were required to retain three packages from every batch for a period of three months from date of manufacture.

Licensing of Pharmacists and Assistant Pharmacists: A qualified pharmacist desirous to obtain a license to practise pharmacy in Palestine, submitted an application on a special printed form giving the required particulars and enclosing his pharmacy diploma obtained from a recognized university, study booklet, certificate of preuniversity education, evidence of Palestinian citizenship or permanent residence and a certificate of good character.

As regards assistant pharmacists, the Department of Health held the view that all persons working in pharmacies under the direct supervision of licensed pharmacists should themselves possess a certain qualification and for this purpose had to pass Government examinations.

These examinations were held in Jerusalem during the month of March of every year. Candidates were required to have undergone three years apprenticeship in a pharmacy conducted by a licensed pharmacist and to satisfy the examiners that their knowledge of English and French were adequate as to understand the British Pharmacopoeia and the French Codex.

The examination board was appointed by the Director of Medical Services and included at least three qualified pharmacists. The examinations were conducted by the Inspector of Pharmacies in accordance with a special schedule. They consisted of three separate papers on Practice of Pharmacy, Pharmacy Law and Procedure and Pharmacology including Posology. Candidates successfully passing the written examinations were admitted to the oral and practical tests.

After the findings of the board of examiners were ratified by the Director of Medical Services, successful candidates were issued with Assistant Pharmacist's Licenses and their names published in the Palestine Gazette.

Trade in Dangerous Drugs: Palestine was accepted by the Geneva Opium Board of the League of Nations as early as 1925. The requirements of the International Opium Convention had already been adopted two years earlier.

The Dangerous Drugs Ordinance, 1936, embodied that of 1925, and all subsequent amendments. The Dangerous Drugs Rules, 1936, made under the Ordinance, outlined the general procedure for import, export and trade in narcotic drugs.

At the close of each year every pharmacist rendered on a printed form an annual return showing his imports, local purchases, quantities sold, quantities dispensed and stocks held by him at the beginning and the end of the year. The object of these returns was to obtain detailed particulars of stocks available in the hands of dealers, the annual consumption, the purpose for which the drugs were used and an estimate requirement for the following year.

Applications to import dangerous drugs were accepted in January and July of every year and were scrutinized in the light of the quantities held in stock by applicants, the quantities received and consumed and the quantities on outstanding orders, endeavoring to keep within the limits of the estimated Palestine annual requirements of dangerous drugs notified to the United Nations.

The import authorization was issued in triplicate. One copy was retained by the Director of Medical Services for reference, one copy was delivered to the importer for transmission to the exporter and a third copy was forwarded to the Government of the exporting country through the respective consul in Palestine. In the case of the United Kingdom the third copy of the certificate, was forwarded direct by the Director of Medical Services to the Home Office.

On receipt of a consignment of dangerous drugs the covering import authorization was surrendered by the importer to the Customs authorities who after endorsement returned same to the Director of Medical Services.

Inspection of Pharmacies and Drug Establishments: On the termination of the British Mandate there were more than three hundred public pharmacies in Palestine and as many other establishments dealing in drugs and poisons. As a rule each establishment was inspected once in every three months. More frequent inspections on a particular establishment were carried out whenever it was considered necessary. The inspector made his visits in conjunction with the Senior Medical Officer of the district or his representative.

The primary objects of inspections were:

- (1) To ensure that all relevant conditions attaching to licences under the Trades and Industries (Regulation) Ordinance were complied with.
- (2) To check, examine and take samples of drugs for analysis.
- (3) To examine poison registers and check the purchases, sales and stocks of poisons.
- (4) To check receipts, issues and stocks of dangerous drugs against the dangerous drugs registers and to verify the authenticity of dangerous drugs returns submitted by pharmacists.

The Inspectors' reports were forwarded by the Director of Medical Services to the Senior Medical Officers concerned for action within a specified period of time.

The efficiency of this control machinery could have scarcely been accidental. It was built and maintained on mutual cooperation and confidence between pharmacist and inspector. All worked together for promoting friendly understanding and achieving security of the professional spirit.

Nassib R. Nassar, Ph.C. '32  
former Asst. Inspector of Pharmacies - Govt. of Palestine.

Private Lessons in Arithmetic !!!!!

He is teaching her arithmetic  
He said that was his mission,  
He kissed her once, he kissed her twice  
And said, "Now that's Addition".

And as he added smack by smack  
O! silent satisfaction,  
She sweetly gave him kisses back  
And said, "That was Subtraction".

Then he kissed her, and she kissed him  
Without an exclamation  
Then both together smiled and said,  
"Now that's Multiplication".

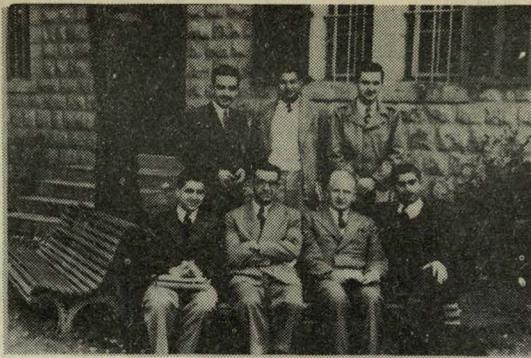
Then Dad appeared upon the scene,  
And made a quick decision  
He kicked the lad three blocks away  
And said, "That's Long Division".

(With apologies to the unknown original Author)

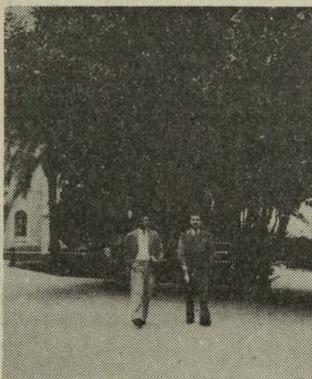
QUESTIONS

1. What are the official preparations of Penicillin in the U.S.P. XIII and B.P. 1948 ?
2. Why is Elixir Paregoric not considered a narcotic ?
3. What are: Carron Oil, Bitter Wood, Chlorodyne, Vin de l'Hotel-Dieu, Zephiran Chloride, Blue Mass, Sirop de Gibert, Brown Mixture, Decholin, Sirop Thebaique ?
4. What new drug is used in treating scabies ?
5. What is the base for Penicillin Ointment in the B.P 1948 ?
6. What is the average daily dose for: Liver Injection U.S.P., Morphine Sulfate, Strychnine Sulfate, Digitoxin, Arsenic Trioxide, Codeine Phosphate, Cocaine HCl (orally), Atropine SO<sub>4</sub>?
7. What is Caster Oil Sandwich ?

(Answers are on page 56)



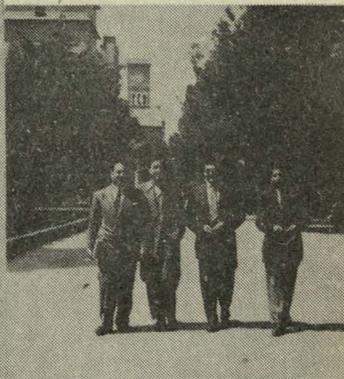
THE MAGAZINE BOARD



Under the Banyan



All of a Kind



Pharmacy Walk



Pharmaceutical Society Cinema Show

S T A T I S T I C S  
- - - - -

Number of Students in the School of Pharmacy, (1948-1949)

Year I	II	III	IV	Public Anal.	Total
31	19	23	16	3	92

Age: Below 20 : 11    Sex: Men : 85    Married : 4  
 Bet. 20-25 : 66    Women: 7    Engaged : 1  
 Above 25 : 15    Single : 87

Nationalities:

Palest.	Leban.	Syria	Egypt	Tr. Jord.	Poland	Iraq	Turkey	Others
32	21	16	7	6	4	3	1	2

Total Nationalities : 10

Ph.C. Graduates, 1949:

Number: 16    Sex: Males: 15 Females: 1

Nationalities of the Graduating Class, 1949:

Palest.	Leban.	Syria	Iraq	Tr. Jord.	Poland	Total
10	2	1	1	1	1	6

Haifa :4 Nablus :3 Nazareth:1 Liddah :1 Ramlah :1	Beino :1 Safita:1	Aleppo:1	Karkuk:1	Sult:1	Turka n/Str:1	Distribution of the Graduating Class, 1949
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Courses taught in the School of Pharmacy, (1948-1949)

Year I	II	III	IV
Botany * Chemistry * English Pharmacy I* Ph.Arithmet. Physics * Zoology *	Org. Chemistry* Pharmacy II * Pharm. Botany Pharmacognosy* Qualit. Chem.* Quantit. Chem.* Systematic Bot. Theory of Soln.	Hygiene Inorg. Pharm. Chem.* Library Prac* Microbiology* Org. Pharm. Chem.* Pharmacognosy* Physiology* Pharmacy III*	Biochemistry * Commercial Pharmacy Drug Chemistry * Ethics History of Pharm. Jurisprudence Manufact. Pharm.* Pharmacology * Pharmacy IV* Seminar

\* Indicates an accompanying laboratory course.

**SCHOOL OF PHARMACY: Periods of Study in hours per week:**

Year	I		II		III		IV	
	1	2	1	2	1	2	1	2
Semester	16	16	13	11	12	12	15	13
Classes	11	11	11	16	14.5	14.5	11	8
Labs.	27	27	24	27	26.5	26.5	26	21
Total	27		25.5		26.5		23.5	
Average	27		25.5		26.5		23.5	

**Teachers of the School of Pharmacy, (1948-1949):**

No.	Name	Courses taught by him	Total	Year
1.	Director: Prof. Rudolph J. Pauly Ph.D.	Drug Chemistry Ethics History of Pharmacy Inorg. Pharm. Chem. Library Practice Org. Pharm. Chem.	6	IV IV IV III III III
2.	Prof. Amin F. Haddad Ph.C., M.Sc.	Pharmacy II Pharmacy III Pharmacy IV Manufact. Pharmacy Jurisprudence	5	II III IV IV IV
3.	Prof. Fuad Istfan Ph.C.	Theory of Aque. Soln. Inorg. Pharm. Chem. (Lab. Part) Pharm. Arithmetic Qualit. Chemistry Quantit. Chemistry	5	II III  I II II
4.	Mr. Edward Vorperian B.A., Ph.C.	Pharmacy I (Theory, Operative, & Lab.) Pharmacy II (Lab.) Public Anal. Courses	3	I  II P.A.
5.	Mr. Levon Karamanukian B.A., Ph.C.	Pharmaceutical Botany Pharmacognosy Pharmacognosy Systematic Botany	4	II II III II
6.	Prof. Charles Abou Chaar Ph.C.	Pharmacog. & Botany. On leave, studying in the United States.		

Teachers from other Departments:

No.	Name	Courses taught by him	Year
1.	Prof. Harold W. Close Ph. D.	General Chemistry	I
2.	Prof. John Mirhij Ph. D.	Botany Zoology	I
3.	Prof. Robert W. Sloane D. Sc.	General Physics (Theoretical Part)	I
4.	Prof. Nikula Shahin M.A.	General Physics (Practical Part)	I
5.	Prof. Nicholas Constan Pharm. M., D.Sc.	Organic Chemistry	II
6.	Prof. Stanley E. Kerr Ph.D.	Biochemistry	IV
7.	Dr. Munir Kanan, M.D.	Pharmacology	IV
8.	Dr. Fuad Haddad B.A., M.D.	Physiology	III
9.	Dr. Avedis Donabedian B.A., M.D.	Physiology	III
10.	Dr. Joseph Azar B.A., M.D.	Hygiene	III
11.	Mr. Mufid Abu Khadra B.B.A.	Commercial Pharmacy	IV
12.	Mr. Garabed A. Gara- bedian, M.S.	Microbiology	III
13.	Miss Lily Jamal (Diploma of Dramatic Art)	English	I
14.	Mr. H. Anderson, B.A.	English	I

Uthman Kanafani  
Pharmacy IV

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----- 0 -----  
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Can you read these items?

(If not, turn to Page 60)

1. It is impossible 4124 get you
2. I want to meet UB46
3. stand that you that I love U.  
I heard

4. Y Y U R  
Y Y U B  
I N O U R  
Y Y 4 M E

## THE PHARMACEUTICAL SOCIETY - Historical Sketch

Prior to 1932, the students of the School of Pharmacy of the A.U.B., being few in number, had no society of their own. Many of them joined the "Medical Society", where they felt the need of having a separate society to devote all its activities for the progress and interests of their future profession: "Pharmacy".

Adib Michel Najjar (Pharmacy II) of Alexandria, Egypt (Ph.C.'34) was the most enthusiastic and interested in this idea. He started discussing with Dr. R.J. Pauly and planning with him for the organization of a pharmaceutical society. Towards the end of November 1932 class representatives were elected, these came together and with the great help of Dr. Pauly laid down the tentative plan and constitution.

On February 1st 1933 a petition, signed by the Faculty Advisor, Dr. Pauly, the 5 class representatives and the 28 other students of the School, was sent, together with the proposed constitution and by-laws, to the Faculty of the American University of Beirut for the approval of the Society. The petition reads "Whereas the amount of material to be covered in the short time allotted for classwork, makes it impossible to bring in outside thought or allow time for individual research, we the Pharmacy Students of the American University of Beirut, feel that a Pharmaceutical Society is desirable in order to increase the knowledge of and interest in our future profession and afford us better fellowship with our classmates and teachers. We have met therefore, in open meeting and have adopted the following Constitution and By-Laws and have elected the following officers, all of which we submit for your approval so that we might function as one of the recognized societies of the campus". The Faculty approved it in June 1933.

On Monday March the 27th. 1933, at 4:00 p.m. all the staff and students of the School of Pharmacy met in the Lecture Room 208 of the Pharmacy Building and laid down the foundation of the "Pharmaceutical Society" and elected the first officers of their Society. \*

An inaugural dancing soiree was held on Saturday March the 24, 1934 at 8:00 p.m. in the Hall of the "Italica Domus", Rue Kantari, Beirut.

Everything in the Society went on smoothly until November 1934, when some misunderstanding had arisen between the student's cabinet and the members. On December 1st, 1934 Dr. George Miller, Dean of the Faculty of Medicine, posted the following notice: "Due to circumstances which have arisen in the affairs of the Pharmaceutical Society..... (it) is hereby suspended from all activities until further notice...." Its suspension lasted 11 months.

On October the 16th, 1935 the Society was reorganized and the activities resumed.

In September 1939 World War II began and on the 29th, President Bayard Dodge notified all societies on the campus that "So that to be sure that no misunderstanding will occur during this war period, the Executive Committee has voted that student societies should discontinue their activities as they did in 1914".

In the fall of 1944 literary and scientific clubs (but not societies) were again allowed in the University. "The class representatives of the School of Pharmacy met on December 14th, 1944.... this constituted body of four voted to organize a Pharmaceutical

Club..... (Which) is to have the same constitution as that of the prewar Pharmaceutical Society with a few proposed amendments".

Early in 1946 societies were reauthorized on the campus and the cabinet of the Pharmaceutical Club voted in its meeting of January 17th, 1946 to reinstate the Society.

The Pharmaceutical Society was reorganized and met officially on the 19th of February 1946.

Fuad Istfan, Faculty Advisor 1947-49.



IF SOME OF OUR COURSES WERE TO ACQUIRE THE TITLES OF BOOKS.....

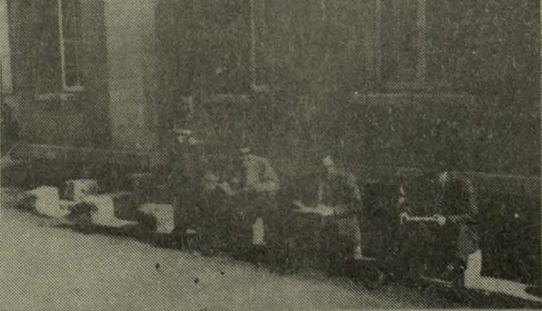
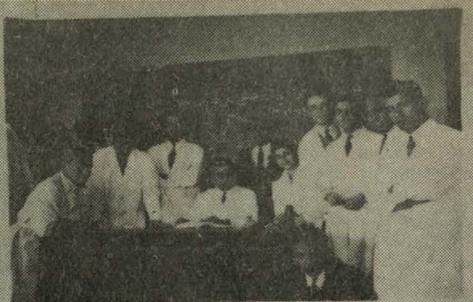
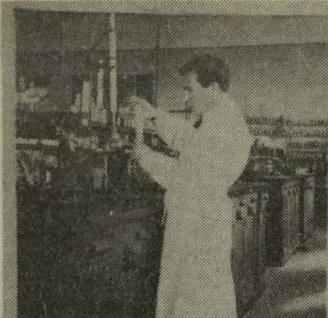
Physics	-	"The Razor's Edge"
Anatomy	-	"The Human Comedy"
Biochemistry	-	"Random Harvest"
Drug Chemistry	-	"Life with Father"
Pharmacognosy	-	"Night and Day"
Pharmaceutical Botany	-	"Green Years"
Commerce	-	"Merchant of Venice"
Jurisprudence	-	"The Man in the Iron Mask"
Quantitative Chemistry	-	"Great Expectations"
Qualitative Chemistry	-	"Color Blindness"
Microbiology	-	"Microbe Hunters"
History of Pharmacy	-	"Book of Verses"
Library Practice	-	"Pickwick Papers"
Toxicology	-	"To be or not to be"
Chemistry	-	"Out of the Test Tube"

by Hamdi Durust, Pharm. II.

RECORDS BROKEN AND  
FACTS OF THE YEAR.....

- Dr. Pauly has finally established office hours after he was disturbed any time, for so many years.
- Prof. Istfan has broken his record of smiling and making jokes since his career of teaching..... it turned out to be 8 jokes per semester !!!
- Mr. Vorperian has also broken his record of popularity in the labs. of the School of Pharmacy --- It is four hours per week since he took to his new lab. in Van Dyck Hall.
- And last, but by no means the least, Mr. Karamanukian has broken the smoking records of the School.. The frequency is too great to be counted.

PICTURES WITHOUT WORDS



## THE STORY OF THE POPPY CAPSULE

It was early dawn in one of the fields of Anatolia, in Asia Minor. The dew drops were hanging on the Poppy Capsules that were scattered all over that plain. It was a very calm dawn; there was no wind. Two hours later the sun was rising and sending its golden beams of light over that plain.

In one corner of the plain a big poppy capsule stood high with the dew tears hanging around it and shining like pearls. A small capsule nearby turned its face towards the mother capsule and addressed her:

"Why are you weeping, Mama?"

"It's time for me to die!" the big capsule sadly replied.

"How? Today is the first of May and we should be happy all together to enjoy this beautiful spring. You shouldn't weep, mother".

"I am weeping because my fate is to be destined this month", was the mother's answer.

"But what is your fate, Mama? Would you like to explain yourself, please?"

Here the hanging dew tears skied over the big capsule and dropped down, as she turned her face to her neighbor, the small capsule, and addressed her:

"Oh daughter, I will tell you my story. Have you seen the farmers that were here yesterday?"

"Yes, but what about them?"

"During this month these cruel people will come in order to slaughter us with their knives. They usually come in the afternoon or in the evening. They make incisions in our abdomen. The milky latex, which is first white, exudes from our abdomen, rapidly coagulates, and turns brown. The incisions are not made deep so as to penetrate to the interior, lest the latex will be mixed up with the seeds and lost. Early on the next morning the partly dried latex is scraped off with a knife or special scraper. The latex which is obtained from us they call Opium".

"But how did they discover this latex and know about it?" was the inquisitive question.

The mother capsule answered: "The first man to write about my juice was Theophrastus in the Third Century B.C. At that time it was called Meconine.

"Dioscorides, 1st Century B. C., was the first man to make a syrup out of my juice. It was called Diacodion. Now the French people are using the same recipe under the name 'Sirop Diacode'. The Arabian physicians introduced this drug into China.

"Paracelsus (1490-1535) called my juice 'The Stone of Immortality'. He dissolved my juice in alcohol and prepared Tincture of Opium; he called this tincture 'Laudanum'.

"In the 18th Century Le Mort, a chemistry professor in Leyden University in Holland, used my juice in anhydro-alcoholic medium in the form of elixir. This was known as Elixir Astmaticum B. P. 1721. Its name was changed to Elixir Paregoricum meaning soothing elixir.

"In 1732 Thomas Dover, An English physician, introduced Dover's Powder. He originally called it Pulvis Diaphoreticus, and it was used as a sweating agent."

Then the daughter capsule curiously asked: "But of what benefit is this Opium to man?"

Her neighbor answered: "Man is making much use of this opium. It is of great importance to him. Man may use my latex as such or

he may isolate the active constituents of it and use each separately for different purposes. He uses opium due to its analgesic and narcotic effects. Opium also acts as antiperistaltic agent by virtue of the fact that it causes spasm of the bowel musculature and prevents propulsive movement. It is used in diarrhoeas. It produces sedation and sleep. It is used also as cough sedative and diaphoretic.

"Man was then able to isolate the different constituents of opium which he called alkaloids. So far 24 alkaloids are known. The most important of these alkaloids are morphine, codeine, and papaverine. Opium contains about 20% total alkaloid one-half of which is morphine, i.e. it contains 10% morphine and 10% all other alkaloids.

"Morphine has been discovered by Frederick William Adam Serturner in 1805. He was an apothecary of Einbeck, Germany. He separated a crystalline substance existing in opium in combination with a special acid, but nothing was published about it. It was not until 1816-1817 that he published the results of further investigation in which he named the basic crystalline substance Morphine, and described it as a 'vegetable alkali'.

"In 1832 Robsquest, a French chemist, isolated Codeine, and he gave it this name which means in Greek, poppy capsule. In 1848 Merck isolated Papaverine. In 1909 Pictet and Gams prepared Papaverine synthetically."

"But how could they pick up all these alkaloids from our latex and separate them?" asked the small capsule.

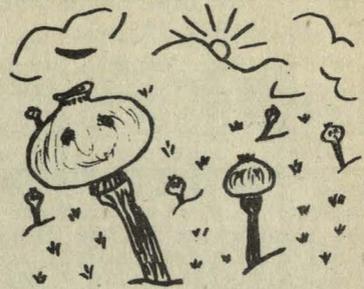
"The isolation of Morphine and most of the other opium alkaloids is done by extraction with water alone or with slightly acidulated water. Opium alkaloids occur chiefly as meconates. For morphine, in one process the opium is macerated with water (neutral or acidulated), and the solution so obtained concentrated, mixed with alcohol, and made strongly alkaline with ammonia. The morphine being but slightly soluble in dilute alcohol, separates out while the greater part of the other alkaloids remain in solution.

"Codeine: Some codeine is obtained from opium directly, but man uses much more codeine than morphine, and so he prepares his codeine by methylating the OH group of morphine. The methylating agent used is trimethyl phenyl ammonium chloride.

"Papaverine, the third important alkaloid of opium, is precipitated by treating opium with sodium acetate. Then it is separated from other alkaloids in alcoholic solution as the acid oxalate, and the base obtained from it is purified by crystallization from alcohol".

Here the small capsule said: "Thank you for all this information. After this knowledge of myself I feel I am great, greater than ever. Why should you be sad, mother? Our latex is one of no value to us. Let us sacrifice ourselves to man. Let us be the candles that burn and melt in order to provide light for him who needs it".

It was already late afternoon when suddenly both capsules looked aside and saw the farmers approaching them with their sharp knives for the operation to be done.



## AN HISTORICAL REVIEW OF VITAMINS

"There are stages in the history of every medical discovery; when it is first announced people say that it is not true. Then a little later when its truth has been born in on them, so that it can no longer be denied, they say that it is not important. After that if its importance becomes sufficiently obvious, they say 'anyhow it is not new' ".

"It has often been observed, by men ill-versed in the history of scientific developments that great new ideas, when developed, might easily have been inferred from others accepted long before."

Diseases that we now know to occur as a result of malnutrition have been recognized for centuries, and have influenced the development of civilization throughout the history of man. Beri-beri has been known in the Orient for more than 3000 years. Scurvy and rickets occurred widely in N.Europe in the Middle Ages. In Scandinavian countries Cod liver oil had long been used in a vague therapeutic manner, and the captains of British vessels learned to carry fresh fruits to keep their crews from dying from scurvy.

Takaki, a well known Japanese physician, proved that beriberi had a dietary origin in 1882. By simply increasing slightly the allowance of vegetables, fish, meat, barley and rice in the diet he was able to reduce the incidence of the disease to almost a vanishing point.

At the end of the 18th century it was clear that the diseases, scurvy and beri-beri, could be cured by suitable additions on a defective diet such as green vegetables or small quantities of fruit juice. The excellence of juice of lemon as a cure for scurvy was remarked on in a work published by John Wooddall in 1639. In 1739 Krawer, an Austrian Army physician, wrote "three to four ounces of orange will cure this dreadful disease without any help".

However, it was not until the 1890's that Eijkman, a Dutch Medical officer working in Java prisons firmly established that beri-beri occurring among prisoners could be cured and prevented by rice polishings to the diet of the prison inmates. Also he could show that the curative principle was present not only in rice bran, but in the aqueous and alcoholic extracts.

It is maintained that it was Grijns who was "the first to set forth clearly what is to be justly called a deficiency disease and to study systematically the properties and distribution of a vitamin. Grijns contributed rather a revolutionary theory that the disease was due to a nutritional deficiency and not to toxicity or infection, thereby laying the foundation for the present conception of vitamins.

But Sherman admits that "the honor (for the discovery of vitamins) is due to Hopkins". While he was studying growth in small animals in England, Hopkins found that diets would not support growth in rats unless supplemented with protein-free milk or alcoholic extract of other natural foods. So in 1906 he was able to write that the real errors in diet were quite obscure. Mc Collum in the same laboratory demonstrated with small laboratory animals the existence of nutritional factors which he named "fat soluble A" and water-soluble B".

Many experiments were made thereafter by many men, but attention was not generally focused on what may be called the vitamin

view of beri-beri until after the more elaborated attempt of isolation by Funk in 1912. He declared the theory that beri-beri, scurvy, pellagra and possibly rickets were caused by the absence from diet of "special substances" which are of the nature of organic bases and called them "vitamines".

Funk went on to develop his theory of deficiency diseases with the existence of the dietary factor specific for the cure of each deficiency disease and to propose the terms "Anti-beri-beri vitamin" and "Anti-scurvy vitamin". By 1920 there had come from many laboratories evidence that the growth promoting factor of Hopkins, the water soluble B of Mc Collum and the Anti-beri-beri vitamin of Funk were one and the same. The terms Vitamin B, Vitamin A, Vitamin C were quickly adopted.

Then the magic properties of the "Vitamin" compelled attention - its potency in almost unbelievable small doses, the minuteness of the amount in our food, and its indispensability. Further interest was stimulated too by the publication, by Funk, of the first review and of the first text book dealing with vitamins.

Equally important was the deduction which Lunin drew from his results. "A natural food such as milk must contain, besides their known principle ingredients, small quantities of other and unknown substance essential to life". Moreover, Socin expressed convincingly his belief in the existence of the unknown which, as his experiments showed him, were present in egg yolk and in milk and which it was "the first task of the future to discover".

Mc Collum observed that upon aeration Cod liver oil lost a part of its nutritional value in supporting growth, but retained its power to cure rickets in small animals. This led to the discovery of a second fat soluble factor, Vitamin D. By 1927 the chemical substance in yeast being activated was identified as ergosterol. Calciferol or Vitamin D<sub>2</sub> was then soon isolated and characterized chemically. In 1936 Brookman was able to isolate from cod liver oil Vitamin D<sub>3</sub> which he proved to be the activated 7 - dehydrocholesterol. During 1930's it was suggested that Vitamin B was not a single substance. Moreover, with wide spread interest Vit. B has been differentiated into 10 separate nutritional entities by 1940.

The identification, characterization and synthesis of the vitamins during the 1930's in an exciting and romantic chapter in the history of biological and organic chemistry: Thiamin was first crystallized in 1927 by Jansen, nine years later was synthesized by Williams. In 1937 Elvehjem isolated from liver fractions nicotinic acid, and within a few months its effectiveness in curing human pellagra was proved. The chemistry of pantothenic acid was worked out by Williams and its identity was recognized by Jukes. Also biotin was isolated from egg yolk in 1939 by Kogel.

Other substances that play essential roles in the complex metabolism of the animal organism, but which the animal is incapable of synthesizing, will undoubtedly be added to the list of known vitamins. Definite evidence of the existence of additional factors in the B group of vitamins has recently been presented, although they have not as yet been characterized.

Refs. - Harris, L. "The Vitamins".  
Remington's Practice of Pharmacy.

## Questions and Answers

The test listed below will give you an idea as to how well you are keeping up with this important group of drugs.

1. Announcement of the discovery of Penicillin was made by Alexander Fleming, London, in the year: a. 1910, b. 1921, c. 1929, d. 1934, e. 1942.
2. The number of antibiotic compounds that have been isolated is approximately: a. 10, b. 30, c. 50, d. 80.
3. Streptomycin is the best treatment known for: a. typhoid fever, b. streptococci infections, c. tularemia, d. bacterial endocarditis.
4. Experimental results with tuberculosis indicate that streptomycin: a. gives reasonable assurance of satisfactory effects against most forms of the disease, b. exerts a limited suppressive effect, especially on some of the unusual types of pulmonary and extra-pulmonary tuberculosis, c. has virtually no therapeutic effect.
5. Antibiotic substances are primarily: a. bacteriostatic, b. bacteriocidal.
6. Penicillin sodium will retain its potency, if properly cared for, approximately: a. three months, b. six months, c. 12 months, d. 24 months.
7. Dr. Selman A. Waksman and associates of Rutgers University are credited with the discovery of: a. gramicidin S., b. clavacin, c. helvolic acid, d. aspergillin.
8. Experimental results indicate that streptomycin is: a. effective, b. ineffective, against syphilis.
9. Credit for the discovery of gramicidin S. goes to scientists from: a. England, b. the United States, c. Russia.
10. Streptomycin is: a. soluble, b. insoluble, in ether and chloroform.
11. The usual storage temperature for serums and vaccines is: a. 2 to 8° C., b. 15 to 20° C.
12. Antigens produce: a. active immunity, b. passive immunity.
13. Vaccines are prepared from: a. bacteria only, b. viruses only, c. bacteria or viruses.
14. The animals used in the production of smallpox vaccine are: a. calves, b. horses, c. sheep.
15. The method of administering diphtheria toxoid is: a. intravenous, b. intramuscular, c. subcutaneous.
16. A toxin excreted by an organism during its active life into the surrounding medium is called: a. endotoxin, b. exotoxin, c. endotoxoid.
17. The disease which contributes to the most deaths among children is: a. whooping cough, b. diphtheria, c. measles, d. poliomyelitis, e. scarlet fever.
18. Vaccine once weakened or destroyed cannot be restored by subsequent refrigeration: a. true, b. false.
19. Tetanus is an infection caused by organisms classed as: a. coccus, b. bacillus, c. virus.
20. When a person who has not been previously immunized by tetanus toxoid is injured in such a way as to involve the risk of tetanus infection, he should receive: a. tetanus antitoxin, b. tetanus toxoid.

Here are the correct answers:

1 - c, 2 - c, 3 - c, 4 - b, 5 - a  
6 - c, 7 - b, 8 - b, 9 - c, 10 - b  
11 - a, 12 - a, 13 - c, 14 - a, 15 - c  
16 - b, 17 - a, 18 - a, 19 - b, 20 - a

## ONCE MORE, THE PROBLEM OF STANDARD

Medicine and Pharmacy (do I need to say) are closely related professions, have the same historical origin, and consequently must keep to the same scientific standards --- decline of one is not a gain for the other, it is a loss.

Reviewing the existing syllabus of our curriculum, like many others, I am inclined to point out the following weak points that need strengthening --

a) The year of practice has been, and still is the cornerstone of our profession, yet so few take it as seriously as they should! I am however extremely pleased that Prof. Haddad is working out a new scheme, which undoubtedly gives tremendous hope.

b) First year students always have a physical incompatibility with the essential General Physics course. Since it is a problem of every entering class without exception, something must be done.

c) Botany courses of IIInd year are not pharmaceutical in character - they are efforts to introduce tremendous terminology into the minds of the specializing student. A totally different, and more illustrative way of administering must be worked out.

d) The essential Microbiology of IIIrd year is only a surface view course, and Physiology and Hygiene are handled as "boy scout" courses. Plans to have them with the corresponding preclinical medical courses must be among the immediate steps to be taken.

e) IVth year courses in History of Pharmacy and Commerce are of infinitely diluted pharmaceutical value. These, with the library practice, can be informalized, without giving academic credit or made among a list of electives for the advanced student.

f) Also, addition of courses in Parasitology, more analytical work, and advanced Organic and Inorganic Chemistry courses as related to pharmacy. IIInd year students have great difficulty in digesting the semester course of Organic. It must be raised to a year course in preparation for the future studies in advanced pharmaceutical chemistry courses of IIIrd and IVth years. Indeed many will appreciate to take courses with preclinical medics in Bacteriology, Parasitology, etc. (I am glad to note that a step has been taken towards this goal in combining the IVth Year Biochemistry with the 1st year Medical course. Few complain, and the educational as well as psychological effects are tremendous). This good knowledge and moral building scheme can easily be applicable to other courses also. At least, starting this June we shall have Ph.C. graduates who will say "After all, we are not so inferior to others as we thought". The same applies to the 1st year medics of 1949 who won't believe pharmacists to be any different from them, except individuals specializing on some other branch of the same main line.

Not all criticism and suggestions are for the curricula; another point, equally important, is the absence of any kind of internal resistance among fellow students. "Well, I guess a "C" is sufficient", thinks the average student. Why C, why not A? Isn't Pharmacy your chosen profession? Why shouldn't you attain the highest in your future time "hobby" ?

I conclude by calling the attention of fellow students to their duty of more needed determination in their chosen profession, and kindly invite our Faculty to consider our most essential problem earnestly, modify the statu quo, and think about its immediate applications. The past "Golden Age of Pharmacy" can never be restored by reading it in books; we must get to work -- NOW !

## BRITAIN'S NEW HEALTH PLAN

Looking at postwar Britain one is fascinated by the speed at which British life is running towards socialism. Slowly and step by step Britain's labour government has saturated its ideas of social welfare into the minds of its people in a palatable modern way. One of the latest of those trends is Aneurin Bevan's (Britain's Health Minister) new social security plan.

On first looking at the plan one is liable to give many a false judgment. Further study would reveal its hidden benefits both to the practitioner and the public.

Britain's new social security plan requires every one to pay for health insurance, but nobody, doctor or patient, has to sign for the health service. They make a weekly payment (deducted from their salary) which covers all social security including unemployment, insurance, old-age pensions, funeral benefits, etc. For employed men over 18, the weekly contribution is 4s. 11d. (LL. 2.16) for women over 18 3s. 10d. (LL. 1.70). Any Briton who wants free medical care for his money, simply goes to a doctor of his own choosing. The applicant is put on the doctor's permanent list of patients. Thereafter the doctor is obliged by law to treat him for any length of time and free of charge. If the treatment requires medicine or any other medical appliance, the doctor writes a chit for anything from Aspirin to Penicillin, or from spectacles to trusses. The druggist hands over the medicine and passes on the chit over to the government which pays him.

If in the doctor's opinion the patient requires the attention of a specialist, he will present him with a list of specialists from which to choose one. If necessary the doctor also arranges for hospitalization.

To operate this plan, the government has appointed 138 executive councils each composed of 25 volunteer members. The executive council's job is to review the doctor's list of patients, they have to rearrange the patients if a doctor gets too heavily loaded. They can keep a doctor from moving away from an "under-doctored" area, or prevent any other doctor from entering into the security plan in an over-doctored" area.

Although 86% of the doctors have joined the plan the others are expected to join because they cannot earn enough money under their private practices. The doctors get 17s. (LL. 7.50) a year for each patient on their list, regardless of whether they call on him every day in the year or not at all. A doctor can have a maximum of 4,000 patients on his list, which would give him a gross amount of LL. 29,920.

In a few regions, there are more doctors than necessary. The result is that doctor's income there is low. Though the government could raise their fees, but it refuses to do so in these cases because it wants them to move to "under-doctored" areas.

The pharmacist shares a great deal in the plan. Though he is not paid by the government like the doctor, but is strictly supervised, and the prices are under close control.

As I have said, in most regions the doctor has much work to do, and thus has no time to write full recipes; an increasing demand for proprietary preparations arises, allowing competition between pharmacist and druggist. The real benefit of the plan can-

not be judged now until a lapse of a reasonable period when almost all difficulties have been known and properly dealt with.

This plan is what one might call an attempt to reach the best ideal. Would such a plan work in a country like Lebanon? At first it looks as though it might be an easy thing to do; but when one gets to work he is confronted with many difficulties which have their roots in our social system, its education, economy, the political set-up, etc. It would seem, off-hand, that our country would have to go through a very long period of self-discipline before anything like it could ever be made to work.

This is Britain's new social security plan. The state comes to the undernourished men and women, provides them and their children with orange juice, Cod liver oil, milk, and sends the doctor in the midst of the night when they are sick, for an unnoticed amount of money. These people won't listen to any man who tells them that the welfare state is a bad thing. They will look at their healthy children and will call that man a liar.

(Bevan plan facts taken from "Time") Elie Nuwayser, Phar. I



#### Collected Contributions

- I. "Your cough sounds much better this morning", said the doctor in a complimentary tone.  
"Why shouldn't it?" rasped the disgusted patient, "I have been practising all night".
- ooo-----
- II. "Something troubling you, Doctor?" asked the medico's next door neighbor, a dentist. "You look as if you were between the devil and the deep blue sea".  
"That is the situation exactly", replied the doctor, "and I can see no way out of my difficulties".  
"Is it that charming patient?" asked the dentist, who knew that the doctor had fallen head over heels in love with a young widow. "Yes", the doctor answered. "Well why d'nt you marry and settle down?" asked the dentist.  
"I can't afford to" replied the doctor, "she is the only patient who has ever paid her bills".
- ooo-----
- III. Farid "You see that old boy over there? he thinks in terms of millions"  
Fahd "He doesn't look like a financier"  
Farid "He isn't. He's a bacteriologist".
- ooo-----
- IV. Doctor "Good morning, Mrs. Smith. Did you take your husband's temperature as I told you?"  
Mrs. Smith "Yes, Doctor, I borrowed a barometer and placed it on his chest, it said 'very dry', so I bought him a pint of beer and he's gone back to work".

N. Khalluf, Phar. III

PRESERVATION OF DRUGS

He that preserves his drugs as he should, preserves his reputation, his trade, and is assured of ultimate success.

To the pharmacist who has no time to look for the directions for storage in his Pharmacopoeia, to that pharmacist who is out of date with the new literature on pharmacy, and to our fellow student who might forget, or become that pharmacist, we present this checklist for their guidance. We would also like to thank Prof. Maddad for his suggestions and help.

The following are the requirements of the U.S.P.XIII, N.F.VIII, and the B.P. '48 for the:

PRESERVATION OF DRUGS BY STORAGE UNDER SUITABLE CONDITIONS

There are three principal methods of storage:- storage in tightly closed containers, storage in light-resistant containers, and storage in a cool place. For some substances two or even all three methods must be used. To indicate this, the following abbreviations are appended to the names of the substances listed.

- TC - Tightly closed containers must be used
- CC - Closed containers, which are well closed
- HC - Hermetically sealed containers
- GsB - Glass stoppered bottles must be used
- PL - Protect from Light
- T() - Temperature at which to be stored, i.e. (2-15°C.), etc.
  - T-20 means a temperature not exceeding 20°C.
  - T-30 " " " " " 30°C.
  - T-49 avoid excess heat " " " 49°C.
- FB - Completely filled bottles

Acetarsol	CC	Barbiturates (Sod.)	TC
Acids, Inorganic	TC, GsB	Belladonna	TC, PL
Acetylsalicylic	TC	Benzocaine	CC, PL
Ascorbic	TC, PL	Benzyl Benzoate	TC, T-49
Citric	TC	Betanaphthol	CC, PL
Hydriodic	TC, T-30	Bismuth Salts	CC, PL
Lactic	TC	Butacaine Sulfate	TC, PL
Mandelic	CC, PL	Caffeine Hydrous	TC
Oleic	CC	Calciferol Solns.	TC, FB
Picric	CC, T-49	Calcium Chloride	TC
Tannic	TC, PL	Gluconate	TC
Trichloroacetic	TC	Hydroxide	TC
Alcohol, dehydrated	TC	" Soln.	TC, FB
Benzyl	TC	Lactate	TC
Amethocaine HCl	CC, PL	Camphor	TC, T-30
Aminophylline	TC	Carbon Tetrachlor.	TC, PL
Amidopyrine	CC, PL	Chiniofon	TC
Ammonia Solns.	TC, T-30	Chloral Hydrate	TC
Ammonium Carb.	TC, T-30	Chloramine	TC, PL, T-30
Chlor.	TC	Chlorbutol	TC
Amylene Hydrate	TC	Chlorinated Lime	TC
Amyl Nitrite	TC, PL, T-30	Chloroform	TC, PL, GsB
Aneurine HCl	(cf. notes)	Chromium Trioxide	TC
Antitoxins	HC, T(2-15)	Cincophen	TC, PL
Apomorphine HCl	TC, PL	Cocaine and Salts	CC, PL
Atropine Sulfate	TC, PL	Codeine Salts	TC, PL
Balsam Peru	TC, T-49	Cod Liver Oil	TC, PL, FB
Tolu	TC, T-49	Colchicine	TC, PL

Collodions	TC, T-49	Neostigmine Salts	TC, PL
Creosote	TC, PL	Oils, Fixed	TC, PL, T-30
Creosol	TC, PL	Opium, Powdered	TC
Dimorphine HCl	CC, PL	Ouabain	TC
Digitalis (notes)*	TC, PL	Pancreatin	TC, T-30
Digoxin	TC, PL	Papaverine HCl	TC, PL
Easton's Syrup	TC, PL, FB	Paraldehyde	TC, PL, FB
Emetine HCl	TC, PL	Penicillin	(cf. notes)
Ephedrine & Salts	CC, PL	Pepsin	TC, T-30
Epinephrine "	TC, PL	Phenol	TC, T-30
Epinephrine Solns.	TC, PL, FB	Physostigmine Salts	TC, PL
Ergometrine Mal.	TC, PL	Potassium Acetate	TC, GsB
Ergot	TC, PL, T-30	Carbonate	TC
Ergotamine Tart.	TC, PL	Citrate	TC
Ether (notes)*	TC, PL	Hydroxide	TC
Ethylchloride	TC, PL, T-30	Proflavine	TC, PL
Extracts, Liq.	TC, PL, T-30	Quinidine Sulfate	TC, PL
Extracts, Dry	TC, T-30	Quinine Salts	TC, PL
Ferr. Ammon. Citr.	TC, PL	Reduced Iron	TC
Ferrous Sulfate	TC	Resorcinol	TC, PL
Formaldehyde Soln.	TC	Riboflavine	TC, PL
Glucose, Liquid	TC	Santonine	PL
Glycerin & -ites	TC	Squill	TC
Gonadotropin C.	HC, (2-15)	Sodium Carbonate	TC
Hexobarbitone Sodium	TC	Citrate	TC
Histamine Phosphate	TC, PL	Hydroxide	TC
Homatropine HBr	TC, PL	Hypochlorite*	TC, PL
Hydrogen Perox.	GsB, PL, T-30	Metabisulfite	TC
Hyoscine HBr	TC, PL, T-30	Nitrate	TC
Hyoscyamus	TC	Nitrite	TC
Insulin (cf. special notes)		Perborate	TC, T-30
Iodine	GsB	Sulfate	TC
Iodoform	TC, PL	Thiosulfate	TC, PL
Kaolin Cataplasm	TC	Spirit Nitr. Ether	TC, PL, FB
Lead Subacetate Sol.	TC, FB	Stramonium Leaf	TC
Magnesium Oxide	TC	Sulfonamides	TC, PL
Sulfate, dry	TC	Sulfarsphenamine (cf. notes)*	
Menaphthone	TC, PL	Sulfurated Potash	TC
Menthol	TC, T-30	Syr. Ferrous Iodide (notes)*	
Mepacrine HCl	TC, PL	Theobrom. Sod. Salicyl	TC, PL
Mersalyl	TC, PL	Toxid, Staphilococc.	HC, T-20
Methyl Salicylate	TC	Toxid, Tetanus	HC, T-20
Morphine & Salts	TC, PL	Tribromethanol	TC, PL
Mercuric Oxide	PL	Trichlorethylene	TC, PL, T-30
Oxycyanide	PL	Tryparsamide	TC, PL, T-20
Mercurous Chloride	PL	Vaccines (cf. special notes)*	
Mercury, Ammoniated	PL	Vitamins A & D	FB, TC, PL, T-20
Oleate	PL	Zinc Chloride	TC
Necarsphenamine (cf. notes)			

#### SPECIAL CONDITIONS OF STORAGE

Strong Solution of Ammonium Acetate and Solution of Potassium Hydroxide should be stored in lead-free containers.

Ether for Anesthesia must be preserved in tight small containers (USP requires not more than 3 Kg. capacity) and is not to be used for anesthesia if it has been removed from the original container longer than 24 hours. If the container is closed by a cork this should be protected with metal foil.

Formaldehyde Solution should be kept in closed containers at a temperature not below 25°C. to prevent polymerization. Variable amts. of methanol are also added to prevent polymerization.

Syrup of Ferrous Iodide is stored in bottles of clear white glass. Surgical solution of Sodium Hypochlorite (Dakin's Solution) must be standardized before dispensing and must not be used if more than five days old.

Hydrogen Peroxide Solution should be made slightly acidic and some suitable preservative added such as Acetanilid, Methylparaben, etc.

Bottles should be closed with a glass stopper or paraffined cork. Aneurine (Thiamine) Hydrochloride crystals are stable when kept in glass containers protected from light. Solutions are stable if acid (pH less than 5). Neutral and alkaline solutions deteriorate rapidly especially in contact with air.

Neocarsphenamine, Sulfarsphenamine, Oxophenarsine HCl (Mapharsen), & Dichlorophenarsine HCl, according to USP requirements should be preserved at a temperature preferably not above 25°C. in hermetic containers of colorless glass, from which the air has been excluded either by production of a vacuum or by displacement with a non-oxidising gas. The B.P. requires storage of the first two items at a temperature below 15°C. If the product has become darker in color it should not be used. Solutions for injection should be freshly prepared and used within 5 minutes of its preparation, as the solution rapidly decomposes, with increase of toxicity.

Digitalis Powder (only the standardized powder must be used) should be stored in a dry atmosphere as will maintain not more than the specified moisture content (6%). A suitable cartridge or device containing a non-liquefying, inert, dehydrating substance may be used in the container to maintain low humidity.

Liquid Extract of Ergot loses activity on keeping. The rate of decomposition is rapid at ordinary temperatures but slow at 0°C. Keep in completely filled containers and store in as cool a place as possible. Ergonovine (Ergometrine) Maleate Injection if stored at a temperature between 0-12°C. will retain its activity for two years after the date of manufacture.

Penicillin: Non-crystalline penicillin salts require refrigeration in the dry state and in solution. Crystalline penicillin is stable up to 3 years in dry form without refrigeration, but in solution below pH 6 it is stable for only 3 days at a temperature of 8 to 14°C. Refrigerated solutions buffered to a pH of 6 or above retain their potency for a minimum of seven days. Tablets, Lozenges, ophthalmic ointment, and anhydrous ointment of penicillin should be protected against moisture and should be stored at a temperature not above 15°C. Penicillin creams and hydrous ointments lose potency on storage and should be freshly prepared. Procaine Penicillin G in oil does not require refrigeration.

Streptomycin in dry form may be stored at room temperature, not exceeding 30°C. for periods up to one year. Solutions of streptomycin may be stored at room temperature for one week without significant loss of potency.

Biological Products: Liquid Antitoxins (B.P.) should be kept at as low a temperature as possible above 0°C. At room temperatures they may lose half their activity in one year. Antibacterial sera vaccines and Toxoids are kept between 2-10°C. Small Pox Vaccine should be kept at temperatures below 0°C. At temperatures of 10°C it may only be expected to retain its potency for 14 days.

Insulin Injection (pH 3 to 4) and Protamin Zinc Insulin (pH 7-7.5) kept between 0-10°C. but avoiding freezing, are expected to retain their potency for at least 18 mos. after the date of manufacture. The same expectancy applies to Pituitary Injection.

Ointments for the Eye (B. P.) are not stable and should be used within a short period after their preparation. They should be stored at as low a temperature as possible not exceeding 15°C.



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TRIP TO BAALBEK



# Progress in the ANTIBIOTIC substances,

## BACITRACIN

In 1945 Johnson, Anker and Meleney, discovered and isolated, in badly contaminated accidental wounds, an aerobic gram-spore forming bacillus which belongs to Group A of *B. subtilis* and which produced in ordinary culture media a powerful antibiotic agent of a very wide antibacterial activity. They named the antibiotic Bacitracin. It was found in the cell-free filtrate following the culturing of the organism and subsequent filtration of the culture.

**Isolation:** The antibiotic is formed when the organism is grown in shallow layers of peptone broth, beef infusion broth, Savita or Amigen broth or in a synthetic medium. The optimum time for harvesting is after 72 hrs of culturing at 37°C. After decanting the liquid from the heavy surface pellicle the antibiotic is extracted from the former with n-butanol and concentrated by steam distillation in vacuo. The pigmented impurities are removed with magnesium oxide and the active principle is precipitated with salicylic acid.

**Characters:** Bacitracin is an amorphous grayish - white neutral powder, insoluble in ether, chloroform, acetone and ethyl acetate. It is very soluble in water and in normal saline solution. Solutions are stable at 0-5°C. for 8-12 months.

Rapid inactivation occurs in alkaline medium above pH 9.

It is stable to normal hydrochloric acid solution at 5° Centigrade; but not at 37° C.

Lyophilization and storage in vacuum vials provide indefinite stability at room temperature.

**The Bacitracin Unit:** A tentative unit has been defined as follows: One unit of Bacitracin is the amount which, when diluted 1 in 1024, completely inhibits the growth of 0.1 cc of a 1 to 100 dilution of an 18-hr culture of a stock (Chanin) of Group A hemolytic streptococcus, (representing about 1 million organisms) when planted in 2 cc of culture medium.

**Actions:** Bacitracin is similar in action to penicillin but it has a much wider effect. It is destructive to staphylococci and *Streptococcus viridens* and to many strains of pathogens, which are resistant to penicillin. It also kills amoebae.

It has an exceedingly potent action against hemolytic streptococci even when injected far from the site of infection.

Bacitracin has been found to have a definite treponemical action in vitro and in vivo against *Treponema pallidum*.

It is not active against gram-negative organisms.

It is not locally toxic or irritating and is not inhibited by plasma, blood, pus, broken tissues or by the organisms which produce penicillinase.

When injected the maximum blood level is reached in one hour, it is excreted rather rapidly in the urine and feces; but more slowly than penicillin. The dosage being 20,000-30,000 units every six hours.

Given orally it is not absorbed and it may cause nausea or other related symptoms.

All patients will show an albuminuria, which disappears on continued treatment.

Uses: Bacitracin is administered topically only. It is indicated in the treatment of many deep pyogenic lesions of the skin, superficial cutaneous pyogenic lesions, many external ocular infections, in multiple furuncles, deep abscess, infected sebaceous cyst, infected operative wounds and carbuncles.

Some value has been shown by combining Bacitracin with Streptomycin and parachlorphenol.

Bacitracin has not been successful in gas gangrene.

Administration: Bacitracin solutions, for topical use, must be prepared by adding sterile saline solution to sterile Bacitracin powder in amount sufficient to provide 100, 500 or 1000 units per 1 cc for wet dressings, irrigations and local injections.

The solution is injected into the base or into the center of pyogenic lesions. In abscesses incision is no longer necessary, it is aspirated and the drug instilled.

Ophthalmic ointments and water soluble ointments (prepared with a mixture of 45 parts of Carbowax 4000 and 55 parts of propylene glycol) containing 500 units per Gm are much used.

Meleney recommended a starting dose of 100 units per 1 cc. or per 1 Gm.

Form Supplied:

1) Bacitracin (C.S.C. Pharmaceuticals) and Bacitracin Topical (Upjohn): In dry sterile forms for making solutions are available in 20 and in 50 cc serum-type vials containing each 2000, 10,000 or 50,000 units.

2) Bacitracin Ophthalmic Ointment (C.S.C.) or Baciguent, Ophthalmic Ointment (Upjohn) containing 500 units per 1 Gm.

3) Bacitracin Ointment (C.S.C.) or Baciguent Ointment (Upjohn) containing 500 units per 1 Gm.

## CHLOROMYCETIN

From a soil sample collected in a mulched field in Caracas (Venezuela) a *Streptomyces* sp. (a soil Actinomycete) was isolated.

When the organism was grown in liquid media in shaken flasks, filtrates of these cultures possessed strong antibacterial and antirickettsial activity against gram-negative bacteria, notably *S. paratyphosa*. The antibiotic was named Chloromycetin.

Isolation: The organism produces Chloromycetin in aerated submerged cultures in various media. It could be concentrated and purified by extracting the culture filtrates ethyl acetate, distilling off the solvent in vacuo, extracting the antibiotic with diethyl ether, taking the residue in water and concentrating.

Characters: Chloromycetin occurs as colorless needles or elongated plates, m. p. 149.7 - 150.7° C. It is very soluble in methanol, ethanol, butanol and acetone. It is soluble in water to the extent of 0.025 Gm in 100 cc at 25° C.

It is neutral and it contains both nitrogen and nonionic chlorine. It is stable at room temp. and its solutions resist boiling for 5 hours.

Actions: Chloromycetin has remarkable chemotherapeutic effects on a number of rickettsial agents and on one of the viruses. It has been found to be effective against an impressive range of gram-negative organisms: Brucella, E.coli, Shigella and St. aureus. Its toxicity is low, it is rapidly absorbed from the alimentary tract and it has a beneficial effect even when given late in disease.

Dosage and Administration: It is effective when given parentally or orally. For clinical purposes it is administered orally.

Present dosage regimens are based on clinical experience gained thus far and may be modified in the light of future experience. The use of smaller doses increases the possibility of relapse. Optimal dosage given at intervals around-the-clock is necessary to assure maximum effectiveness.

In all cases an initial dose of 40 to 60 mg. per Kg. of body weight (2.4 to 4. Gm.) is required. Then 0.25 Gm is given every 3 to 4 hours until temperature returns to normal and the same dose continued during the following 4 to 8 days.

It was found to be very effective in Typhus fever, in Rocky Mountain Spotted Fever, and in Scrub Typhus.

The effect of Chloromycetin on the following infections has been studied to a limited extent; it may be effective in cases of: Undulant fever, Bacillary urinary infections, Typhoid fevers, and Primary atypical pneumonia.

Form Supplied: Chloromycetin or Chloramphenicol. (P.D.Co.) Kapseals of 0.25 Gm.

## DUOMYCIN HYDROCHLORIDE

### AUREOMYCIN

One of the newest antibiotics obtained from soil organisms, reported to have the widest range of activity of any known antibacterial substance. It was discovered by B.M.Duggar (U.S.'48) and named Aureomycin for its golden color.

Description: A golden yellow soluble antibiotic.

Actions: It is highly effective against Undulant fever or acute Brucellosis, Typhus fever, Whooping cough and many resistant Staphylococcus infections. It is also used in lymphogranuloma venereum (a venereal disease), Scarlet fever and Tularemia.

Administration:

- 1) Orally up to 1 Gm. four times daily.
- 2) Locally to the eye in concentrations of 25 mg. per 5 cc. of distilled water.

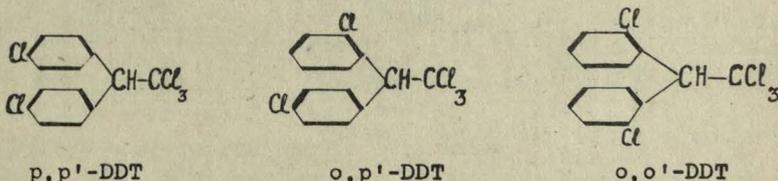
Source: Duomycin Hydrochloride (Lederle). Aureomycin.

Fuad H. Istfan

Before leading the reader directly into the analytical aspects of DDT, I wish to digress for a while to refresh his memory, concerning certain facts, the better to keep his interest in the discussions which may follow.

Probably piles of literature and publicity have been accorded to this newer synthetic insecticide commonly known as DDT. This designation is derived from the generic name Dichlorodiphenyltrichloroethane, which is obtained by the condensation of chloral with monochlorobenzene in the presence of sulfuric acid. Its miraculous performance in controlling such disease-carrying insects as body lice, mosquitoes, flies and a wide variety of agricultural pests, has attracted a world-wide attention and excited the imagination of the organic chemist and layman alike.

Theoretically, there are 45 possible Dichloro-diphenyl-trichloroethanes, excluding the stereoisomeric forms. However, the major constituents in any technical grade obtained are two, namely 1-trichloro-2,2-bis(Chlorophenyl)ethane, hereafter denoted as p,p'-DDT and 1-trichloro-2-o-chlorophenyl-2-p-chlorophenylethane, hereafter designated as o,p'-DDT. The relative abundance in almost all commercial grades vary 70-80% of p,p'-DDT and 15-25% of o,p'-DDT, as well as some 12 minor intermediates ranging up to 3% with additional impurities which are invariably introduced by the original starting materials. Some authorities claim a range of 2-5% of 1-trichloro-2,2-bis(o-chlorophenyl)ethane symbolized as o,o'-DDT. The representation of the structural formulae of the respective isomers considered are the following:



Of all the isomers tested for their insecticidal efficiency, the p,p'-DDT was accredited with possessing the highest toxicity towards a wider range of experimental insects. The o,p'-DDT, proved to be barely toxic when compared under identical conditions: e.g. 1% solution of p,p'-DDT killed 70% of houseflies, while a 5% solution of o,p'-DDT killed only 1%. Or, 0.05% of p,p'-DDT, solution killed 100% of body lice, while a 1% o,p'-DDT solution killed 0%. These results picture rather clearly the relative insecticidal powers of p,p'-DDT and o,p'-DDT. The o,o'-DDT as well as all the other isomers and intermediates which may occur in technical DDT, are still less toxic compared with o,p'-DDT.

Although the pure p,p'-DDT and o,p'-DDT possess reasonable stability towards heat, many technical samples proved to decompose rapidly at temperatures around 100°C. It is reasonable to assume that this decomposition is mainly due to impurities found in technical grades. According to Fleck and Haller, Aluminium, Chromium and ferric chlorides or oxides, as well as organic iron compounds, are mainly responsible for such decomposition. Later, it was proved that besides the above mentioned impurities certain complimentary solvents containing nitro and chloro groups, initiated or increased this type of catalytic decomposition. At this point we shouldn't underestimate the quick deteriorating effects, even at low temps. of free alkali hydroxides or of salts producing such products upon hydrolysis.

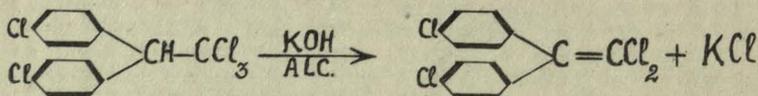
There have been much suspicion and scepticism towards the efficacy of DDT solutions prepared locally for public consumption. But all that we could gather from private consultations and talks with contractors, none of the above mentioned points were taken into consideration. The common faults that could be traced were either

due to the improper choice of solvents, or using rusty iron barrels for storage and applying rather high temperatures in making stock solutions for further dilution. For the convenience of the dealers as well as for the protection of the public who wish to cooperate for the uplift of the sanitary conditions, we reproduce the five important maxims set by the U.S. Army for the preparation of any DDT product.

1. DDT must not be mixed with any alkaline diluents nor salts of the type represented by ferric, aluminium or chromium.
2. Contamination with iron, steel or rust should be avoided.
3. Solvents containing any sort of chloro or nitro groups should be avoided.
4. Compatibilities with diluents, or with other insecticides, fungicides and fertilizers must be thoroughly studied.
5. High temperature and sunlight must be avoided.

Whenever a new material is produced for large scale use, it becomes necessary to develop analytical methods for the control of its uniformity. The problem of the analysis of DDT is rather complicated by several factors discussed below. The choice of the method must be dictated by the problem at hand. There are methods described for determining DDT in spray residues down to 10 micrograms by sensitive colorimetric tests, as well as semi-micro volumetric procedures for the determination of total and hydrolyzable chlorine contents of DDT. Yet these methods are not suitable for the evaluation of p,p'-DDT content, since all the isomeric forms as well as most of the intermediate by-products behave nearly identical towards the tests. Somewhat satisfactory methods have been devised, but we won't be far from the truth, if we assume that many of the leading chemists work hard at present to introduce a better and a perfected procedure for the estimation of the p,p'-DDT content. The latest literature on the subject hinted the use of chromatography and spectrophotometry.

One of the most useful methods for the determ. of DDT content in any type of product, makes use of the fact that DDT in any isomeric form loses one molecule of Hydrogen Chloride to ethanolic alkali. In this procedure the sample to be analyzed, after extraction or removal of solvent, is treated with excess of alcoholic Potassium Hydroxide in reflux, and the resulting chloride ion is titrated by the customary Volhard procedure. The chemical interpretation of the reaction involved being:



This procedure gives a rapid and rather simple method for the determination of DDT. It has the privilege over the other methods because most of chlorine containing compound occurring in DDT are not hydrolyzed by alcoholic alkali.

Two methods have been used for the estimation of DDT which involve the determination of the total chlorine content. These have the disadvantage that any organic chlorine-containing material will interfere. Yet they have the advantage over the above method by the fact that 5 atoms of chlorine are removed rather than one. The method may therefore be presumed to give five times the sensitivity. In one method the sample to be analysed is volatilized and burned in a flame of chlorine-free illuminating gas. The chlorine containing combustion product is absorbed in an alkaline solution of Sodium Arsenite, and this solution is titrated for chlorine ion by the usual Volhard method.

A simpler and rather more accurate method for total chlorine content in DDT, was introduced by R.R. Umhoefer, who used Sodium

and isopropyl alcohol or sec-butyl alcohol. In the previous combustion method uncertainties arise specially in dealing with aromatic compounds in which the halogen, being firmly bound, may volatilize without suffering complete decomposition, thus introducing serious errors. The iso-propyl and sec-butyl alcohols being excellent solvents for DDT, and besides being soluble with water, render their use ideal for all the subsequent argentimetric titrations. The procedure is rather simple:- a weighed sample is placed in a 200 c.c. Erlenmeyer flask provided with a ground joint and 25 cc of iso-propyl alcohol and 2 Gm. of Sodium cut into pieces are added. The alcohol is then refluxed for two hours. The excess of the Sodium is decomposed by cautious addition of water. Finally 60-80 cc of water is added and neutralized to Phth. by 6N HNO<sub>3</sub>, and titrated with N/10 AgNO<sub>3</sub> using dichlorofluorescein as an adsorption indicator.

In the evaluation and rating of the technical DDT samples, it is always necessary to determine the p,p'-DDT content, the most valued insecticidal component. Fleck and Preston have described a setting-point composition diagram for a system of o,p'- and p,p'-DDT and this method with slight modifications can be used in rough estimations of p,p'-DDT content in DDT samples.

Cristol, Hayes and Haller have devised a method which involves the crystallization of p,p'-DDT from a saturated solution of 75% of ethyl alcohol. The procedure is well adopted for products containing at least 40% of p,p'-DDT. However, by introducing slight modification the method may serve for preparations containing less than 40% p,p'-DDT. For this method you need 1st a saturated stock solution of p,p'-DDT in 75% by volume aqueous ethanol at a convenient temperature (usually 25°C ± 0.5°C). An accurately weighed sample around 2 Gm. is dissolved by reflux in 150 cc of the saturated ethanolic solution. After the sample is completely dissolved, the flask is stopped and allowed to cool in the air to about 27°C. Crystals of p,p'-DDT deposit during this cooling process. The flask and contents are then placed in a thermostatically controlled bath at 25°C, for four hours. The crystals thus obtained are filtered in a previously prepared Gooch crucible, washed with 20cc of satd. ethanolic solution, and dried to constant weight at 78-80°C. The percentage of p,p'-DDT calculated. The melting point of the crystals thus obtained should not be less than 106°C. An empirical correction of 1.4% is added to the percentage found. This method is very reliable and the error does not exceed more than 1%.

Schechter and Haller, suggested that the nitration products of the two components when treated with sodium methoxide, p,p'-DDT develops an intense blue color whereas o,p'-DDT produces a violet-red color. The absorption spectra has a maximum at 600mμ for p,p'-DDT and at 511mμ for o,p'-DDT, both of which are determined photometrically. The gap between the two spectral readings being sufficiently different, it is feasible to obtain both the total and relative amounts of o,p'-DDT and p,p'-DDT in a mixture of the two.

Soloway, Schechter and Jones have suggested that a differential method may be worked out using the fact that the various constituents in technical DDT lose Hydrogen Chloride to ethanolic alkali at different rates. The authors had proposed vaguely that if the reaction is carried out at 20°-30°C only p,p'-DDT reacts completely, whereas o,p'-DDT and many of the impurities react only slightly. No printed literature being available on the subject, we tried 40 known samples, by varying 1) Temperature 2) Conc. of ethanolic alkali 3) Time of reaction. The optimum experimental conditions are: the use of N/2 alcoholic KOH(excess), temperature 20°C. plus or minus 1°C, and time of reaction 90 minutes. Under these conditions the results obtained were comparable with those obtained by the crystallization process previously described.

Ed. Vorperian

SEMINARS OF 1948 - 1949

The seminars given by the members of the IVth Year Class have again been of high quality and were well presented. A brief digest of their content is herewith given:

Nov. 6: THE ORGANIC CHEMISTRY OF SULFUR by Berj Nalbandian

This seminar was the summation of a summer's reading & study of C.M. Suter's 858 page book on the subject. To digest this material so as to give a thorough survey of the subject in one hour is exceedingly difficult, but was very well accomplished. 17 pgs.

Nov. 13: HOSPITAL PHARMACY by Helena Perucka

During the course in library practice the previous year Miss Perucka spent considerable time in collecting a complete bibliography on this subject. During the summer the substance of these references was worked up for phases of the subject that would be of value to our own hospital pharmacy set-up. She is to be congratulated on the treatment of the material. 5 forms, 40 pgs., 28 refs.

Nov. 27: THE PREPARATION OF SOLUTIONS ISOOSMOTIC WITH BLOOD, TEARS AND TISSUE by Adib Bashshur

This is a review of the book of the above title written by C.J.Lund, E.P.Nielsen, and K. Pedersen-Bjergaard, Danish chemists who retested all previous data on isotonic solutions for the new edition of the Danish Pharmacopoeia. They found other systems of preparing "isotonic" solutions based on incorrect data and give 0.52° C. as the freezing point depression of both lachrymal fluid and blood serum. This corresponds to a concentration of 0.9% NaCl. As pharmacist Nielsen is now connected with the Danish Mission Hospital in Nebk, near Damascus, this work was of great interest to the class. 23 pages., 2 refs.

Dec. 4: ARAB CONTRIBUTIONS TO PHARMACY AND ALLIED SCIENCES by Rahman Kadri

A survey sketch of Pharmacy and Medicine in the Eastern Caliphate comparing the status of the pharmacist and the physician of the middle ages with our own. In the historical part about schools, examinations, professors and students the high level of education which had to be reached before study in the professions could be begun was brought out. 30 pgs., 12 refs.

Dec. 11: PHARMACY AND MEDICINE IN THE GOLDEN AGE OF THE WESTERN CALIPHATE by Najib Atiyeh

After giving an historical introduction and a general survey of the age Mr. Atiyeh discussed the most important contributions to the field of medicine and pharmacy and the influence of Arabic pharmacomedical contributions and writings on mediaeval Europe and the Renaissance. 15 pgs., 5 English refs., 6 Arabic refs.

Dec. 18: PRESCRIPTION SURVEY OF NABLUS by A. G. Anabtawi and Z. Abu Ghazaleh

This third survey made by students was exceedingly well done. The results are compiled in a comparative article of all three surveys in this number of the Apothecary. 40 pgs., 6000 prescriptions

Jan. 8: ULCER TREATMENT

by Uthman Kanafani

The incidence, frequency, diagnosis, and causes of ulcers were followed by a thorough discussion of their therapy and how we can improve the management of Peptic Ulcer. Among many valuable things brought to light we learn that the newer preparations of Magnesium Trisilicate, Aluminum Hydroxide, and Resin Antacide do not inactivate Pepsin even though they effectively reduce stomach activity.

26 pgs., 21 refs.

Jan. 15: OPENING A NEW PHARMACY

by George Tarazi

All the difficulties of financing a new pharmacy by borrowing, by partnership, or by marrying rich; the amount that should be invested in a new venture; the importance of location; the need to observe all local regulations as to area, frontage, ventilation, and sanitation; care in choosing the proper color scheme, lighting and furnishings; arrangement of displays and the dispensing room; where and what to buy; and the adoption of a proper ethical store policy were all discussed.

24 pgs., 3 refs.

Feb. 19: THE MECHANISM OF THE ACTION OF CERTAIN DRUGS

by Amin as-Sus

The effects of sulfonamides in certain mechanisms of the body and bacteria were explained and the inconclusiveness of six different theories as to how they act reviewed. The latest theory finds a blocking of an enzyme system essential to growth of bacteria. The known effects of Penicillin and Streptomycin were also given and the factors influencing their activity explained. Penicillin seems to act by promoting dehydrogenation of SH groups of certain essential metabolites of bacteria such as glutathione. Although the mode of action of Streptomycin is still unknown it may be due to its ability to block an oxidative enzyme system for the growth of susceptible bacteria.

24 pgs., 20 refs.

March 5: SURFACE ACTING ANTISEPTICS

by Adib Jidawn

After presenting a complete list of antiseptics and stating the properties of an ideal disinfectant the surface-active anti-infectives were taken up in detail. These are either anionic (soaps, synthetics, acid dyes), cationic (basic dyes, quaternary ammonium salts), or non-ionic (fatty acid esters, ethanolamines, sulfonated and sulfated oils) in character. The usefulness of each type was fully explained.

26 formulas, 39 pgs., 17 refs.

April 2: DENTAL CARIES AND THEIR PREVENTION

by Daud Farsun

The causes of tooth decay were given followed by a discussion of the various methods of treatment and prevention:- altering the diet, removal of lactic-acid forming carbohydrate foods from the site, changing the bacterial flora, and by changing the pH of the saliva to more than 5.5 (below which enamel is soluble), methods using fluorides, coatings of zinc ferrocyanide, urea, and urea combined with detergents were explained. Samples of a pleasant urea-detergent preparation were distributed as samples. 21 pgs., 4 refs.

April 30: CURARE

by Barkev Murgditchian

Following an interesting historical sketch of curare and its use by the South American Indians a review of its introduction into modern medicine in purified form was presented. 19 pgs., 9 refs.

A brief review of the malaria cycle followed by a thorough discussion of pamaquine, quinacrine, chloroquine, pentaquine, and paludrine, together with the prevailing theories for the action of each. 50 pgs., 30 refs.

Sun screens in liquid, cream or ointment form have come into prominence as a necessary adjunct to sun bathing. The various chemicals which have been found to be of value in absorbing the actinic (or burning) rays of the sun were discussed as to relative merit and warning about hypersensitiveness given. One of the simplest effective preparations that any dispensing pharmacist can very easily prepare is a 10 per cent solution of para-amino benzoic acid in 70 per cent alcohol, slightly perfumed. 20 pgs., 25 refs.

The various standard treatments for drug addiction, the new drugs showing promise of better results, and the responsibility of the pharmacist in preventing addiction were presented.

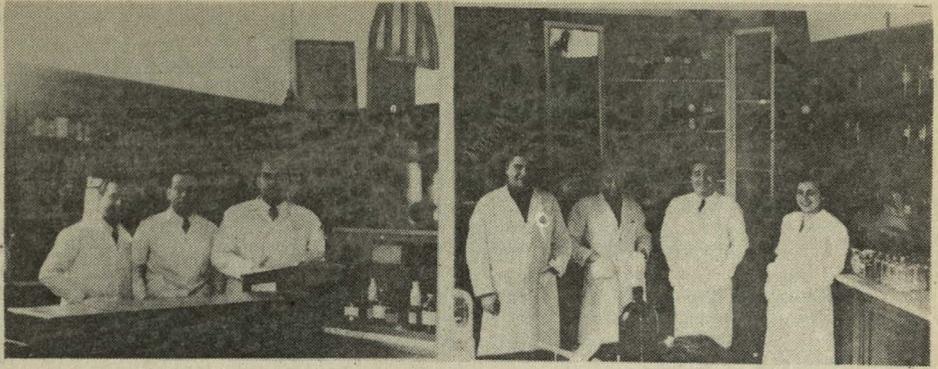
25 pgs., 12 refs.



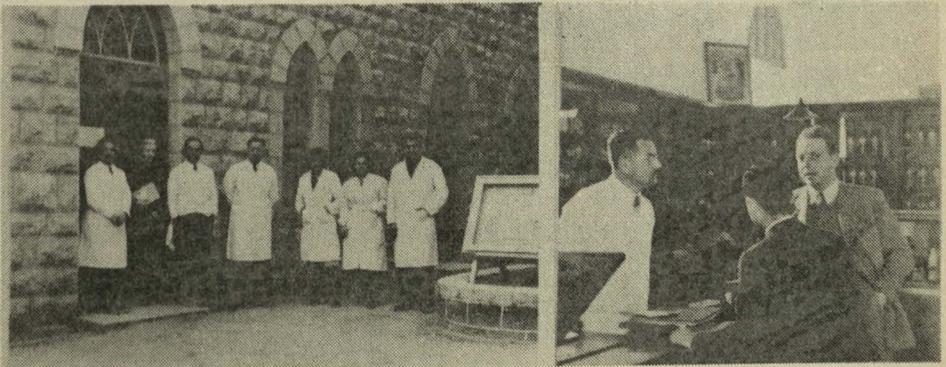
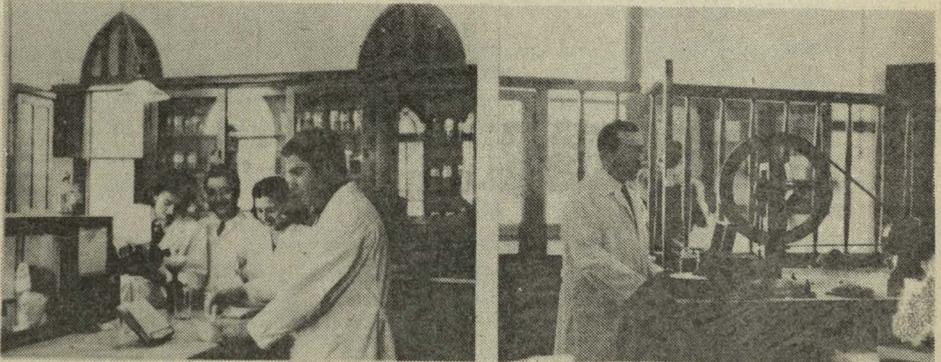
R. J. P.

Answers to Questions on page 28

- |                                  |  |
|----------------------------------|--|
| 1. U.S.P. XIII                   | B.P. 1948                                    |
| a. Penicillin Sodium             | a. Penicillin (either the Na or the Ca salt) |
| b. Penicillin Calcium            | b. Cream of Penicillin                       |
| c. Pen. Dental Cones             | c. Sterilized Cream of Penicillin            |
| d. Pen. Injection in Oil and Wax | d. Injection of Penicillin                   |
| e. Pen. Ointment                 | e. Oily Injection of Penicillin              |
| f. Pen. Tablets                  | f. Lozenges of Penicillin                    |
| g. Pen. Troches                  | g. Ointment of Penicillin                    |
2. Because it contains only .05% morphine B.P. & Codex, (U.S.P. .04%) which is below the required .2%.
- |  |  |
|--|--|
| 3. Carron Oil -- Linimentum Calcis           | Bitter Wood -- Quassia Wood                      |
| Chlorodyne -- Tr. Chloroformi et Morphinae   | Vin de l'Hotel-Dieu -- Vin de Digitale Composé   |
| Zephiran Cl. -- Bezalkonium Chl.             | Blue Mass -- Massa Hydrarg.                      |
| Sirop de Gibert -- Sirop d'Iodure Mercurique | Brown Mixture -- Mistura Opii et Glycerhizae co. |
| Decholin -- Dehydrocholic Acid               | Sirop Thebaine -- Sirop d'Opium                  |
4. The best treatment for Scabies is Benzyl Benzoate Lotion.
5. Ointment of Wool Alcohols.
- |                                    |                                |
|------------------------------------|--------------------------------|
| 6. Liver Injection - 1 U.S.P. Unit | Morphine Sulfate -- 10-30 mgm. |
| Strychnine Sulfate -- 2-8 mgm.     | Digitoxin -- .1-1 mgm.         |
| Arsenic Trioxide -- 1-5 mgm.       | Codeine Phosphate -- 30-60 mg. |
7. Castor Oil Sandwich is a very convenient way of administering castor oil purge. This contains syrup which settles in the bottom, castor oil in the middle, and brandy which forms the upper layer.



THE UNIVERSITY PHARMACY



SUMMARY OF PRESCRIPTIONS SURVEYS

On January 27, 1947 M.Abu-Hijlah and L.Karamanukian presented the first prescription survey, of Beirut. This was followed in the year 1948, by that of Jaffa, Palestine by Z. Abu-Ghazalah and A.G. Anabtawi. These prescription surveys are believed not only to be the first ones carried out in their respective cities, but in any of the countries of the Near East.

In all these surveys, the same difficulties were met over and over again, that is, the reluctance of the pharmacists to allow the use of their prescription books and difficulties met with in obtaining adequate records for proprietary medicines prescribed.

Every effort was put forward in collecting prescriptions, to represent the city where the prescription survey was held. In no way do we want to present these surveys to you as entirely perfect and faultless ones.

Our purpose was to provide the senior classes with the present status of pharmacy in the Near East as accurately as possible. We hope these surveys will be of help to pharmacy graduates who are planning to open pharmacies of their own. It is also just possible that more surveys might be a step towards the realization of a Pan-Arab Pharmacopoeia.

Table I

Comparative Study of Drugs Prescribed More Than 100 Times in the Three Surveys as Calculated for 5000 Prescriptions Each.\*

Drugs	Bei- rut	Jaf- fa	Nab- lus	Drugs	Bei- rut	Jaf- fa	Nab- lus
Acacia	-	220	-	Collargol	166	-	-
Acid Acetylsal.	181	138	129	Ephedrine HCl	-	-	131
Aminopyrine	208	422	221	Glycerin	163	155	132
Ammon.Carb.	-	-	101	Glycyrrh.Fldext.	-	-	270
Aniodol	231	-	214	Inf.Pectoral	-	-	325
Antipyrine	173	-	-	Inf. Tilleul	148	-	-
Argyrol	148	-	-	Julep Gommeux	208	-	296
Arrhenal	-	-	120	Lactic Acid	-	145	-
Belladonna Extr.	-	223	-	Lactose	161	231	268
Belladonna Powd.	100	-	-	Lanolin	114	-	-
Benzonaphthol	256	-	99	Liq.Ammon.Acet.	138	215	207
Bism.Subcarb.	-	102	111	Liq.Ammon.Anisat.	-	-	103
Boric Acid	112	127	-	Methenamine	186	-	118
Calcium Carb	-	-	129	Peppermint Water	117	185	-
Calomel	-	-	140	Petrolatum	210	210	166
Codeine Phos.	-	235	166	Phenobarbital	186	240	174

Potassium Acetate	-	150	-	Sulfathiazole	291	319	626
Potassium Citrate	-	503	155	Syrup	-	-	216
Potion Riviere	114	-	-	Syrup Aurantii	115	295	277
Procaine HCl	110	-	-	Syrup Codeine	-	-	134
Quinine Ethylcarb.	-	117	-	Syrup Senega	104	-	-
Quinine HCl	171	-	-				
Rivanol	-	-	281	Syrup Raspberry	-	135	-
Saccharin	-	-	175	Syrup Thyme Co.	-	-	104
Santonin	-	-	140	Syrup Tolu	160	500	471
Sodium Benzoate	304	506	505	Tannalbin	-	290	104
Sodium Bicarb.	384	380	248	Tr. Belladonna	138	112	124
Sodium Citrate	316	187	223	Tr. Cardamom Co.	-	466	174
Sodium Salicyl.	123	192	-	Tr. Kino	-	158	-
Sodium Sulfate	104	-	-	Tr. Lobelia	-	180	-
Soln. Adrenalin	218	-	-	Tr. Nux Vomica	-	125	-
Sulfadiazine	101	335	-	Tr. Opii Camph.	-	-	196
Sulfanilamide	134	-	-	Tr. Senega	-	135	-
Sulfasuxidine	-	222	-	Water & Aq. Dest.	465	115	625
				Zinc Oxide	-	135	108

Table II

Ratio of Patent or Proprietary Medicines to the Total Prescriptions Filled \*\*

Beirut - 29% according to one pharmacist who kept 1 year's record.  
 - 24% and 27% from 1 week's record of two other pharmacists  
 Jaffa - 36% according to the prescriptions collected  
 Nablus - 40% according to the survey

Table III

Official Drugs and Galenicals Prescribed

Beirut - Out of 539 drugs and galenicals prescribed 100 were not official in either the U.S.P., B.P., or French Codex.  
 Jaffa - Out of 403 there were 63 not official in these books.  
 Nablus - Out of 562 there were 91 not official in these books.

\* The survey covered 4000 prescriptions in Beirut, 5000 in Jaffa, and 6270 in Nablus.

\*\* These figures are now much higher than shown in the survey, since new proprietaries are being introduced into the market at an appalling rate. This is especially true for Beirut.

L. M. Karamanukian, Ph.C.

DO YOU KNOW THAT ?

Dr. R. J. Pauly has accepted the position of Assistant Director of the Pharmaceutical Division of the Sterling-Winthrop Research Institute at Rensselaer, N. Y. His two daughters will be attending Oakwood School at Poughkeepsie while his eldest son will be in a college nearby. They expect to leave Beirut on the S.S. Exochordia on July 5.

Prof. A. Haddad has been made Acting Director of the School and of the University Pharmacy for the coming year. A part of his summer will be spent in supervising the structural alteration of the manufacturing laboratory which is to have two new dust-free rooms for sterile solution work and a large storage space for apparatus and the supplies of the School.

Prof. C. Abou Char, a graduate student at Massachusetts College of Pharmacy for the past year working for his M.S. Degree in Pharmacognosy, missed his Christmas examinations due to being ill with chickenpox. On making up the work in January he came through with five grades in the 90's, one of which was a 98 and another 100! He expects to be on the campus again before July.

Prof. F. Istfan will be leaving as soon as the school year is finished in order to spend a year of leave studying for his doctorate at the Faculté de Pharmacie, Université de Paris. He will take advanced courses in Pharmaceutical Chemistry and do his research work on the purity rubric for new medicines to be included in the French Codex and the new International Pharmacopoeia. He will study and work under Prof. R. Delaby, an expert on sulfamides-amidines and pharmacopoeial monographs. Prof. Delaby is also General Secretary of the "Union Internationale de Chimie" which will hold its XV<sup>e</sup> Conference in Amsterdam during September 1949. Prof. Istfan expects to attend this conference also.

Mr. Vorperian, B.A., Ph.C., instructor in the School for the last six years and in charge of the Public Analyst laboratory for the last three, is planning to study for his Ph.D. Degree in Pharmaceutical Chemistry at Ohio State University.

Mr. Karamanoukian, B.A., Ph.C., has been reengaged as an Instructor in the School for another year.

Mr. George Passaris '41, after three years as Director of Medical supplies for the Ethiopian Government at Addis Ababa emigrated to Australia during the summer of 1947. He has been working as an assistant dispenser in Sydney and entered the Technical College there, in February, to work for a Public Analyst Degree.

A letter from Miss Ursula Zalot '48, from 48 Redcliffe Square, London S.W. 10, states that she found employment in a big pharmacy where there are two qualified pharmacists, an assistant in dispensing, two student apprentices, and two counter clerks. The pharmacy fills some 200 prescriptions daily. For registration as M. P. S. she is required to have six months employment in Great Britain, an examination in Forensic Pharmacy, and the practical examination in Pharmaceutics. In addition she has to provide evidence satisfactory to the council that:

(a) she has followed a course of training in Pharmacy of not less than three years in a University, and

(b) that she holds a diploma as pharmacist in a place outside the United Kingdom that would qualify her to be registered as a pharmacist in that place.

Miss Ludmila Kregiel '48 has been a graduate student at the Philadelphia College of Pharmacy and Science this past year, as a Fellow of the American Institute of Pharmaceutical Education. As the fellowship has been extended for another year she is going to remain in the U.S. to work for her Doctorate Degree.

Miss Maria Korabinska '48 is located in Argentina some 2000 Km. from Buenos Aeres. When she first arrived she obtained work in a pharmaceutical firm filling ampuls, but has recently accepted a position as chemist in a sugar factory until such time as she can get recognition of her pharmacy diploma.

Miss Julia Federowicz '47 is in charge of the Polish Red Cross Pharmacy in Beirut. She expects to leave for Canada soon.

Miss Maria Michajlow '48 is located at 1446 Mountain Street, Montreal, P.Qu., Canada. This is a large, beautiful city, mostly French. There are no women pharmacists or students of Pharmacy in Quebec as far as she can find. Miss Michajlow is at present working in a pharmaceutical firm with but little hope of obtaining recognition of her pharmaceutical degree, as the Quebec laws do not seem to follow those of the United Kingdom. The official book there is a French translation of the British Pharmacopoeia.

Mr. Tawfik Zard '48 has organized a new wholesale importing drug business in Beirut.

Mr. Muhammad Rifi, Mr. Muhyiddin Mirjan, and Mr. Husayn Mustafa all of the class of 1948 have each opened up a new pharmacy in the different coastal cities of Tripoli, Sidon, and Bint Djeball respectively. We wish them all good success in their new venture.

Mr. Yahya Fakhuri and Mr. Shu' Zilkha, both of '48, have been registered as Public Analyst students during the current academic year and have been specializing in biochemical and bacteriological clinical analysis.

Of the Displaced Persons or "Palestinian Refugees" who are graduates of the School we have been able to locate the following in Lebanon:- Hanna Dawwani '44, is assistant instructor in biochemistry at the A.U.B., Jamil Barghash '43, is assistant dispenser at the University Pharmacy, Fawzi Bishara '33, is teaching in the Friends High School in Broumanna, Najib Jamal '48, and Iliyya Shammass '47, are both teaching in the Chouifat High School, Nasib Nassar '32 and August Khouri '40 are with the American Levant Shipping and Distributing Company (Agents for Abbott), Anis Haddad '40 is dispenser for the Iraq Petroleum Company in Tripoli, Suhayl Halabi '36 is medical representative for Khalif Fattal et Fils.

In Syria we find:- Zuhayr Annab '48 as medical technologist in Dr. Altounian's Hospital in Aleppo, Noubar Arsenian '35 who is acting as representative for the A.R.A. Company in Aleppo, and Bisharah Azzam '44 who is teaching in a government school there.

Rashid Dajani '38, Ramiz Afifi '47, and Munir Bastami '48 are all teaching in schools in Baghdad.

Dr. Moses Albert Phar. D. '16, was recently honored with a medal of merit by the Syrio-American Lodge of Free and Accepted Masons at its 25th Anniversary. Dr. Albert was one of the founders of the lodge as well as being one of its most active members.

## A B O U T O U R S E L V E S

We often hear that a picture may mean more than a hundred words. The following tables and figures, which are the result of a survey carried among our students late in March, tell more than I can try to achieve in as many words.

Since a good number of pharmacy students mention Psychology as a course they wished to have in the curricula, here is fresh ground for them to work on - themselves. All figures indicate percentage.

### REASONS OF CHOICE OF PHARMACY:

	Men	Wom.	All
Commercial	34	33	32
Professional	44	50	44
Owning a Pharmacy	3	--	2
Shift from Medicine	10	16	13
Parents' wish	6	--	4
For later teaching	3	--	2
Other reasons	3	--	2

### FUTURE PLANS:

Pharmaceutical	70	100	72
Medicine	8	--	6
Educational	9	--	8
Other	13	--	13

### LITERATURE FAVORED MOST:

Professional	25	33	25
Fiction	15	50	15
Magazines, papers	60	16	60

### WOMEN IN PHARMACY SHOULD BE:

More than men	14	8	13
As many as men	47	84	50
None in Pharmacy	27	--	20
As it is or indiff.	12	--	17

### FAVORING:

To be elected	23	--	20
To elect others	54	66	55
Indifferent	23	33	25

Superstitious	11	33	13
Not superstitious	89	66	87

### AFTER ADMITTANCE:

	Men	Wom.	All
Pleased	57	84	60
Disappointed	43	16	40

Reasons- decreasing order of votes much memory work, standard, expected more.

### INTERESTS:

Social Life	92	66	79
Solitary Life	8	33	21

### EXTRA CURRICULAR ACTIVITIES:

In favor of more	82	50	82
Against	--	--	--
Indifferent	18	50	18

### PREFERENCES OF MARITAL STATE:

Remain Bachelor	3	--	3
Professnl. spouse	30	66	30
No qualifications	17	--	15
Not decided yet	50	33	52

### RELIGIOUS BELIEFS:

Faithful & sincere	60	66	60
Simply believing	23	33	24
Indifferent	10	--	10
Atheist	7	--	6

### IN DISCUSSIONS

Argumentative	79	33	75
Passive	10	16	10
Indifferent	11	51	15

Originally the tabulation was based on classes as well as sex. Since very slight differences in percentage between the respective choices of classes were observed, the tabulation has been restricted to the two sexes, a column of totals being included. It was, surprisingly interesting to note the differences in opinion of classes as to which courses they preferred not to take; it is perhaps more suitable to list them in the decreasing order of votes:

- First Yr. 1) Physics & English (equal vote); 2) Zoology;  
Second Yr. 1) Botany; 2) History of Pharmacy & English (eq.v.);  
 3) Physics & Library Practice (eq. v.).

Third Yr. 1) Latin & Pharmacognosy; 2) History of Pharmacy and Arithmetic (equal votes in both cases)

Fourth Yr. 1) Physics & Botany (eq.v.); 2) Pharmacognosy III.

So, it is rather a matter of class difficulty toward these courses than a "universal" prejudice. Most students seem to worry about their existing courses, or those they expect to take in future; few remember their past difficulties.

Still of greater significance are the courses students wish to see in their curricula or have in a more advanced form. The tendency to have courses on preclinical medical standards and in medical technology is surprisingly strong, and this tendency is found among the votes of all classes. The following is a list of those favored courses in decreasing order of votes:

First Yr. a) Psychology; b) Latin; c) Chemistry; d) Analysis, Biology; Organic Chemistry, & Anatomy (equal votes).

Second Yr. a) Organic Chemistry, Bacteriology, & Pharmacology (equal votes, all in advanced form); b) equal votes on advanced courses in Physiology, Pharmacy, and Medical technology.

Third Yr. Equal votes on advanced courses on the following groups of subjects: a) Chemistry and Pharmacology; b) Psychology and Medical Technology; c) Manufacturing & Analytical work; d) Bacteriology & Organic Chemistry.

Fourth Yr. a) Advanced Pharmacology; also, equal votes on groups: b) Organic Chemistry & Philosophy; c) Chemistry, Analysis & Medical Technology (all advanced).

One more item of interest in interclass distribution is that of preferred literature: (This deviation is found in none of the distributions made between classes).

LITERATURE	I Yr.	II Yr.	III Yr.	IV Yr.
Professional	30%	25%	26%	18%
Fiction	21%	20%	10%	27%
Magazines, etc.	49%	55%	64%	55%

-----

Another cross-distribution, taking educational background as the basis was attempted, but could not be fulfilled because of lack of data. Unfortunately, few students cared to fill in that column; the matter has to be left to some future investigator.

The compiler of this data considers the above tabulation by no means complete; he has constantly been aware of the lack of data, and of sincerity of the subjects taking the "test". It however has been a fairly good start in the field, and it has given a more or less outlined sketch of the state of thought of the great majority of students in our School of Pharmacy.

The compiler considers it a duty of his to thank the following for their support of the idea, suggestions, and help in the administration of the questionnaires: Professors Pauly, Haddad, Istfan, and Mr. Karamanukian; also to Mrs. S. Sivinsky for printing the questionnaire sheets; and to Messrs. B. Batshon (Ph. II) & A. Marcarian (Ph. I) for their assistance in the tabulation of the data.

Hamdi Dürüst, Pharm. II.

## QUALITATIVE MEMORIES

(Prof. Istfan enters the class with the papers of a recent quiz)  
"Here, in one of the papers, is a statement or a discovery which deserves a super-Nobel Prize! Faydi treats metallic mercury with excess ammonia and gets silver. If he were to add sodium hydroxide he would probably finish with gold!"

Miss Baddourah - "I don't know why I can't get the orange precipitate"  
H. Durust - "Do you expect 'Ladies first' in chemical reactions also?"

"Ruru" heats a colorless solution in a tube, which starts spattering out. As everybody starts running away, he assures:  
"Don't worry it is only Sulfuric Acid!"

## IN THE PHARMACY II LABORATORY

Mr. Vorperian (demonstrating) - "Now, we use these moulds for the suppositories, after having oiled them thoroughly to prevent any sticking".

Faydi - "But, Sir, in my practice year I could make them by hand".

Mr. Vorperian - "Of course, your Nablus Pharmacopoeia must have permitted that slight deviation from standard practice. Does it?"

## PRESENTS TO OUR PROFESSORS AND TEACHERS

Prof. Pauly - A medal for patience and our best regards for his never ending kindness.

Prof. Haddad - An editorial job on Remington's Practice of Pharmacy, Tenth Edition.

Prof. Istfan - Attentive pupils, intelligently answered exam papers, chemistry-dreaming students.

Prof. Abou Chaar - Chlorophyll painted (if possible) villa, with nothing but "phytes" around.

Mr. Vorperian - First year men who speak and understand more English.

Mr. Karamanoukian - A ton of cigarettes, half a thousand gross of matches, a quarter ton of Brazilian coffee.

## PRESENTS TO PHARMACY II

To Miss Baddoura: A golden shield to protect her from the evil eye.

To Maksad: Twenty francs for his pharmacopoeia.

To Durust: A lady with whom to dance the samba.

To Kayyali: 100 pounds to continue his week end visits to Aley.

To Yazijian: Scissors with which to reform his moustache.

To Andonian: An anthology of Short Stories on Love.

To Batshon: He says he does not need presents.

and last, but not least,

To myself: A sharp knife to cut my tongue.

M.T.Faydi, Phar. II

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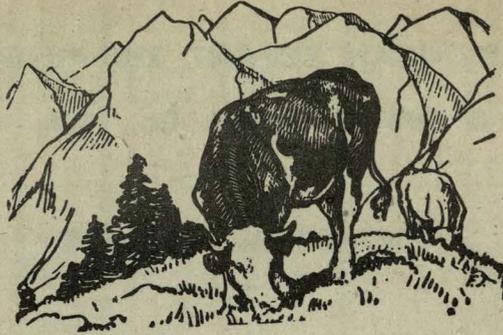
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From a pharmacognostic point of view:  
(Mr. Merjanian and the famous photographer Karkour are exhibiting their knowledge of pharmacognosy in the sunshine on the campus.)

Karkour - Define Oil of Cedarwood.

Merdjanian - Oil of Cedarwood is the volatile oil obtained from the wood of *Juniperus Virginiana*.

Karkour - Family?

Merdjanian - *Juniperus virginiana* has no family.

Karkour (astonished) - No family? Why?

Merdjanian (promptly) - Because it is not official in any of the pharmacopoeias.

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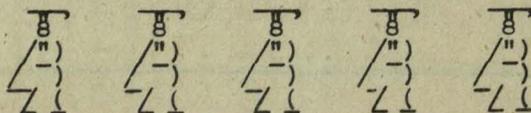
-----oooooooo-----

Prof. Haddad:- Why is it kept in clean bottles?

Mr. Maksad:- Well, first of all, because, if the bottle is dirty, the dirt will precipitate the solution.

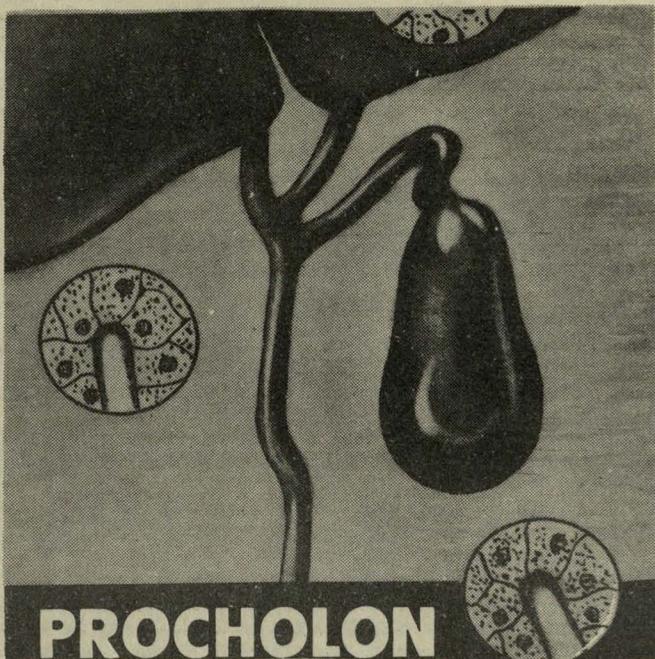
In Systematic Botany Laboratory (everyone starts wandering about the room)

Mr. K - By the way, you do not have visas for tourism!



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## PROCHOLON



### TABLETS   PROCHOLON

**Description:** Dehydrocholic Acid Squibb in tablet form; a potent hydrocholeretic derived from cholic acid.

**Indications:** Biliary stasis; liver insufficiency; post-operative management of biliary disease; in conjunction with Vitamin K therapy.

**Administration:** Orally; 1 to 3 tablets three or four times daily.

**How Supplied:** Bottles of 25 tablets.

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LEARN FROM THE SENIOR STUDENTS ??

Ques: What is a soap?

Ans: A soap is the offspring of NaOH and fat.

Ques: Name the men that you would associate with the following:

Iatrochemistry - Answer given:- "Peristalsis"  
Chiron. " " - "Wrote Ebers Papyrus"  
Magna Charta of Pharmacy " - "Oliver Cromwell"  
Chiron. - "The king who burned some who restricted  
pharmacy".

"A sympathetic medicine is when you apply the medicine  
to the cause of melody"

8            8            8  
(-)        (-)        (-)  
∠         ∠         ∠  
YY        YY        YY

Addressed to Mr. Vorperian:

Once our teacher entered the laboratory and upon smelling the gas escaping from an unlit bunsen burner said: "What! Don't you smell the gas? It is so strong you ... you ..." He comes and shuts the tap.

This incident, though when compared to the many daily incidents of the day made me wonder at the question - "Why did we not all smell the gas?"

At last I found it one day when reading in my physiology book. And I can answer Mr. Vorperian now in The Apothecary magazine so that we will all know about it.

The first "Law of Bois-Reymond" says:

"Stimulus, if of threshold intensity must be reached rapidly. A very slow change may not stimulate at all, while a rapid change will be quite effective, even though the total change is exactly the same in both cases. (Concerning the quality of odors):

"The intensity of any odor falls off very rapidly in just a few minutes of olfactory stimulation. Every one has observed that odors in a room go quite unnoticed to one remaining in the room, but are often evident to a marked degree to one just entering the room, whose olfactory apparatus is not fatigued".

M. Khalluf, Phar.III

JUST TO MAKE SURE ....

At the Engineering School of Robert College a professor briefs his graduating Seniors with the words:

"If you ever design a bridge, design it well; for you'll be asked to stand under it when the first train passes".

How many of us would be willing to take the first dose of the A.S.B. Pills we compound?

We deeply regret to announce the death of Miss Alice Abou Chedid, Ph.C. '31. Miss Abou Chedid was the only woman graduate practicing her profession in Beirut and it was always a pleasure to see her take her part in the meetings of the Syndicate of Pharmacists, where she was always looked upon as "The Only Rose Among The Thorns".



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Sparkling SMILE

Firmer gums.

Brighter teeth

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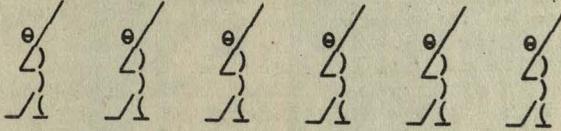
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AND  
MESSAGE

Agents for  
Lebanon & Syria

Trans-Mediterranean,

Khan Antoun Bey  
Beyrouth



P U Z Z L E

Do you know why the FIRE CAR is red ???

Answer: Because it has six wheels.  
Every wheel is twelve inches in diameter.  
Twelve inches is a ruler.  
A Ruler is Queen Elizabeth.  
"Queen Elizabeth" sails the seas.  
The seas contain fish. The fish have fins.  
The "Fins" fought against the Russians.  
The Russians are red. So the fire car is red!

(Heard by a listener of the B.B.C. program)

افتح ليلاً

صيدلية الجامعة الجديدة

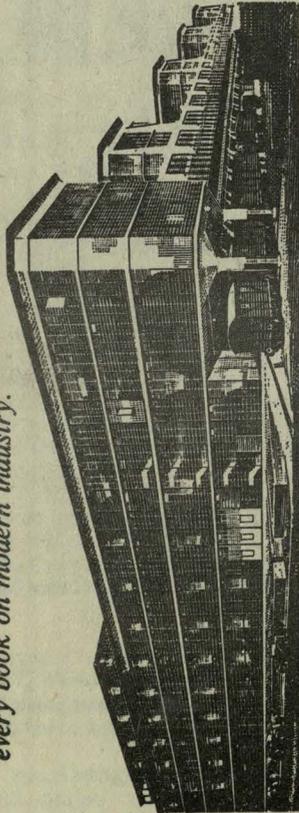
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