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OF KAPPA PSI PHARMACEUTICAL FRATERNITY

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THE MASK

(EXOTERIC)

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VOL. XXIV, No. 2 APRIL, 1926 WHOLE NUMBER 94

CONTENTS

Kappa Psi Pharmaceutical Fraternity Directory

CENTRAL OFFICE: Address—Dr. A. R. Bliss, Jr., The Almadura, 1489 Poplar Blvd., Memphis, Tenn.

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Dean of the School of Pharmacy,
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THE MASK

of the Kappa Psi Pharmaceutical Fraternity

Vol. XXIV, No. 2 April, 1926 Whole Number 94

PETITION FROM MISSISSIPPI

Central Office,
Kappa Psi Pharmaceutical Fraternity,
P. O. Box 3308, Crosstown Station,
Memphis, Tenn.

Gentlemen:

We, ~~do hereby promise to abide by and uphold the constitution and~~ members of the faculty and students at the School of Pharmacy of the University of Mississippi, University, Mississippi, do hereby petition the Grand Council of the Kappa Psi Pharmaceutical Fraternity for a charter as a Collegiate chapter.

We do hereby promise to abide by and uphold the constitution and by-laws of Kappa Psi Pharmaceutical Fraternity, to do all in our power to advance the interests and to insure the successful continuation of the chapter by the annual initiation of under classmen of proper caliber. We herewith enclose our charter fee and Grand Council Membership Fees. In token of the sincerity of our intentions we have individually affixed our respective names together with the year we are supposed to graduate, our home address and address while at the University of Mississippi.

Respectfully,

H. M. Faser, Dean
Warren J. Guy, '26, Magnolia, Miss.
William Collins Tidwell, '28, Holly Springs, Miss.
Lamar Charles Jennings, '27, Taylorsville, Miss.
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UNIVERSITY OF MISSISSIPPI

Historical Sketch

This institution, like the state universities in all the states of the Union, excepting the original thirteen, owes its origin to the policy adopted by the Continental Congress in the ordinance which became law July 13, 1787, and which was enacted for the government of the Northwest Territory. Its provisions were afterwards extended in general to all of the public domain. This ordinance declared in reference to education in the region to which it applied that "religion, morality, and knowledge, being necessary to good government and the happiness of mankind, schools and the means of education shall forever be encouraged."

In the carrying out of this policy, the State of Mississippi, when organized, received from the federal government the equivalent of one section of land in every township for common schools, and by the Act of February 20, 1819, received one township of land for the support of a seminary of learning, or state university. This act of Congress was intended to grant two townships of land to the state. The deficiency in the amount actually received was ignored or forgotten from 1819 to 1892. In 1892 the attention of the board of trustees was called to the matter by the chancellor of the University, and authority was given him in 1893 to undertake to secure the grant needed to make up the deficiency. By the Act of June 20, 1894, the second township was given to the University.

The lands embraced in the original township granted in 1819 were leased in part from 1829 to 1833. In 1831 the legislature directed that the lands be sold. Thirty-five and one-half sections were sold in the manner prescribed by the legislature about the year 1833, for the sum of $77,332.52. The act of the legislature of February 20, 1840, appropriated all the proceeds of the sale of the seminary lands "for the use and benefit of the University of the State of Mississippi," and on the same day the legislature provided for the location of the University, which had not yet been established. Upon the report of commissioners appointed under this act, the present location in Lafayette County was fixed by the legislature by a majority of one vote. On the 23rd day of February, 1844, the University of Mississippi was duly chartered by the legislature and its first board of trustees named.

The first meeting of this body was held in the capitol of the State, January 15, 1845, at which time an organization was effected. Under the original charter, the board was a self-perpetuating corporation consisting of thirteen members. In 1857, by an act of the legislature, the governor became, *ex-officio*, a member and president of the board. Since the Civil War, vacancies have been filled by the governor's appointment. An act of the legislature of 1870 states that such appointments are to be made with the advice and consent of the senate. In 1876, the number

of trustees was increased to fifteen. There are now ten members of the Board: The Governor and the State Superintendent of Education, who serve *ex-officio* through their terms of office; the special member from DeSoto County (appointed out of regard for the LaBauve bequest), who is appointed by the Governor for a term of four years; seven members from the state at large, who are appointed by the Governor for terms of six years each. In this board is vested the supreme control of the University.

The second regular meeting of the board of trustees was held in Oxford, July 14, 1845. The board accepted two half-sections of land lying immediately west of the town of Oxford, the south half of section 20, and the north half of section 29, township 8, range 3 W., which had been purchased by citizens of Oxford and Lafayette County, and donated to the state for the location of the University. At this meeting of the board of trustees, preliminaries were arranged for the erection of buildings. At the next meeting, in January, 1846, William Nicholl, an Englishman, was elected supervising architect. Plans were received and adopted for the front of the Lyceum building, two contiguous dormitories, and residences for four professors. Work was begun on these buildings soon afterwards. In July, 1848, the election of the first faculty was held, and November 6, 1848, the first session opened with a faculty of four members and about fifty students present. From its opening until 1880 the University was maintained by annual appropriations made by the legislature. In 1856 a special appropriation of $100,000, to be paid in five annual installments, was made by the legislature, and with the aid of this the University made its first large growth in facilities and equipment. In the fall of 1861, owing to the existing Civil War, only four pupils appeared for matriculation, the faculty resigned, and exercises were suspended until the fall of 1865. The board of trustees, when the exercises were suspended in 1861, appointed Professors A. J. Quinche and Burton N. Harrison as custodians of the buildings and other property of the University. Professor Quinche remained in charge during the period of the Civil War, and succeeded in preserving intact the property intrusted to his care. Professor Harrison resigned his place at the University and served as secretary to the President of the Confederate States.

Though in the original plan of the University the establishment of a course in Government Science and Law was provided for, six years elapsed before, in 1854, a law department was organized.

From the opening of the University in 1848 to the year 1870, the so-called "close curriculum" was in use. There was a course of study, entirely prescribed, leading to the degree of Bachelor of Arts, and a prescribed course leading to the degree of Bachelor of Laws.

The "close curriculum" system was changed by action of the board of trustees in 1870. By this action students were allowed to choose among courses leading to the different degrees of B.A. and C.E. on a basis of four years' study, and B.S. and Ph.B. on a basis of three years'

study. Subsequently, four years was required for each of these latter courses. Since 1870 various changes have been made in the courses and degrees offered, suggested by the experience of this and other institutions, and growing out of the development of higher education throughout America.

By the Act of March 5, 1880, the legislature of the state adjusted the indebtedness of the state to the University on account of the sale of the first township of land granted by Congress. This indebtedness was declared by act of the legislature as amounting to $544,061.22, on which sum interest at six per cent is paid.

In the autumn of 1882, the doors of the University were opened to women upon the same terms and conditions as to men.

In 1892 preparatory courses in the University were discontinued. Since that time the grade of educational work has been advanced more than one year, and the number of *bona fide* college students has increased from 176 to 920.

In 1894, by the Act of Congress of June 20, the University received an addition to its endowment in the form of a second township of land. The institution has received occasional appropriations from the state for the maintenance of its buildings, the grant of land by Congress being intended for current expenses of the institution.

On March 23, 1900, the state treasurer gave credit to the University for the sum of $134,688.24, this amount being the proceeds of the sale, by the trustees of the University of Mississippi, made on the 10th day of March, 1900, of the timber on 16,833.53 acres of land, a part of the grant of 23,040 acres of land made by Congress in the act of July 20, 1894. This fund is known as the 1894 land grant fund. To it was added, October 10, 1905, the sum of $20,504.00 from the sale of timber on other parts of the township.

In 1900 the Fanny J. Ricks Summer Term of the University began a much-needed work for those who could not attend the regular session. This work was maintained in the summers of 1900, 1901, 1902 and 1903, through the liberality of Mrs. Ricks. Her generosity secured additional funds for 1903 which greatly enlarged the work in scope and usefulness.

Courses in Engineering were organized in 1900. (Some such work had been offered in 1872, but this was discontinued in 1875.)

In 1903 Schools of Education and Medicine were added. For six years, only the first half of a regular four-year course in medicine was given. During the session of 1910-1911, the work of the last two years was given at Vicksburg in connection with the state charity hospital of that place. The work at Vicksburg was discontinued after one year, and the University reverted to the plan of giving only the first two years of the medical course.

The School of Pharmacy was organized in 1908. The School of Commerce and Business Administration was organized in 1917.

In 1902 the legislature appropriated the sum of $93,700 for various improvements, $24,000 of this being for current expenses. This fund enabled the University to enlarge its facilities greatly; with it were constructed substantial additions to the public buildings and a commodious dormitory for women students.

In the past ten years special appropriations have added to the equipment of the University. Science Hall was erected in 1906-07, Gordon Hall in 1909; the library building, partly the gift of Mr. Andrew Carnegie, was constructed in 1910-11; and the George Peabody Hall, the erection of which was largely provided for by the trustees of the Peabody fund, was built in 1912-13. The legislature in 1920 appropriated the sum of $712,000 for the erection of dormitories and a laboratory for the department of chemistry and the school of pharmacy.

Location

The University is situated in the outskirts of the town of Oxford, in Lafayette County. Its elevation above sea level is about 500 feet. The surrounding country is hilly, affording excellent drainage. The campus is a large grove of magnificent forest trees, with a carpeting of grass, covering sixty acres, in the center of a square mile of forest land belonging to the institution. This site combines the quiet, the beauty, and the vigor and physical healthfulness of the country with such conveniences as a town affords. The University's extensive domain is admirably suited for the largest development. Its tract of six hundred and forty acres, approximately five hundred lying west of the line of the Illinois Central Railroad, forms one compact block available for University uses.

Buildings

The Lyceum, occupying a commanding position on the campus, was completed in 1848. A few years later its capacity was nearly doubled by an extension in the rear. Much larger additions were made in 1903, when north and south wings were added to the original central portion. This building contains class rooms for the Departments of Economics, English, Greek, History, Latin, Mathematics and Romance Languages; the lecture rooms, drawing rooms, and testing laboratory of the Engineering School; quarters for the School of Commerce and Business Administration; the assembly hall of the Y.M.C.A., and the administration offices. The State Bond Improvement Commission has recently repaired this building, thereby restoring the University's most historic structure.

The Astronomical Observatory, built in the late fifties, contains the lecture room of the Department of Physics, the physical laboratory, the cabinets of physical apparatus, transit room, computing room, a small equatorial telescope, and the large telescope of the "twin equatorial" pattern. (For fuller description, see "Physics and Astronomy.")

The Chapel was completed in 1853. The auditorium occupies the first and second floors, with a seating capacity of five hundred and thirty on the first floor, and about four hundred in the galleries. The halls of the Hermæan and the Phi Sigma literary societies, and several living rooms for students, are on the third floor.

Lamar Hall was erected in 1889 as the University library, and was used for library purposes until 1911. Since 1911 it has been occupied by the Law School.

The Library, erected in 1910-11, contains the general University Library and reading rooms, and lecture rooms of the Departments of Greek and History.

The Medical Building was built during the session of 1906-07. Including a basement, chiefly above ground, it has four stories. In this building are found lecture halls, laboratories, and professors' offices, for the School of Medicine.

Peabody Hall, completed during the session of 1912-13, is occupied by the School of Education. This building contains eight lecture rooms, one auditorium with provision for a stereopticon, and rooms for the teaching of domestic science and manual training.

The Hospital, completed early in 1907, contains one large ward and several private wards, physicians' offices, sterilizing and operating rooms, apartments for matron and nurses, kitchen, dining-room, pantries, etc.

The Power House, and the new heat and light distributing systems, were completed late in 1908, at a cost of $35,000 and enlarged in 1923. (For fuller statement concerning these, see "School of Engineering.")

Chemistry and Pharmacy Building. The building which houses the Department of Chemistry and the School of Pharmacy was made ready for occupancy in the spring of 1923.

This is one of the best laboratory buildings in the South and gives ample space for the departments housed in it. It has a total floor space of more than 55,000 sq. ft., the basement and two floors being devoted to Chemistry, and the third floor to Pharmacy. The leading laboratories of the country were visited while the plans for this building were being developed, and an attempt was made to use those ideas which have proved valuable at other institutions.

In addition to these buildings constituting the University's plant, there are twelve residences. The Chancellor's is at the east end of the observatory; the other eleven, widely separated, are the homes of members of the faculty.

The cottages in the grove south of the Lyceum are designed for married students and their families.

The Open-Air Gymnasium is a temporary building for physical exercise.

Dormitories

Accommodations—Accommodations for the young men are afforded in the dormitories on the campus. Students may occupy these buildings

for lodging, or, with the approval of the Chancellor, may lodge in private families near the University. The *Ricks-Ward* group of buildings is a home in which all the conveniences of living are furnished for young women, under most favorable conditions, and under the immediate care of the dean of women.

Gordon Hall, a dormitory for men, was begun in the autumn of 1908, and completed in June, 1909. It accommodates two hundred students. Each living room has two ample closets, supplied with shelves and hooks; a lavatory with hot and cold water; a radiator, and an electric light. By means of outside windows, abundant light and ventilation are secured for every room. Broad corridors and stairways give easy access to all parts of the building.

The front of the building is nearly two hundred feet long, and there are two wings, each a little less than one hundred feet in depth. Within the quadrangular space thus formed, and in connection with the dormitory, is a beautiful dining hall, capable of seating five hundred. In the rear are the kitchen, pantries, storage room, etc.

Taylor Hall, built in 1905, is a dormitory containing thirty rooms.

George, Lamar, LeBauve, and *Odom Halls,* four dormitories for men, were built from the appropriation made by the legislature in 1920. These are uniform in architectural design and material. Three of these, Lamar, LaBauve, and Odom Halls, are grouped about an open quadrangle. George Hall stands separated, designed as first unit of a group arranged similarly to those above. These new dormitories mark a period in the material expansion of the University, since they are located on ground not hitherto included in the campus. They are the first of the buildings entering into the landscape outline of a greater University.

Ricks Hall, erected in 1903, and situated in a retired and convenient location on the University grounds, is a dormitory for women students; it affords a University home combining protection with freedom and dignity. It is provided with all modern conveniences.

Ward Hall, built from the appropriation of 1920, is a duplicate of Ricks Hall, with which it is connected by a dining hall of attractive design. The group of buildings so united gives a most pleasing architectural result.

Libraries

The library of the University, including its departments, contains about 35,000 volumes, besides a large number of pamphlets and maps. The general University library is a designated depository of the publications of the United States Government. The reading rooms are supplied with reference books, the leading scientific and literary periodicals, and daily papers. Students are allowed free use of all the books, subject to certain restrictions. Officers of the University and students engaged in advanced work are allowed access to all rooms and stacks. Persons not connected with the University have free use of the library for consultation, and on special permission from the Chancellor are allowed to draw books. The library is open for ten hours daily.

The School of Law has a special library of 6,000 volumes, and a reading room in Lamar Hall. The School of Medicine has a well-selected collection of books, located in the Medical Building. The departments of Physics and Chemistry have collections in their special fields, so placed as to be accessible to advanced students.

Laboratories and Museum

The departments of Astronomy, Biology, Chemistry, and Physics, and the Schools of Engineering, Medicine and Pharmacy, are well equipped with much valuable apparatus and material. There is a valuable geological collection.

The University Museum has been removed to the second floor of the Library Building. This Museum consists mainly of a very large and valuable collection of minerals from all parts of the world.

Through the efforts of Dr. Calvin S. Brown, Archæologist of the State Geological Survey, a large collection of Indian relics, consisting mostly of pottery, was donated by the late Dr. J. A. Davies, of Walls, Mississippi, to the University and the State Geological Survey, and is now on display as a part of the Museum. The Geological Survey Museum, of the mineral resources of the State, occupies an adjacent apartment on the same floor; all are open to inspection by students and interested visitors.

Organization

The University comprehends seven divisions, as follows: The College of Liberal Arts, founded in 1848; the School of Law, founded in 1854; the School of Engineering, founded in 1900; the School of Education, founded in 1903; the School of Medicine, founded in 1903; the School of Pharmacy, founded in 1908; the School of Commerce and Business Administration, founded in 1917.

The subdivisions are known as departments. Certain departments may be considered in connection with more than one school.

INSTALLATION OF BETA-RHO IN MISSISSIPPI

By Charles E. Wilson, Phar.D., *Satrap*
South Atlantic Province of Kappa Psi

Obedient to the command of the Grand Chapter, I proceeded to University, Miss., on April 19 and there met with the applicants for charter as Beta-Rho Chapter of Kappa Psi in the School of Pharmacy of the University of Mississippi.

At eight o'clock in the Dean's office the installation was carried out in accordance with the Constitution and By-Laws of Kappa Psi, and Beta-Rho was duly and constitutionally installed.

The work was discussed with an effort to give the brothers some idea of its seriousness, etc. The duties of the officers and members

were explained that each might grasp the significance of their office.

Although there was no big demonstration, etc., due to the fact that the installation had to be made during the school week when there were classes and laboratory to follow, there was evidence of sincerity in the eyes and words of every man present. There was that enthusiasm that words do not express; there was the pleasure of having become a member of Kappa Psi; and the desire to work for and glorify that Fraternity of fraternities—Kappa Psi, through the united efforts of the membership of Beta-Rho.

Beta-Rho has, like other Kappa Psi chapters, chosen its membership well. They have men whose desire in life is headed toward that which means most; whose ideals are worthy of the most humble imitation; whose marks will be made in every day life just as they have been made in collegiate; whose every thought is that of which is good and means most to humanity, the Brothers, the School and to Kappa Psi.

I feel that the future holds nothing but success for Beta-Rho in the University of Mississippi; for with a continuation of caliber such as is now present in the charter membership, and with the able guidance of Dean Faser, nothing but success is possible. I wish to convey to the membership of Beta-Rho my appreciation of the kindnesses extended me. It was indeed a privilege, a pleasure and an honor to function as the installing officer of our newest chapter.

DR. C. E. WILSON, Sigma,
Installing Officer of Beta-Rho;
Secretary, Mississippi State
Board of Pharmacy

THOMAS STOCCO, ex-Chi,
Charter Regent Beta-Mu

DR. H. F. OWENS, Chi,
Installing Officer of Beta-Mu
Chapter; Chicago Graduate
Chapter

VALPARAISO'S PETITION

To the Grand Council of Kappa Psi,
c/o Dr. A. R. Bliss, Jr., G. R. and E.,
1489 Poplar Blvd., Memphis, Tenn.

Greeting:

We, the undersigned students in the School of Pharmacy of Valparaiso University, do hereby petition the Grand Council of the Kappa Psi Fraternity for a charter as a collegiate chapter of said Order.

We do promise to abide by the constitution and by-laws of the Order, to do everything in our power to advance its interests and uphold its good name, and to insure the successful continuation of the chapter by the annual initiation of underclassmen of the proper caliber.

We herewith enclose our check to cover the charter fee, and the Grand Council Membership Fees for each of the petitioners.

Respectfully submitted,

Dean Arnold
Axel Flint
Peter Genovese
Vincent Prezorski
Willard Shortz
Chester Srutiwa
Angello Dicello
William Fox
Arthur Haroldson
Frank Rodgers
John Slowik
Thomas Stocco

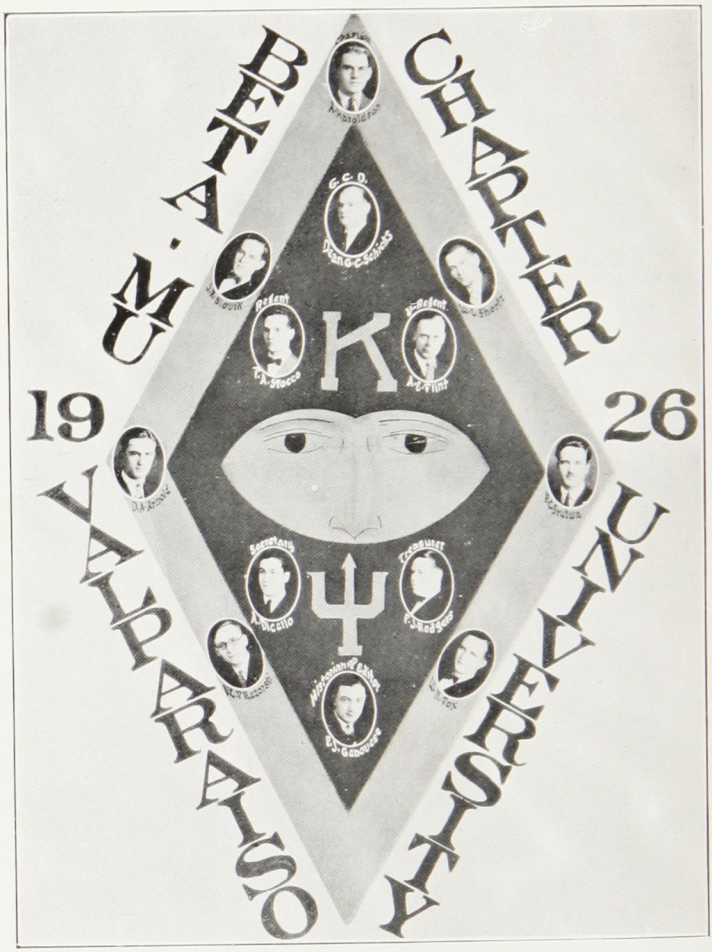
Approved by: George C. Schicks, *Mu, Dean of the School of Pharmacy.*

INSTALLATION HISTORY OF BETA-MU CHAPTER VALPARAISO UNIVERSITY

By Peter J. Genovese, *Historian and Editor*

The Beta-Mu Chapter of the great Kappa Psi Pharmaceutical Fraternity was installed the night of Saturday, April 17, 1926. Brother Owens was Grand Council appointed officer to officiate in this Chapter's installation.

At nine o'clock, Brother Owens, formerly of Chi Chapter, Chicago, was received by a committee at the Valparaiso Pennsylvania Station. Since it was the desire, before hand, of the Beta Mu group, to give an installation banquet at Hotel Lemke, in the honor of Brother Owens



BETA-MU CHARTER MEMBERS

and the prosperity of the future Chapter. Each member was obligated to bring with them a lady friend in order to make it more formal.

Thereby Brother Owens and his wife were properly escorted to their private suite reserved for them at the above mentioned hotel, for this occasion.

Brother Owens was assisted by two older members of Kappa Psi, formerly of the Mu Chapter of Massachusetts College of Pharmacy. They were Brother Schicks, who at present is the Dean of Valparaiso University College of Pharmacy; and Brother Hanley, who is proprietor of several drug stores in Gary, Ind'ana. Brother Stocco also assisted during the installation.

The Installation Dinner was promptly served at 10 o'clock and ended at 11:30, at which time the women present were escorted out of the Hall. Prior to installation Brother Schicks and Brother Hanley gave the aspirant members a lengthy and hardy speech on the benevolence of Kappa Psi.

Brother Owens promptly proceeded with the installation with the assistance of the other former members. After installation Brother Schicks and Brother Hanley presented the baby chapter with a donation to proceed and that the Beta-Mu may be worthy of its Kappa Psi Glory.

The following are installed as chartered members:

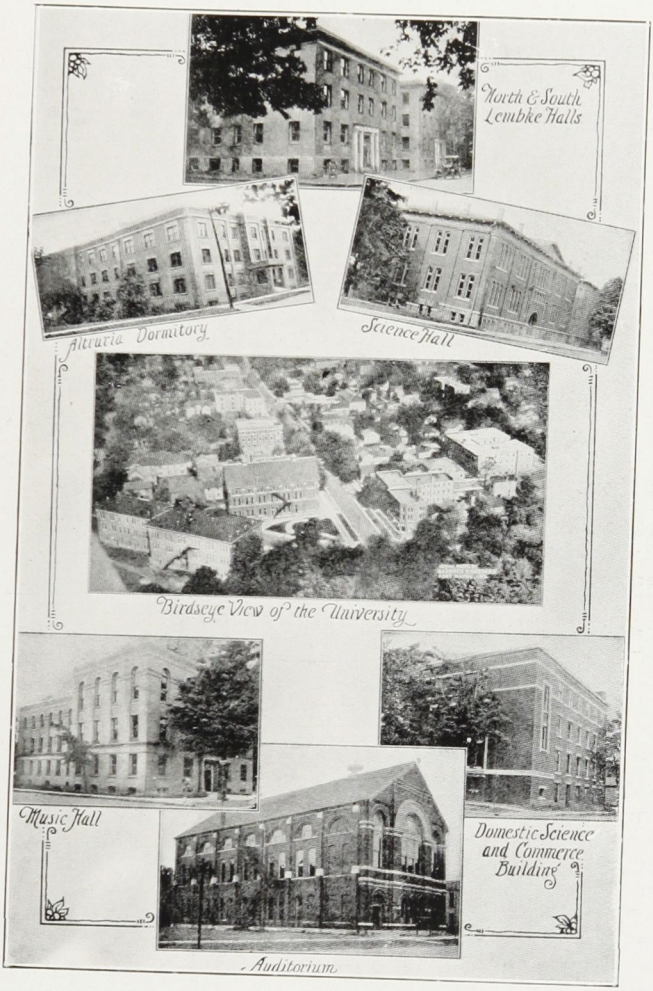
Thomas A. Stocco, *Regent*
Axel E. Flint, *Vice Regent*
Angelo Dicello, *Secretary*
F. J. Rodgers, *Treasurer*
Peter J. Genovese, *Historian and Editor*
A. Harold Haroldson, *Chaplain*
A. Dean Arnold
William Fox
Vincent Prezorski
Wilard C. Shortz
John R. Slowik
Chester P. Srutiwa
Dean G. C. Schicks, *G.C.D.*

VALPARAISO UNIVERSITY

By Peter J. Genovese, *Chapter Historian and Editor, Beta-Mu*

Valparaiso University was founded in 1873 by Henry Baker Brown for the purpose of giving earnest and ambitious students an opportunity to obtain a thorough and practical education at the least possible expense. Under the careful guidance of Mr. Brown, who served as president of the University until his death in 1917, and of Oliver Perry Kinsey, the Vice President from 1881 to 1919, the school prospered and in a course of time became one of the largest institutions of

CHARTER MEMBERS AND CHAPTER HOUSE OF BETA-MU



VALPARAISO UNIVERSITY

learning in the United States. Students from all parts of the world came to enjoy the educational advantages offered by the University. In the fall of 1925 the properties at Valparaiso were taken over by the Luthern University Association to perpetuate the school and are being painstakingly managed for the benefit of the University which has been dedicated by its new owners to the highest ideals in education.

The organization of the University comprises the College of Arts and Science with special premedical, predental, and prelegal curricula, the Teachers' College, the School of Music, the School of Pharmacy, the Law School, the Engineering School, the School of Commerce, and the University Preparatory School. The equipment of the University includes fifteen buildings, fifteen laboratories, general and departmental libraries, workshops, a large dining hall, and an athletic field.

The University is located at Valparaiso, Indiana, a beautiful residence city forty-four miles southeast of Chicago. Valparaiso is situated in the midst of a rich farming country and lies adjacent to the greatest industrial region of the middle west. The city is on the main lines of three railways, the Pennsylvania, the Grand Trunk, and the New York Central and St. Louis (Nickel Plate). It is also at the intersection of the Lincoln Highway and the Yellowstone Trail. The University campus, by the way, borders on both highways near their intersection. Valparaiso has many miles of paved and beautifully shaded streets, and is equipped with every modern utility. Chicago, Gary, Hammond, Indiana Harbor, South Bend and other great industrial cities are within easy reach. Opportunities for employment at times when the student is not in residence are, therefore, ordinarily abundant. Many students earn sufficient during the summer to pay a goodly portion of their expenses for the year.

The School of Pharmacy

The School of Pharmacy graduated its first class in 1893. It offers a thorough and practical training in all subjects pertaining to pharmacy, and prepares students for the various duties of prescriptionists, manufacturing chemists, food and drug inspectors, analysts in pharmaceutical lines of research, and for general analytical work in various fields of industrial chemistry.

The stringent laws governing pharmacists, the Federal Pure Food and Drug Act, and similar state statutes, as well as a general public wakening to the need of technical training for pharmacists, have made demands upon the men and women of this important profession which can be met only by college trained pharmacists. It is the aim and desire of Valparaiso's School of Pharmacy to promote the very best interests of pharmaceutical education, and to cooperate with other educational institutions, State Boards of Pharmacy, and pharmaceutical associations in maintaining the highest standard for the profession.

A COMPARATIVE STATISTICAL STUDY OF THE NUMBER OF REGISTERED PHARMACISTS, OF DRUG STORES AND OF HOSPITALS OF TWENTY-FIVE OR MORE BEDS' CAPACITY*

By Dr. Henry J. Goeckel,[1] *Gamma*

The objective of this investigation is to show, if possible, on the basis of supply that a large percentage of the hospitals in the United States do not employ registered or qualified pharmacists to compound and dispense and to have general supervision over the drug supplies of these institutions. Incidental objectives are to call attention to the need for developing this branch of pharmaceutical service, to learn how many registered pharmacists there actually are and how this number compares with the total number of pharmacies, hospitals of more than twenty-five beds' capacity and with the total population.

The excellent statistical study on the number of drug stores and the relation to populations of the various states, etc., by W. F. Rudd,[2] presented at the last meeting of the American Pharmaceutical Association, covered this phase of the subject in a very thorough manner.

The writer has used the figures for 1923, as they are the most recent and thorough statistics available which will permit a reasonably accurate comparative study of value. It was ascertained that thirty of the states have annual registrations which makes their data of the most value, three states have bi-annual registration, one has tri-annual registration, seven have no periodic registration and eight did not publish sufficient data to be of much value in this study. The data secured from various sources is given in Table I, colums 1, 2, 3, 4, 8 and 9; columns 5 and 6 present data calculated from this by the writer.

An attempt was made to learn the average number of registered pharmacists employed in pharmacies, from persons much interested in State in the East. As the replies stated that no such tabulation had been attempted or was possible with present data the writer tabulated a series of stores with which he is personally acquainted and decided that an average of one and a half per store is a conservative figure to use in determining the number of registered pharmacists employed in the retail drug trade. The figures given in column five were obtained by multiplying the number of drug stores in each state by this factor. Subtracting these from the total numbers of resident pharmacists in each state gave the figures tabulated in column six. It will be noted that ten of the states show negative numbers.

As it is necessary to be reasonably sure of the accuracy of the data used if results are to be of any value, the writer scrutinized the published

* Read before Section on Practical Pharmacy and Dispensing, A. Ph. A., Des Moines meeting, 1925.

[1] Pathologist, Somerset Hospital, Somerville, N. J.

[2] W. F. Rudd, *Jour. A. Ph. A.*, p. 1153 (December, 1924).

data very carefully and concluded that much of it is more of a rough guess than an actual careful statistical tabulation, especially the data given in columns two and three. Columns one and four are probably correct. The hospital data is the result of a careful census.[1] The tabulation of the total number and the division into non-resident and resident pharmacists not being given by New Jersey, the writer, possessing a copy of the directory issued by the New Jersey State Board under date of January, 1924, compiled these statistics. The results are found on line 32 of Table I.

In studying the published figures those for Idaho, Missouri, Wyoming and New Hampshire seemed to be the results of very careful mathematical tabulation. These figures therefore were used with those from New Jersey to obtain an average figure for the percentage of total who are non-residents of the states. As these states were well distributed they were very good for this purpose. The result is an average of 31.4 per cent, as shown in Table II. It is desirable to have approximately correct figures for this as otherwise the statistics will be very much padded and show more than 20,000 more registered pharmacists than there actually are. As an example, the writer being registered in three states appears three times in the list. As the majority of non-resident pharmacists are registered in the state where they reside, deducting the non-resident numbers from the totals will give the approximately correct number of registered pharmacists in the United States. To test the validity of this average percentage factor all of the first thirty-four States' total figures for registered pharmacists were used to calculate the probable number of non-resident pharmacists in each state. To permit a ready comparison the published figures also are given, in Table III. It will be noted at once that the figures published by the states having the lesser numbers of pharmacists, in most instances, compare favorably with the average figure while those states with many thousands of registered pharmacists on their lists present figures which suggest a guess at the number of non-residents. As the writer believed that the figures obtained in Table III will come nearer being correct than those in Table I, he has used the former for the purpose of this study.

Total Number of Registered Pharmacists

Using the totals so obtained in the states publishing complete data as a basis by the rule of three a fairly accurate estimate can be made of the total number of persons actually registered.

Total number of resident pharmacists in the 34 tabulated states...	48,705
Total number of drug stores in these states.....	32,518
Total number of drug stores in the rest of the states.....	20,452

48,705 : 32,518 : : X : 20,452; X equals 30,633 in the states 35 to 49. 48,705 plus 30,633 gives 79,338 as the total number of persons holding registered pharmacist certificates, an average of 1.497 per drug store.

[1] By Council of Medical Education and Hospitals, *Jour. A. M. A.*, V. 82 (January 12, 1924).

Comparison of Available Registered Pharmacists and Drug Stores in the Various States

The figures obtained would tend to show that many states have scarcely more registered pharmacists than there are drug stores. Some actually have less. Considering the hours that the majority of stores are open, this would suggest that either the registered pharmacists are employed too many hours for the maintenance of their health or to conserve the best interests of society, or that many are very poorly manned. It certainly tends to show that the hospitals in these states cannot be making strong demands upon the supply of pharmacists.

Comparison of Hospitals to Supply of Registered Pharmacists

By the conservative figures of the Council on Medical Education and Hospitals, we find the following:

Total number of hospitals of 25 or more bed capacity	4,006
Total number of patients—average per day	528,686
Average number of patients per hospital per day	132

Any one who has had experience in a hospital where pharmacy is actually practiced will be quite willing to admit that this average number of patients will not leave much time for loafing. Where there is also a busy clinic a hospital of that size would require at least two pharmacists. In the hospital in which the writer in past years was a pharmacist, with an average housing of about 160 patients and a busy clinic, it took all of the time of three registered men and a porter to give good service.

If to this group of 4,006 hospitals which, if properly served pharmaceutically, should require at least 5,000 pharmacists we add the total numbers of registered men who are not engaged or available by reasons of other forms of employment, it does not look as if there was an excess of registered pharmacists in the very recent year 1923. Pharmacists not available would include all holding certificates but retired, engaged in teaching, in the U. S. Army, Navy or Public Health Service, all engaged in the pharmaceutical, chemical and other lines of manufacturing, in other retail or wholesale business, and those holding certificates but now practicing medicine or engaged in laboratory activities.

Remarks

In selecting statistics for the preceding study the writer took the figures of the Council on Medical Education and Hospitals of the American Medical Association because they are the most conservative and take in only institutions relative to which there can be no question of the propriety of adequate pharmaceutical supervision. This tabulation was considered more satisfactory than that of the "Modern Hospital" or of the United States Public Health Service as these include sanatoriums and hospitals for nervous and mental diseases. The total number of hospitals by the American Medical Association classification is 6,830. The United States Public Health Service census figures for 1922, including

sanatoria and institutions for the mentally diseased, feeble minded and epileptic, are 11,522.

As the care for the last three types of patients is now as much of a medical as a housing and segregating proposition, most of these could properly be classed with institutions requiring the services of pharmacists for the proper discharge of their obligations to the public.

The writer wishes, before summarizing, to acknowledge the assistance of the Director of the Hospital Library and Service Bureau in furnishing the data on hospitals and to Secretary H. C. Christensen, of the National Association of Boards of Pharmacy, who furnished the writer with a copy of the data compiled by E. L. Newcomb, published in the *Northwestern Druggist*, September, 1923, and for the data on which was based the arrangement of the states on the basis of intervals of registration.

Summary and Conclusions

Data is presented showing that there were about 79,338 persons in the United States registered as pharmacists—an average of 1.497 for each of the 52,970 drug stores. Deducting those engaged in other lines of activity will greatly reduce this average number.

Considering the hours that the average drug store is open to serve the public, it would appear that the average pharmacist either spends too many hours at his vocation or that many of the drug stores in the United States are not at all times under the supervision of registered pharmacists.

It is evident from the statistics that many of the hospitals cannot be employing registered pharmacists. The hospitals of the United States for the proper discharge of their obligations would require the services of more than 5,000 pharmacists.

The data presented in this paper show, if the number of drug stores is not excessive, that the supply of registered pharmacists is not excessive, which is significant when we compare this with the large classes at our colleges.

It was deemed unnecessary for the purposes of this paper to compare the number of registered pharmacists with the population of the states as this can readily be done if desired by using these data and those of the article by W. F. Rudd.

The proper manning of hospitals pharmaceutically will aid in advancing the professional status of pharmacy as it has that of medicine, dentistry and nursing, and will benefit the profession in general as well as the public by proper pharmaceutical service where it is of educational value to both the medical profession and to pharmacy.

TABLE I.—STATES WITH ANNUAL REGISTRATION.

	State	Registered Pharmacists. Totals.	Non-resident.	Resident.	Stores.	Reg. pharm. employed ×1.5.	Hospitals 25 or more beds. Excess.		Bed capacity.	Daily average patients.
1	Alabama	1,045	155[a]	890[a]	675	1,012	—122	47	6,161	4,265
2	Arizona	415	100	315	125	187	128	35	3,262	2,224
3	Arkansas	1,000	300	700	1,000	1,500	—800	37	4,832	3,490
4	California	8,200	100	8,100	2,750	4,135	3,965	219	36,231	26,391
5	Colorado	1,960	300	1,660	950	1,425	235	63	10,902	7,861
6	Connecticut	1,375	150	1,225	640	960	265	55	11,596	9,460
7	Florida	1,022	400	822	646	969	—147	9	1,063	783
8	Idaho	684	252	432	290	435	— 3	21	2,172	1,575
9	Illinois	6,000	500	5,500	3,000	4,500	1,000	270	50,678	31,463
10	Indiana	3,964	200	3,764	1,418	2,127	1,637	97	17,018	12,481
11	Iowa	4,500	500	4,000	2,200	3,300	700	103	14,882	11,457
12	Kansas	2,150	250	1,900	1,600	2,400	—500	73	9,743	7,417
13	Kentucky	1,850	275[a]	1,575[a]	860	1,290	285	62	10,237	7,829
14	Louisiana	1,840	200	1,640	862	1,293	347	44	8,745	6,984
15	Minnesota	2,150	400	1,750	1,050	1,575	175	113	19,843	15,268
16	Missouri	5,185	1,556	3,629	2,238	3,357	272	119	20,909	16,821
17	Montana	687	300	387	320	480	—160	40	4,181	2,803
18	Nebraska	2,000	100	1,900	906	1,359	541	50	7,043	5,455
19	New Mexico	833	500	333	110	162	171	31	3,401	2,439
20	North Carolina	1,000	15	985	802	1,203	—218	88	10,129	6,798
21	North Dakota	625	150	475	350	525	— 50	29	3,395	2,565
22	Oklahoma	2,900	700	2,200	1,239	1,858	342	53	6,332	4,626
23	Oregon	1,400	300	1,100	470	705	395	45	6,886	5,756
24	South Carolina	1,000	150	850	500	750	100	34	6,018	4,048
25	South Dakota	600	250	350	450	675	—225	33	4,045	2,273
26	Tennessee	1,550	230[a]	1,320[a]	800	1,200	120	56	9,077	6,329
27	Utah	376	56[a]	320[a]	121	181	139	11	1,817	1,295
28	Virginia	1,278	200	1,078	736	1,104	— 26	73	12,861	9,227
29	Wisconsin	2,150	215	2,035	1,050	1,575	460	151	19,539	15,083
30	Wyoming	220	75	145	145	202	57	16	1,517	956
	Totals	59,959	8,879	51,080	28,293	40,464	9,083	2,077	324,665	235,422
	States with Bi-annual Registration.									
31	New Hampshire	503	143	360	221	331	39	29	4,452	3,460
32	New Jersey	3,658[b]	1,014[b]	2,644[b]	1,442	2,165	481	124	22,756	17,021
33	Vermont	450	67[a]	383[a]	162	243	140	20	2,353	1,862
	Totals	4,611	1,224	3,387	1,825	2,737	660	173	29,561	22,343
	State with Tri-annual Registration.									
34	Ohio	4,500	150	4,350	2,400	3,600	750	171	36,365	25,277
	States Having No Periodic Renewal of Registration or Publishing Incomplete Data.									
35	District of Columbia	500	300	200	250	...	...	22	9,157	7,001
36	Maryland	1,000	...	...	550	...	...	75	14,302	10,357
37	Massachusetts	2,800	...	...	1,804	...	...	191	41,493	33,744
38	Michigan	4,627	...	...	1,981	...	...	114	21,232	15,853
39	Mississippi	1,100	...	...	634	...	...	41	6,190	4,229
40	New York	15,000	...	...	5,487	...	...	448	111,010	85,714
41	Pennsylvania	6,000	...	...	3,740	...	...	309	61,162	47,200
	Totals	31,027	...	...	14,446	...	...	1,200	264,546	204,098

[a]—Calculated by average of all other stated figures. [b]—Tabulated by author from the directory issued by the New Jersey State Board of Pharmacy under date of January 1924.

42	Delaware	...	...	...	110	...	...	9	1,063	783
43	Georgia	...	...	...	1,095	...	...	57	9,074	7,121
44	Maine	...	...	...	395	...	...	40	5,028	3,885
45	Nevada	...	...	...	46	...	...	9	580	304
46	Rhode Island	...	...	...	324	...	...	25	5,507	3,563
47	Texas	...	...	...	2,927	...	...	117	17,307	12,384
48	Washington	...	...	...	690	...	...	77	11,587	8,549
49	West Virginia	...	...	...	419	...	...	51	7,129	4,956
	Totals	?	?	?	6,006	?	?	385	57,275	41,545

TABLE II.—SHOWING THE PERCENTAGE OF THE TOTAL NUMBER OF REGISTERED PHARMACISTS WHO ARE NON-RESIDENTS OF THE STATE.

State.	Idaho.	Missouri.	Wyoming.	New Hampshire.	New Jersey.	Average.
Percentage of total	36.8	30.0	34.0	28.4	27.7	31.4

TABLE III.—SAME STATES AS IN TABLE I FROM 1 TO 34 WITH NON-RESIDENT REGISTERED PHARMACISTS CALCULATED WITH AVERAGE PERCENTAGE FROM TABLE II. FIGURES FROM TABLE I ARE GIVEN FOR COMPARISON.

	State.	Non-resident. Table I.	Non-resident. Calculated.	Resident.		State	Non-resident. Table I.	Non-resident. Calculated.	Resident.
1	Alabama	...	328	717	18	Nebraska	100	628	1,372
2	Arizona	100	130	285	19	New Mexico	500	262	571
3	Arkansas	300	314	686	20	North Carolina	15	314	686
4	California	100	2,575	5,625	21	North Dakota	150	190	429
5	Colorado	300	615	1,345	22	Oklahoma	700	911	1,989
6	Connecticut	150	432	943	23	Oregon	300	440	960
7	Florida	400	321	822	24	South Carolina	150	314	686
8	Idaho	252	(215)	(432)	25	South Dakota	250	188	412
9	Illinois	500	1,884	4,116	26	Tennessee	...	487	1,063
10	Indiana	200	1,245	2,719	27	Utah	...	118	258
11	Iowa	500	1,413	3,087	28	Virginia	200	401	877
12	Kansas	250	675	1,475	29	Wisconsin	215	675	1,475
13	Kentucky	...	581	1,269	30	Wyoming	75	(69)	(145)
14	Louisiana	200	578	1,262	31	New Hampshire	143	(158)	(360)
15	Minnesota	400	675	1,475	32	New Jersey	...	(1,014)	(3,658)
16	Missouri	1,556	(1,628)	(3,629)	33	Vermont	...	141	309
17	Montana	300	216	471	34	Ohio	150	1,413	3,087
						Totals		21,525	48,705

Where parentheses are used the original figures were employed in total summary.

AS OTHERS SEE US

"O wad some power the giftie gie us
To see oursel's as others see us
It wad frae monie a blunder free us
And foolish notion."

So sang the bard of bonnie Scotland. And the "giftie" comes to us now through the medium of the *Philadelphia Public Ledger,* holding in front of us the editorial mirror so that we can peer in and see our true reflection.

And this is what we see:

ALAS, POOR DRUGGIST!

And now a speaker before the sixteenth annual convention of the California Pharmaceutical Association stands on the platform and delivers himself of the following sentiment: "Every man who lays claim to any class at all has his pet shade of face powder, his particular fragrance of toilet water, his favorite shaving soap and his distinctive preference in nail polish. The up-to-date man seeks to make himself just as attractive to women as they are supposed to strive to make themselves to men. Druggists must recognize the fact that men now consitute a great and rapidly growing percentage of the patrons of the toilet articles, and they must make greater efforts to accommodate that class of patronage."

Time was when the life of a druggist might have been considered a happy one. That was in the balmy and beneficent days of a simpler era. In those days a druggist simply had to compound prescriptions and sell some uncomplicated drugs of common household usage. He could afford to sit outside his store half the afternoon on pleasant days and dispense wisdom to his neighbors. But those sweetly idyllic days are o'er.

The druggist was forced by evolution of business practice to become a merchant of parts. His day of peace ended when he abandoned the colored lights in his window and added fly-paper to his stock of medicines. He has been adding things ever since. It is long since drugs made a druggist. Nowadays it is note-paper, children's puzzles and safety razors. He watches the once tentative soda fountain grow into a busy quick-lunch counter and the erstwhile speculative pile of Robinson's Family Almanack metamorphosize itself into a magazine and book stand, with a case of fountain pens as an appendix; and as he watches he must regret the days he spent getting his degree of doctor of pharmacy that might have been spent more profitably in a business college.

Of course, he has the satisfaction of knowing that he fills a more active and conspicuous place in the scheme of civilization than he ever did before. But his satisfaction must be tinged with regret over his ever-increasing responsibilities. And now there is this latest burden. The gentleman from California informs him that hereafter he must help bear the burden of "every man who lays claim to any class at all." And there are so many men who lay claim to class, even if it be so little, as to be called any at all. With his other cares the druggist must now assume that of chaperoning their development of class consciousness. He must guide them in the proper adjustments of their reactions to the fragrance of various toilet waters. He must help them to cultivate a nice taste in nail polish. If they go wrong on the shade of their face powder, his the blame!

Verily, the march of progress lays a heavy hand upon us. And here is a new item, this discovery that the male of human-kind has set out to emulate the peacock by making itself attractive to the female of the species with the aid of toilet water, face powder, nail polish and the more subtly seductive varieties of shaving soap. Alas, poor druggist!

The vision ends. The reflection vanishes.

But we are not conscious after all that we have looked at ourselves. Comes to us the recollection of a seashore trip, when, at that resort, we looked into a crooked mirror and we saw a crooked man, and, although we knew that the crooked man had on our clothes and a personality that, bereft of its distortions, might have looked our very part—still

we knew in our heart that this figure in the mirror did not do us justice at all and was but the fun-provoking contortion of a perverted mirror. It produced an earnest laugh, but we promptly sauntered away from that mirror, forgiving it and aiming to forget it, but clandestinely keeping an eye to windward searching for an honest mirror so that we might convince ourselves that we were not so foolish looking after all.

Indeed, then, we are indebted to the columns of the *Ledger* for holding before us a fantastic mirror that provides us with an earnest laugh. At the same time we do grant that it portrays part of our anatomical landscape with perfect verity.

But there is a greater charm in the story of another mirror, and we take liberties in recording its picture:

[1]The learned looking, long faced apothecary of other days, with his round skull cap of ancient black, and the frayed coat of ill-dyed mohair, is no longer with us. The scantily windowed emporium where his highness the apothecary held court among his herbs and simples and the gaudy pots of cerates and unguents, is but a retrospective vision, and while we can quite comfortably conjure up nice things to say about the venerable old institution and its occupant, none of us in a sense regrets the passing away of them. The evolution which came with the racing years saw the dusty but respectable old apothecary changed into the dapper business-like pharmacist who, at our street corner, cheerfully supplies our every want, in his and many other lines. The dustier emporium where the accumulated odors of old and evil smelling herbs long offended our finer sensibilities has been supplanted by the broad windowed and well ventilated business establishment where the olfactory equipment of the most delicate patron is never offended except when an occasional prescriber persists in exploiting the foul valerianate.

With this mutation, however, came of necessity a complementary change and a change that is not to the liking of any of us. The apothecary of other years, in spite of his murkiness and dust, cherished in his heart ideals that reflected much credit on his profession. He was often a keen student, a wide reader, and a clever experimenter, and quite conscious of his importance as the physician's co-worker and assistant in the altruistic task of curing the ills of the people.

The pills that he dispensed in their neat turned wooden containers were his own handiwork. He fashioned them with his own fingers and knew with considerable exactness just what they contained and precisely how much of each ingredient. The plaster which he handed to his patron was likewise a product of his establishment. Evenly spread on a piece of fine chamois or flannel and carefully cut with his own deft hands it possessed virtues that no factory made plaster, no matter how pleasing to the eye, can ever hope to possess. His unguents and cerates were especially his pride and his repository of these smooth and gritless articles of medical ware held a prominent place in his emporium. The containers, gaudy in blue and gold and neatly arranged in even shouldered rows like a street of mosques or minarets, blazoned forth the story of his eternal care in all things that really pertained to the professional side of his make-up.

Today, however, the rolling of real pills is almost an Egyptian art, and the novice on the staff of the pharmacy wonders whether the pill machine is an instrument of torture or some forbidden gambling device. The excipient bottle hides behind a bottle of aspirin tablets and the

[1] A former contribution by the Editor to another drug journal.

althæa container complains of inertia. The plaster machine, perforator and cutter, rusty and forlorn looking, repose in the cellar with the rest of the questionable junk, those things which we expect to discard tomorrow, the tomorrow that never comes. The lettered ointment pots still remain, but bereft of their former glory and their contents can no longer proclaim the glory of the magister's handiwork, for they are but part of a fifty pound batch from the ointment factory.

The pills in the modern pharmacy, the thousand odd varieties in their riot of colorful trappings, all come from some pill factory or other where giddy machinery turns them out by the millions, even-shaped and uniform in size. They lack the personality of the old hand made soft mass pill of the apothecary that even before Bertillon's days often exhibited very distinct digital prints. What they lack in personality they may discount in cleanliness. But we still persist in the belief that in therapeutic efficacy the pills of the old apothecary far excel the fossilized, petrified pills dispensed today in many a store and many a doctor's office. Those hand made plasters that we know no more are displaced by the neat gauze covered plasters made by the mile and sold by the yard. And other, many other, things that the old apothecary loved to prepare with his own hands are now made in the factory and doled out in portions to the purchasing druggist.

Thus the work of the apothecary has gone out of his hands and he is now in the main but a jobber of other people's manufactures. Many persons today say that the pharmacist as such has no real reason for existence as a professional man; that the commercial phase of his make-up has of necessity and quite naturally overwhelmed or eclipsed the professional side of his calling, and the grocer and hardware dealer have as much right as the pharmacist to be deemed professional. There is quite some reason for persons holding this viewpoint. Many drug stores are ridding themselves of their prescription practice because they find selling talking machines more *profitable*, and since profit is all that the philosopher's stone means for some people—that is a wise thing for them to do. Other drug stores for all the real prescription service that they can furnish might serve the public *better* by selling more talking machines and compounding fewer prescriptions.

There is no one to blame for these changes. They have come to us simply as a natural course of events. Pharmacy cannot say that her birthright has been craftily taken away from her. Nor can we say that the change has been due to negligence on the part of the individual pharmacist. Indeed, with the rapid and marked changes that have come his way it is surprising that things remain as well as they do.

We have spoken of yesterday and of today, but what does tomorrow hold for us? If the pessimist among us can dwell on the lost art and the passing away of the profession, can the optimist see in tomorrow a promise of a return of the heritage and a rehabilitation of the calling? Shall we go on as vendors of ready made medicines, and as commercial, public serving institutions on a par with the corner grocery or delicatessen, or are there hopes of more opportunities for the pharmacist to offer real professional service? That is the question.

And it is a question that is difficult to answer even in an approximately correct fashion. In truth ninety per cent of our retail pharmacists, in spite of their inherent desire to be considered members of a profession, are *disinterested* and meekly accept a tradesman's mode of making a living. And this is in a sense humanly natural. It is almost inconceivable that they can, under existing conditions, aspire to anything higher than or different from what they are doing. They intimate that the greatest portion of the agitation which constantly demands the attention of the calling is fostered by persons who are in a sense outside the

realm of the calling itself. The college professors and State Board members are stated by them to be responsible for the gossiping and mischief making that often bid fair to disturb the harmony of the inner circle of the pharmacy and to eventually cause the divorce of the professional from the commercial side of the calling.

Asks the corner druggist "why on earth the need for all this disturbance? There is nothing wrong at all in harmonizing the business phase with the professional end of my life work. I can compound prescriptions quite as accurately and at the same time enhance my picayune professional receipts by collecting commissions on the sale of a Victrola." And the citizenry has been taught to understand things according to his light. The lay person will cheerfully listen to a selection of records while waiting to have his prescription filled even though he appreciates that it is a long way from selling a talking machine to compounding a prescription. The same person would steer very clear of a doctor who would listen to his heart sounds and at the same time try to sell him an automobile.

In other words, the public has been improperly guided to the illusion that the diversified features of the pharmacist's business in no way impair his usefulness as a man who in his spare moments can offer a little professional service in the way of compounding a prescription or two. And without being unduly pessimistic we often feel that it is this apathy exhibited by the public mind that has helped to demoralize pharmacy. It is only when the public is disillusioned and taught again to demand real professional service from the pharmacist that pharmacy will come into its own. And how can the public obtain this new impression of the service that can be offered by the new pharmacist? As we see it—only after the pharmacist is properly equipped to offer this type of professional service—and this equipment consists of a liberal education, and the capacity to serve.

There never has been a time more fortunate than the present for pharmacy to assert itself and to proclaim its real and tangible claim and ability to render truly professional service. The art of medicine is rapidly attaining the heights of true science and the time is long past when the "handmaiden" of medicine had nothing else in her code of duties but the compounding and dispensing of medicine. The scope of true pharmaceutical service has considerably broadened and the prescription department will not be the only herald of professionalism in the pharmacy of tomorrow. There are opportunities, even if not boundless, for offering clinical service. The new pharmacist shall and must be so trained that he can offer the physician this high type of service.

The natural recoil which wise men long ago predicted has come and physicians do not place as much reliance today upon purple pills and tasteless tablets as they did a decade ago. The experience of years has taught them that the old fashioned recipe, freshly concocted and properly prepared, has much in point of advantage over factory made compressed medicines. The world war period also has changed many dispensers into prescribers, who found it more economical to let the pharmacist buy when the prices of drug substances climbed to such dizzy heights and many of these war made prescribers will continue in their more pleasant and less costly habits for some time.

Botanical drugs are rapidly pushing to the front again, and the old school which taught "that there is a plant in Nature's garden for every human ill" is re-establishing its grip on the physician's mind.

With these facts in mind there comes to us mentally a picture of what we choose to term the new pharmacy.

To the general public this pharmacy will offer such articles as are legitimate drug store products—sickroom equipment, spices, crude drugs,

toilet preparations and perfumes, official preparations and household medicines. It will leave the coffee and tea to the grocer, the cigars and cigarettes to the corner cigar store, the soda fountain and candy to the confectioner. To the physician it will offer clinical service, diagnostic tests such as blood counts, biochemic analyses, bacteriologic procedures, vaccine and bacterin preparations, urinalyses, water analyses, sputum and smear examinations, complement fixation tests and all such items of clinical work.

The pharmacy can well be the place where the physician can obtain information concerning new and rare articles of materia medica as well as a supply of the articles themselves. The library of the pharmacy shall be comprehensive and at the service of the physician. The well trained pharmacist can readily by these means become the confidant of both the physician and patient and will earn the respect of both. The prescription department will be modern in every respect and supplied with nothing but the highest grade of drugs and medicines. Its personnel shall be intelligent and painstakingly careful, its equipment up to date, and its conduct immaculately clean and correct. There will be no counter prescribing, and the complementary evil—dispensing by the physician—will naturally subside and probably be a negligible factor of competition.

It may be only the Arcadian pharmacy that will conform to all the foregoing stipulations—but Arcadia was never closer to us than it is now.

The recrudescence and rehabilitation of the profession of pharmacy will be made certain only if standards and instruments of education are elevated to such a scale as to insure for the conduct of these several professional duties men who are completely fitted by training to their respective parts. The divorce of the commercial from the professional will come then as a matter of course. The writing on the wall has it that the ninety per cent commercial and ten per cent professional drug store shall inevitably pass away and its professional duties be absorbed by the new and ethical pharmacy.

The new pharmacy managed by the new pharmacist is to re-establish itself as a serious, legitimate and altruistic profession, and the sooner it comes the better it will be for everyone concerned, the physician, the laity and the pharmacist.

And the story of this mirror is no illusion.

I. G.

WHAT PRICE PROGRESS?

(Continued)

THE STAKE OF THE INVESTOR IN THE DEVELOPMENT OF CHEMISTRY

By Hugh Farrell, *Financial Editor, New York Commercial*

NUMBER FIVE

Iron, Copper and Aluminum

Before attempting to outline to you some of the developments affecting your investment that are forcing or that will force changes in the great steel business, let me repeat that science is revolutionizing all industry.

In some instances entire industries are undergoing rapid changes; in others the readjustments are more evolutionary than revolutionary, but there is hardly an important long established industry that is not in process of changing its nature. This applies to steel, oil, coal and most of the other basic industries.

Several factors confronting the steel industry appear to have the necessary force behind them to cause radical changes if not revolution in the industry. These range from the introduction of competitive products to fundamental changes in processing and the discovery of methods for preserving steel and iron through the prevention of rust. The last alone is revolutionary enough for ordinary purposes.

As man changes from dust to dust, iron changes from rust to rust. Iron rusts partly because it has a strong affinity for oxygen. You, perhaps, never saw pure iron—few people have. It is not found in nature except in the form of meteorites—all the iron we mine is oxidized—rusted. And after we mine and refine it iron rusts again and we lose it. Estimates of the total annual loss of iron and steel through corrosion and erosion have been placed as high as 25,000,000 tons, or a tonnage equal to one-third of the present yearly production.

This waste is greater than all other industrial waste combined, and that is the reason that it is being attacked with greater vigor than most any other problem connected with the production and use of steel. If iron and steel could be made that would not rust or corrode the world would start upon a new era.

This problem has been attacked by consumers, freelance scientists and some producers of steel. At first glance, in the face of the certainty that it would destroy a large part of his market, it would seem foolish for the steel producer to attempt to discover a non-rusting steel.

The explanation of the steel maker's willingness to co-operate in the destruction of a part of his market is twofold: the little steel maker is willing to produce steel that will command a market "now" and the big steel maker is willing to help solve the problem because he knows that the saving effected will provide the capital necessary for the development of new uses for steel.

However, the problem of rustless steel is still an unsolved one so far as the cheaper grades are concerned, although, now that the chemists have practically agreed upon a theory of the cause of corrosion or rust, a solution cannot be far away.

In the meantime the situation is being improved by the manufacture of better steel—the bessemer process, which is rapid and cheap so far as first costs are concerned, is being supplanted by the open-hearth and the electric furnace processes, both of which turn out a better product in every respect; a product less susceptible to rust, more susceptible to control and which, therefore, can be made purer.

This turning towards a better product by the steel industry is not wholly voluntary. There are two reasons for it—the development of alloys and high-grade steels by competitors and the growth of scientific

means of analyzing and testing products. The modern steel consumer has scientific means by which he can detect flaws in steel with weird accuracy, and the product must improve or give way to a substitute. His methods of analysis enable the consumer, who has the proper scientific guidance, to specify just the kind of steel he wants for a given purpose and it then is up to the steel maker to produce it.

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As yet few customers are using these methods, but as time goes on they will come into general use and then the steel maker who knows the most about scientific metallurgy will get the business and the profits. The English, the Germans, the French, the Scandinavians, all nationalities are doing more in the fundamental research upon which the metallurgy of the future will rest than we are doing or proposing to do.

This is a fact of great importance not only to the investor, but to the ordinary citizen who is interested in the security and welfare of his country. In a small way we have been following some of the developments that were initiated in Europe, but we have not participated in the pioneering which is essential if we are to keep abreast of scientific progress in the world, and continue able to defend and maintain the advantages which nature and our native energy have conferred upon us.

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As a tool for testing and analysis the X-ray perhaps represents the most revolutionary factor in the present situation in metallurgy. Alloys with other metals than iron as their base have been produced and are being applied with increasing frequency as substitutes for steel and iron, but the real revolution in the steel and iron industry will come from within, and it seems that the X-ray will be the instrument that forces it.

An aluminum alloy that is advertised to be "As strong as steel and as light as aluminum" is supplanting steel as well as other materials in various fields, that of aeronautics in particular, but while aluminum is plentiful in clays and in other forms, its extraction is still a relatively expensive operation, and it therefore carries no present threat as a competitor of iron. Most of the other alloys are steel or iron alloys and simply represent developments of certain properties in steel itself.

In the aggregate, however, the use of alloys is becoming an important factor in the competition for steel markets, and as more users learn to specify the materials that are best suited for their purposes this competition will become keener. Steel alloys are being used more and more in the manufacture of automobile, machinery, tools, ship propellers and in special services, and even in the construction of bridges.

The X-ray machine is the revolutionary factor of the most importance because it is used both in finding the defects in steel and iron and in showing the way to make better steel.

As a defect finder the X-ray promises to be as important as an accelerator of progress as it is in crystal analysis. When used for this purpose the X-ray reveals defects in iron and steel to the depth of three

or four inches, and larger machines which are in contemplation are expected to increase the depth of the penetration. This application of the X-ray machine has been developed at the Watertown Arsenal.

Installations such as that at the Watertown Arsenal are estimated to cost about $10,000, and at that cost the X-ray promises to become a testing tool of steel makers and users alike. It is not hard to imagine what the result will be in the direction of improvement in steel.

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Next to corrosion (rust) the phenomenon known as "fatigue" is the most common associated with limitations upon the longevity of steel. Through crystal analysis with the X-ray, it is claimed that the exact point at which overloading begins can be detected, and this means that in the future those who have the facilities for such analysis will take care not to overload, and that means that more steel will have an increased span of life. These analyses also reveal the arrangements of the crystals at various stages of heat treatment, and indicate the point at which the product is at its best.

At the same time that the necessity for making better steel is becoming so pressing, the scientist offers a means for reducing production costs through using a blast of pure oxygen instead of the mixed air that is now used in furnaces. This method, which has been tentatively approved by a committee of metallurgical engineers, produces more iron per unit and at a less cost, the saving being in the fuel. Improvement in the quality of the iron is also claimed for this method. The possibilities involved are revolutionary not only for iron making, but for other industries, including coke and the manufacture of gas for domestic and industrial use. It is even suggested that iron may become a "by-product."

Another development which has revolutionary possibilities is the direct production of cast iron from the ore by the electrolytic method. Cast iron pipe has been made directly from the ore in this way.

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Copper and some of the metals which are usually found with it like to float on oil and after the ore is crushed in the mills copper will go into suspension in a bath and can then be collected as a high concentrate and sent on for further treatment in the furnaces or in the electrolyzing apparatus, which is also now commonly used in the refining and treatment of copper.

Years ago, when American copper ores carried 10 or 12 per cent copper, the profitable operation of a copper mining property was a relatively simple matter. Today American ores generally run below 2 per cent copper and the extraction, at a profit, of this small quantity—about 40 pounds to a ton of ore—calls for the application of the best managerial skill that the country affords.

The fact that the copper industry has been among those which have been first to apply the methods of science is, therefore, easily explained —able managers do not scoff at science; they use it.

More copper is being consumed today than ever before in the history of the world, the radio industry, which was only born yesterday, is using millions of pounds; the automobile industry hundreds of millions—about 200,000,000 a year to be more exact—and the older copper-using industries around a billion pounds a year. The production of copper is, nevertheless, running ahead of consumption.

The ability of the copper producers to meet and keep ahead of the enormous increase in the demand for copper is directly attributable to application of science to the industry, to the use of chemical, physical and electro-chemical engineering in the extraction and refining of metals taken from ores of decreasing richness.

The copper producer is not threatened by a loss of his market to a substitute product—copper has but one rival in its field on merit and no rival at all in point of cheapness. Tungsten would supplant copper tomorrow if there were enough of it available, but there isn't. It might also supplant steel but for the same handicap. Tungsten is the king of metals—it can be drawn to a fineness that is hardly visible to the eye and at the same time retain strength equal to copper ten times its size. Neither is there any danger of copper being synthesized—at least not until the chemists find a way to break up the atom. Copper is an element; that is, pure copper is. Elements cannot be manufactured in the laboratory—yet.

The problem before the producer of American copper is that of extracting the maximum of copper from the complicated ores in which it is found and then raising it to a pure or nearly pure state at the lowest possible costs—at costs that will overcome the handicap under which he works in competition with South American and South African producers who are working richer ores.

Copper is usually found in ores which contain iron, gold, silver lead and sulphur, a great deal of sulphur.

The copper is the chief objective of the copper miner and refiner. He finds it difficult enough to get all the copper out of the ore without bothering too much with microscopic deposits of gold and silver, although he usually recovers as much of these metals as he can without making a business of it.

The oil flotation process is now in fairly common use and is rapidly displacing the old methods of separation. But the oil flotation process floats off gold and silver and some of the other elements in copper ores with the copper, and the refiner still has the problem of freeing his copper content to deal with.

A new process for doing this has been successfully employed in some operations. It is called "selective flotation," and it produces a much higher concentration of copper than the older process, giving more free copper, free silver and free gold in the initial operation. This higher

concentrate enables the producer to charge more copper into his furnace and results in a considerable reduction in equipment, fuel costs and other items of expense. A saving of a cent a pound may mean the difference between a dividend and no dividend, and it is usually the companies which are most alive to the latest developments in science that save the cent.

The copper industry proves the assertion that further progress in processing and increasing production with lower costs is dependent upon the chemist and physicist. The maximum in machine processing has been reached or is in sight. Further reductions in production costs must come through the elimination of industrial wastes and the improvement of the product. The day of quantity for the sake of quantity is over—this is the day of quality with quantity. The scientist shows the way to a better product for less money without impairment of volume.

The scientists working in the copper industry have already greatly increased production, made it possible to continue operations with low-grade ores. He is now working on the problem of purifying the ore, getting more copper and a larger share of the other metals, gold and silver, for the mine owner.

Science has also entered the field of the prospector and is locating new ore deposits. Electrical apparatus which is said to be infallible in the search for copper is being used in this and other countries. One mother lode bearing 7 per cent copper was located at 30 feet below the bed of a lake. This new instrument for the discovery of copper is likely to have a profound effect upon the industry—at the very least it means that the struggle for lower costs and the recovery of more and more of the precious metals in the ores must be maintained.

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Think of this: An average of the estimates made by machine tool experts fixes the saving in cost that would result from the replacement of shop equipment of the 1920 standard by 1925 models at 20 per cent.

Are American machine-tool-using industries generally equipped with 1925 model machines? They are not. Some plants are not even equipped with the relatively archaic 1920 models—more of them are using 1910 or even 1900 models. Industries equipped in this manner cannot charge their inability to compete to anything but their own neglect.

Simplification and standardization have contributed greatly to the reduction of cost in manufacture, these results having been attained by mechanical engineers who have produced "fool-proof" machines for practically every operation. A tool that will cut 300 feet in a minute is just ten times faster than a tool that cuts only 30 feet a minute, and when power goes into the job instead of turning the wheel at the tool there is a vast saving in fuel, labor, time and money. Harder, lighter and stronger metal alloys have made these things possible, and these alloys are the products of the chemist and the metallurgist.

Half or something more than half of the known elements are metal. They number about 50. From these about 1,600 alloys have been produced. If you like mathematics you can figure out how many combinations can be made from 50 elements. Of the 1,600 alloys that have been made only a few are important at the present stage of development. What the situation will be at the time this is printed I don't pretend to know.

Once I made the assertion that tungsten was the king of the metals. Well, tungsten has many sterling qualities, but it seems that in the meantime rich deposits of zirconium have been discovered, and since zirconium has practically all of the properties of tungsten and some additional ones, some modification of my former estimate of tungsten is in order. The subject of the alloys is a very touchy one. Each of the more important alloys has its little group of advocates, and it is not only difficult, it is also risky, to put your finger down and say, this is the alloy, that is, the best that has so far been produced.

As a matter of fact, very few of the alloys are really competitive with other alloys—each alloy that has been adopted into industry seems to fill a special need. The newer alloys, like the aluminum and magnesium alloys, are making some progress in the field formerly exclusively occupied by the older alloys, like bronze and brass, but these two alloys are taking on new life and promise to bob their hair, shorten their skirts and become as pert as any alloy.

Bronze is the prehistoric ancestor of all alloys. Bronze was an alloy when steel was nothing more than a red smut on the face of an African cliff. Our Celtic ancestors used to nick the blue paint on the manly chests of our Teutonic ancestors with the tip of bronze swords long before either of them ever knew there was such a thing as iron, even in their own blood.

Now I hear—I say I hear—that some European metallurgist or other—not an American—has produced a bronze alloy with a tensile strength of 90,000 pounds to the square inch. As the non-iron alloys go, that is some strength. On the average the aluminum alloys run below 30,000 pounds and cast iron runs to about 30,000 pounds. The steel alloys run considerably higher.

Chemists and metallurgists can do things in their laboratories that they cannot yet do on a commercial scale—freak alloys of aluminum and other metals have been made that run as high as 100,000 pounds to the square inch in tensile strength. A great deal more can be done with alloys by cold working and various other forms of intense treatment than it would pay to do on a commercial scale. But the history of advance in science shows that a thing that sells for $100 an ounce on Monday can be bought for ten cents a pound by Friday.

The successful alloys are falling into niches of their own. They are replacing the metals or older alloys that were used in the various niches before they came along, but some of them are making new niches and are leaving the older metals or alloys undisturbed. (These references

are modified with "or alloys" because nearly all metals in common use from twenty-dollar gold pieces to steel are alloys.)

In the non-iron group, the most successful alloy bases are aluminum, brass, bronze, nickel, magnesium, monel-metal and perhaps others, to which my attention will doubtless be called. Of these aluminum seems to be making the most headway and to have the most promise—it is even predicted that aluminum will some day take the place of iron and be the base of the metal alloy most commonly in use. There is not a great deal of difference between aluminum and iron, except melting point and a few other particulars that are not favorable to aluminum. As a lighter metal, aluminum has the advantage in many fields and is even now replacing iron and other metals in the fabrication of important parts in machinery and in the construction of automobiles, airplanes and the like. It is predicted that some day aluminum will supersede iron in the construction field.

Magnesium is a rival of aluminum, both in lightness and tensile strength, alloys of this metal having been produced that are superior to aluminum in both of these respects.

The prediction that aluminum will one day—sooner than you think—largely replace iron, is based on the fact that aluminum is about the most plentiful metal there is. It forms about 8 per cent of the crust of the earth and is found in practically all clays. The reason that aluminum has not been mined in greater quantities lies in the fact that its extraction is difficult, expensive and the best method for doing it is patented or was patented.

Dreams of great wealth and the sale of large blocks of worthless stock have been based on the belief and the claim that new methods for the reclamation of aluminum from common clay had been discovered. At last, it seems, this dream is about to come true. Swedish chemists are said to have discovered a method for extracting aluminum from clay that does not use the expensive Greenland clays that are necessary in the processes used in this country.

The Swedish method, it is claimed (I know nothing about the merits of the claim and if anybody tries to sell you any stock on the basis of the Swedish discovery you had better investigate before you invest), yields a high quality of aluminum at a cost about equivalent to the cost of the older process. In any case, the discovery of a cheap method for the extraction of the large quantities of aluminum that are in our common clays is only a matter of time.

Various metals are used in mixture with aluminum to produce the aluminum alloys. The effort to produce a satisfactory and universally valuable aluminum alloy is based on the belief that a cheap method of extraction will finally be discovered. Other metals which have superior qualities are not so interesting because they are not so common—this reverses the psychology of the usual.

In addition to the infinite number of combinations that are yet to be tried, the properties of alloys vary with working, heating, quenching and

a hundred other details in treating. What the properties of the final aluminum alloy will be nobody can foresee—it all depends on getting the right proportions of the right mixtures at the right heats and then in cooling at the right time. Some researcher in some obscure laboratory may hit the right combination tomorrow.

In the fight against corrosion (rust), the most promising iron alloy seems to be one that is composed of chromium, copper and iron. This is a relatively new alloy. It is not unduly expensive, it does the work of preserving iron and steel from rust of all kinds, particularly atmospheric and water rusts, and it promises to work a reasonably immediate revolution in iron and steel.

Tungsten, nickel, zirconium and other steel alloys fill special places, although nickel is used in alloys which have no iron in them. So are most of the other metals, for that matter. Tungsten is the cutting steel par excellence, but now that zirconium has been found in quantities it promises to rival tungsten in this field and in die making. Production costs could be reduced much more than 20 per cent if a metal could be found that would stand the heat that is used in the pressure process of die casting so that steel and the higher alloys could be die-cast. Even brass and bronze cannot be profitably die-cast and that is one of their handicaps in their competition with aluminum which can.

Die casting turns out a finished product in one operation, doing away with all the multitude of operations of punching, shaping, grinding, polishing and the like. Aluminum fronts for the mammouth buses which you see skimming over the roads to Boston and San Francisco have been cast from aluminum. These fronts weigh 200 pounds and are perhaps the heaviest aluminum castings that have been made. But for the fact that it would be hard to drive them out of the molds, entire bus bodies would be produced in this way. Zirconium may prove to be the metal that is needed for dies—and then, when automobile manufacturers begin to stamp out automobiles like cork makers stamp out corks, there won't be room on earth for all the automobiles.

Who is going to discover the means to the new mass production? Will he be a German, an Englishman, a Frenchman, a Japanese or an American? If he is an American, we'll have to do more research in the future than we have been doing in the past.

NUMBER SIX

Paint, Silk Stockings and Dynamite

As an investor you may feel that you have little interest in wood or its derivatives, either in the form of alcohol or silk stockings. But you can't tell about that. If your money is employed in the manufacture of cans, munitions, silk, cotton, gas, furniture, paper, paint, alcohol or just plain lumbering you are directly interested in wood, and what chemists and other scientists are doing or proposing to do with it.

Wood, like many other basic substances used in industry, has ramifications which reach into the most unexpected places. The poets couple wine and women with song, but you would not immediately couple silk stockings and alcohol with the trees in the park. But there is a connection.

The stockings are made of artificial silk and the alcohol is poisonous, but they come from trees, and so do dynamite and this paper in your hands.

Any material that produces all of these things, alcohol, paper for propaganda, silk stockings and dynamite, ought to be able to start a revolution every minute. But the fact is that while he has been moderately successful in revolutionizing one industry after another as a result of his researches into the nature and habits of wood, the chemist has as yet not succeeded in discovering the exact chemical nature of cellulose, the most important chemical constituent of wood, so revolutions are not coming as fast as they are likely to come after cellulose gives up all its secrets.

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It would take 300 years to restore some of the wood we are now using, but much of it can be restored in much shorter time. Revolution is impending in the paper industry, because chemists have succeeded in making newsprint paper out of wood that can be cultivated like corn or potatoes—not as rapidly, but just as fast as the paper mills located on these wood plantations can use up the last of the first crop and get back to the first of the next crop.

This process has not been placed in operation on a commercial scale as yet, but the paper has been produced on a semi-commercial scale and has been used in the printing of newspapers.

The methods now in use in the paper industry are extremely wasteful—that is, about all of the wood that is not cellulose floats off in waste liquor. According to some authorities the matter that goes off in this waste is not worth recovering, but others know better, and in view of the fact that wood distillation can, perhaps, be made to give almost as many by-products as coal distillation, those who say that actual waste goes on seem to have the best of it.

Chemists in the wood and paper industry are looking for methods of recovery and uses for this waste material. New processes for recovering the cellulose from wood which are less wasteful and less destructive in other ways are being adopted and the paper industry is in this way undergoing changes which are of great importance to its owners, the holders of the stocks and bonds of the various companies.

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You know what happened to the distillers of wood alcohol as a result of the discovery by the Germans of a method for synthesizing their product. The process has not been put into operation in this country as yet and it is probable that because of its importance to

the dye and other industries steps will be taken to protect the makers of wood alcohol against the competition of the German product, but if wood alcohol survives at all it will survive as a by-product. The industry is engaged in the manufacture of other wood products and I am informed that within certain price limits it can compete with similar products obtained as by-products in other industries. This industry is the sole important producer of metallurgical charcoal.

Perhaps the wood distillers are entitled to more sympathy in their predicament than they have been getting—the job of researching all there is to research about wood and its derivatives is possibly too big for an industry organized and constituted as the wood distillation industry is. Moreover, the work yet to be done in wood must be done in the field of fundamental research and even the bigger and more progressive industries are not doing anything worth mentioning in that field. Like everything else that is everybody's business, fundamental research is nobody's business, even the colleges neglect it.

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Cellulose is still more or less of a mystery to the chemist because it is so difficult to break it up. It is a compound and not an element, but it will go through the roughest sort of treatment without separating into its constituent elements. No rougher treatment could be administered to anything than is administered to cellulose in the process of paper making or in the manufacture of artificial silk, yet in both of these industries the cellulose may be and in some instances is recovered practically unchanged.

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The wood industry is responsible for more than one revolution, but few of whom have affected the industry itself; that is, they have not disturbed the main body of the industry, the construction field in which wood as lumber is used in house building, in the production of furniture and the like. The most important changes that have occurred in these fields have come from discoveries and innovations in other industries, from the competition of concrete and of steel furniture.

That the lumber industry has not greatly suffered because of the wider use of concrete or the introduction of steel furniture is due more to blind luck than to foresight. Without the most unbelievable growth in average wealth in this country which has doubled, trebled and quadrupled the demand for nearly everything, the lumber industry would have been forced ignominiously to retreat before the competition of concrete and steel, copper and various and sundry compositions.

The beauty of finish to which wood lends itself has helped it to hold its place in the manufacture of furniture and in the interior decoration of houses. But its supremacy in this field is now threatened. The chemist has developed a new substance which has properties that are superior to wood in particular phases of beauty of finish. This substance is known as bakelite, magramite and by other names. At present

it is being used in the field formerly mainly occupied by celluloid and other similar compositions, but it is more than probable that it will finally enter the fields of furniture and house decoration.

Bakelite is made of carbolic acid (phenol) and formaldehyde, intermediates of the distillation of coal and wood. The substance is one of the most remarkable science has evolved; in its solid phase it is both fireproof and insoluble. It is used in the manufacture of billiard balls, coral beads, bearings for automobiles and airplanes, fountain pens, pipestems, and a hundred and one other things including radio "panels." It can be dyed through and through in any color by a simple mixing of the dye with the substance in its liquid phase, or can be made partly transparent. Applied to wood, card board or other fixed bases it gives a hard surface that can be polished to lacquer-like finish. In this form bakelite is ideal for desk and table tops, interior woodwork, and for other similar uses. Its hardness is such as to defy ordinary "scratching" and as to require drilling for screw holes.

The revolutionary possibilities of bakelite and its kindred are not confined to wood; they extend into other phases, those of the metal alloys and the paints and finishes.

The manufacturers of these new substances are not inclined to press their claims too fast. As a matter of fact, they are rather inclined to minimize the possibilities of their products as revolutionary agents, being satisfied to occupy and command the novelty fields which they have pre-empted. Their modesty is not assumed. They believe that the high cost of bakelite and similar products will limit their application, but this view of the matter is not shared by experts in the field of the raw materials whose costs are expected to limit the use of bakelite. Combustion engineers who had perhaps feared the saturation of the markets for by-products of the distillation of coal, regard bakelite as one of the most important discoveries of the age. It opens up new possibilities in the cheapening of power and fuel, and in the development of synthetic methanol of which formaldehyde is a by-product. These engineers believe that bakelite is destined to become as cheap as paint.

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Overnight industrial revolutions, when they occur, are usually a result of surprise attacks upon the industries of one country by the industrialists of another who have secretly and painstakingly developed new and cheaper ways of producing competitive goods. The revolution comes about when these cheaply produced goods are suddenly offered in the markets in quantities sufficient to supply a considerable part of the demand.

More often than otherwise, the development of new processes and the introduction of the resulting product are slow, frequently unnecessarily slow. The art or science of manufacturing artificial silk from wood, cotton and other fibres has been known for many years, the first uncertain steps in this industry having been taken in England more than

50 years ago, and the basic processes of the manufacture of the modern product for which a wide market has been developed in this country having been developed more than 35 years ago. Part of the elapsed time between the discovery of the process and the introduction of the product was employed in perfecting the process, but most of it was lost because the product could not get a financial foothold.

Even now, although we are using more artificial silk than natural and the new textile is rapidly making inroads upon the old established industries in that field, its principal development in this country is being furthered by foreign capital.

What, if any, part of the recent troubles of the silk and cotton mills of this country were due to the introduction of artificial silk I'll leave to you to guess. Examination of the statistics fails to reveal that anybody has been hurt as a result of the introduction of fibre silk—so far as the records of production and consumption go all seem to have been enjoying normal growth. But the users of silk have been buying as much artificial as natural silk during the last three or four years, and, regardless of what the statistics show, it is evident that either the cotton or the natural silk industry has lost business that it might have gotten. And besides we all know as a matter of common observation that the cotton stocking has practically disappeared from the legs of women.

I couldn't undertake to tell you all the uses to which artificial silk is being put—some of them are too intimate, and I am not acquainted with many of the other uses. Artificial silk is used in neckties—it makes good ones that last as long as necessary; in sweaters, jerseys and various other forms of knit goods; in curtains, upholstering materials for furniture, and in the numerous other ways that I don't know about.

Fibre silk is not as strong as natural silk. Some of it is just as beautiful, just as silky and most of it is just as durable—for the purposes for which it is used.

The chemist's failure to make a silk as strong as that made by the silk-worm may be, and probably is, due to the fact that his product is not really synthetic silk—it is just a good imitation of silk. The artificial rubber that the chemist has made is not artificial at all—it is rubber, but his silk is not silk, and neither is his leather, leather.

Artificial silk, so-called, is made by a half dozen or more processes, all of them using cellulose as the starting point and the base. Some of it is nothing more than an improved "mercerized" cotton. But mercerized cotton is not artificial silk; that product is obtained by glossing cotton—it is not sold as an artificial silk. The processes which give more of the superficial aspects of silk than ordinary mercerized cotton are more elaborate and represent an advance in the art or science. In the end, however, their product comes out as a dressed up cellulose and fundamentally is more cotton than silk.

The chemists are now talking about making artificial cotton, which, since both cotton and wood are mostly cellulose, they ought to be able

to do with greater success than they have had in making silk. At least they are certain to improve their methods of utilizing the short staple unspinnable cotton that now goes into materials inferior to clothing and the other higher cotton products.

At the moment, however, cotton is cheaper than the silk that is made from wood cellulose, that is, artificial products sell for more in the markets. The fact that the chemists are working on the problem of artificial cotton suggests that they feel that it can be made from wood pulp about as cheaply as it can be cultivated in the field. The only other barrier in the way of artificial cotton is that of sources of supply of wood pulp.

Whether wood pulp or other sources of cellulose can be cultivated on a competitive basis for the purpose of making artificial cotton is a question that I have not looked into. As pointed out before, certain Southern trees that grow rapidly are to be cultivated as a continual source of supply of wood pulp for paper making.

The development of the artificial silk industry in this country to the point at which it produces a volume equal to that of the natural silk used in our silk mills has taken place in a matter of ten years. In 1913 we produced 1,566,000 pounds of artificial silk and in 1923 we produced 35,380,000 and imported nearly 4,000,000 pounds more. This compares with importations of natural silk in the same year of about 50,000,000 pounds. Our home production of natural silk is unimportant.

Most of the artificial silk produced in this country is made by the viscose process, this being commercially the most important of the early processes. Artificial silk was first produced abroad on a commercial scale by the nitro-cellulose process, the process which also produces gun-cotton and other explosives. The explosive and the silk are so closely related that it became necessary to take the nitrates out of the silk product before it could be handled with safety. A short time ago nitro-cellulose silk was largely supplanted by the viscose and the cuprammonium processes. The latest and the only process which gives a product that is not cellulose but a chemical compound is the acetate cellulose process. This process gives a silk that is stronger, more resistant to water and otherwise more durable than the processes that have reached a higher commercial development. The failure of the acetate process to make progress equal to that made by the other processes is probably due to the difficulties which were encountered in dyeing the product. Some of these difficulties have now been overcome and a more rapid development of the product is to be expected.

The important revolutions that are to be expected in connection with the artificial silk industry appear to be shaping within the industry itself. Recent progress includes the development of a method by which artificial silk can be made on rolls just as paper is made. At first the engineering developments were directed towards the production of silk thread from which silk cloth could later be woven. Experiments with laces, appliques and other products now promise a revolution within

the industry that may result in a complete change in manufacturing methods. It is apparent that the effects of rolling cloth out of pulp will be felt in the other textile industries as well as in that of artificial silk.

As the names indicate the points of difference in the various processes of making artificial silk arise in connection with the chemical used. In the nitro-cellulose process the cellulose is mixed or combined with nitric acid and other nitrous compounds. The nitric acid solution used is somewhat weaker than that used in making gun-cotton and is afterwards extracted.

In the cuprammonium process the cellulose is mixed with copper dissolved in ammonia. Viscose silk is made by treating the cellulose with caustic soda and then allowing the product to react with carbon bisulphide. Acetate artificial silk is an indirect product of the action of cellulose acetate upon viscose or some other form of pre-treated material.

The methods of hardening and drying differ and there are differences in the methods used in "spinning" the solutions through the spinarets which shape the threads, but so far as I know there is nothing to prevent any of these products from being rolled into sheets. The silk that has been used in this development was produced by the cuprammonium process.

You, of course, have known about artificial silk for a long time, and there is no news in the statement that such a thing exists, but have you thought about it in connection with the hundred other recent developments from the application of science to industry and have you considered the bearing of all this upon the security of your investment in industrial stocks and bonds and in connection with the necessity of safeguarding them by making sure that your companies and your country keep abreast of the advance of science. The entire artificial silk industry was developed abroad and brought bodily to this country.

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Not long ago, a year or two, the painting of an automobile was one of the largest items in the cost of its production. Two or three weeks' time, thousands of feet of floor space and an army of painters were then required to put your automobile through the process of quantity production. Today, if you use any of a dozen or more of the most widely advertised cars, your automobile goes through the paint shop in three or four days or in a week, at the outside.

The floor space on which it stands during the process has been reduced to a tenth of the space formerly used, and the number of men working on the job has been cut to the vanishing point.

Automobile manufacturers who use pyroxylin paints, another cellulose product, have cut their costs of production, so far as the paint item is concerned, in half or more than half.

The saving effected has been passed on to the investor in automobile company stocks and to the users of automobiles.

The development of pyroxylin paint was due to the demand of the automobile manufacturer for a paint that would get his production through the paint shop on schedule—he could turn out more cars in the machine and body shops that he could get painted without taking up half the state for drying sheds, and he put it up to the paint makers to produce paints that would dry in harmony with his daily production schedules. The result was a paint that keeps even with or ahead of his schedules and save the manufacturer money in the operation. Saving on the paint job was not an objective, but it was a result. The clogging up of production schedules was ruinously expensive and the chief thing desired was that the finished cars be painted and gotten out of the way.

There is no reason for emphasizing the revolutionary aspects of the development of pyroxylin paints because in their case, as in others, the development has simply enabled us to speed up and lower the cost of producing automobiles so that we could have more of them. In this instance, it is not even possible to say that pyroxylin paints have superseded anything—the old paints are in just as big demand as ever and there is no indication that any existing industry will immediately be harmfully affected by the development of this new product.

Revolution will come, of course, but it will take time. The new paint is already making its way into furniture factories and into the industries which market various painted products. As yet there has been no attempt to apply pyroxylin paints to the exteriors of houses, although under favorable conditions they are being successfully used for interior decorations.

The labor unions have resisted the development because pyroxylin paints are sprayed instead of being applied with brushes. This resistance has perhaps proved to be the greatest handicap to the application of pyroxylin to general uses; but there are other obstacles which will have to be overcome by the scientists before the time comes for making an issue over the refusal of the labor unions to work the paint-guns.

In this particular the engineers are far behind the chemists, but a way of applying pyroxylin paints to exteriors and to small interiors will be found—at present interior application is limited to rooms in which it is possible to get a circulation of air that will blow off the spray.

Until engineering has caught up with chemistry the use of pyroxylin paint will be limited to the painting of automobiles, furniture and other articles that are painted in the factory and to the re-painting of old cars. In the old-car field alone, pyroxylin promises to work an esthetic revolution. Pyroxylin has now been perfected to the point at which it can be applied over old paint—provided the old coat is not broken too much. You may have an ordinary car repainted in a matter of a day or two at a cost of $50 or $60.

Think of what that means to the enrichment of the general scene and to the pocketbooks of the owners of the companies which have developed pyroxylin paints.

The first pyroxylin paint to attain national reputation was Duco, the product developed by the duPonts—who were not directly in the paint business. Since the advent of Duco numerous other pyroxylins, some of which have been in process of development for a number of years, have made their appearance. One of the chief handicaps of pyroxylin paints in the eyes of those who like shiny things has been their refusal to take a gloss. The late comers to the field have worked to overcome this handicap and have made some progress. Opex, the trade name of the Sherwin-Williams product, and some others claim superiority in this respect. I do not know enough about any of the paints that have been developed to pass judgment on the claims. You will have to investigate them for yourself.

The part the duPonts have played in the development of pyroxylin paints, as in the development of artificial silk, probably goes back to the fact that primarily they are makers of munitions.

Like some artificial silk, pyroxylin is a nitro-cellulose product, and the nitrogen content of the mixture that makes the paint is only slightly less than that of the mixture that makes gun-cotton, another nitro-cellulose mixture. Although pyroxylin paints are fired from guns and have the same constituents as gun-cotton they are not explosive. You can use them with perfect impunity. The slight difference in the nitrogen in the solution makes a big difference in the properties of the two products. Pyrex, the hardened glass which is used for baking dishes, is another nitro-cellulose product that won't even crack when subjected to heats that would break ordinary glass to smithereens.

Pyroxylin is one of the oldest nitro-cellulose mixtures, the first patents covering the development dating back to 1855. Dozens of other discoveries of science have lain dormant for similar periods. Industry is as old as the race, but science is new. Our old technology was built up through the slow process of trial and error. If our engineers, beginning with the one who first made the stone hammer, were confronted with the problem of moving an army or a train of cars through or over a mountain they made a mental picture and tried various possible ways of getting the job done until they hit upon the one that worked the best.

There were certain things that they did not do and certain other things that they always did; profiting by the experience of their predecessors and making use of the laws of physics with which they happened to be acquainted. The application of engineering skill, the getting of the job done—any job—follows the formulation of the plan, the picturing of what the job is. If you don't know what you are going to do you can't do it. You believe that. So do I. Everybody believes it. Yet many of the things that chemists have done have been done without any idea at all about what they were going to do.

A THEOLOGIAN'S LECTURE ON EVOLUTION

The Rt. Rev. Thomas F. Gailor, Bishop of Tennessee, Episcopal Church, Delivered the Following Illuminating and Masterful Lecture at the Gailor Memorial Cathedral in Memphis on March 26, 1926.

"Sir William Hamilton says that one of the fundamental facts of human consciousness is the existence of ourselves and the existence of the world around and outside of us; and the records that have been preserved show that in very early times men began to speculate on the nature of the objective—of that thing we call matter—the substance of the earth, the rocks, the trees, the mountains and valleys. What is this matter? How did it originate? Was it made or was it eternal?

"The earliest speculations we know are those of the Greek thinkers, although the Babylonians and Assyrians may have discussed the subject, if only we had enough of their literature to read what they thought and said. Our first theories on the subject, therefore, are those of the Greeks, and it is amazing to find that men who speculated 2,500 years ago anticipated the conclusions of modern science.

"Thales (600 B.C.) derived all things from water, and his pupil, Anaximander, went deeper and said that the first element of things was the Infinite. He was the first to use that word as the cause of all things. This, he said, was a substance differing from all known substances and the heavens and the earth had come from it.

"Diogenes of Apollonia said all things came from air; Heraclitus said from fire, and Pythagoras from number. All these Greek philosophers implied that the world was in a state of evolution and change, and that matter was composed of invisible primary elements forever moving.

First Definite Theory

"It was left to Leucippus (500 B.C.) and Democritus (460 B.C.), however, to formulate a definite theory of atoms. They maintained that atoms, i.e., indivisible elements, which are infinite in number, constitute the visible universe by their motion and impact, and the variety of objects is the result of a difference in number, form and order of the atoms—and this is exactly the theory propounded by Prof. Huxley in recent years. Epicurus founded his philosophy upon this theory, but the Roman poet, Lucretius (96-55 B.C.), looking out upon a world torn by civil war, blinded by superstition and corrupt in morals, wrote his famous poem in derision of the existing form of religion, and set up a new god—Nature—governed by inexorable law—a machine universe, resulting from the orderly concourse of atoms. There were no gods, he said. Men are the products of atomic concussions, controlled by law. Lucretius committed suicide when he was 41 years old—but his poem is marked by beauty and power. One weak point in his system was that he had to endow his atoms

with free-will in order to account for their combinations. Yet Lucretius wonderfully anticipated some of the most advanced results of science. He taught the conservation of energy and the unity of the world.

"It is hard, of course, to believe in the constant rotation of the atoms in what appears to us to be solid bodies. Yet there is constant vibration in the diamond, in steel and the rock. This sheet of paper is moving like a seething sea.

"Sir Robert Austin placed pieces of gold and lead in contact and left them together under certain atmospheric conditions. At the end of four years, the gold had traveled far into the lead in considerable quantity, had changed its character.

"If the molecules are far apart, we have gas; if nearer together, we have liquid; if still nearer together, a solid. By means of heat, we cause a separation of molecules, and thus convert a solid into a liquid and a liquid into a gas. By cold again we can reverse the process. Sir James Dewar, by cold and pressure, succeeded in crushing the molecules of air into liquid air.

"We know also that there are atomic affinities. We know not why. We know that every flower is an example of atomic affinity. The seed selects its own atoms from the earth and make a lily or a rose or a tree. These atoms and molecules behave like living things, with their own special purpose and service for the architecture of the world. The palpitation of the molecules makes light. It is the throbbing of the hot molecules in the sun that causes the waves of light and heat, and different elements throb in different ways, so that by what is called the solar spectrum, we dissolve the light and get the messages from hydrogen, sodium, copper, iron, zinc and other elements. Moreover, we have found a new metal in the sun, called helium, which is related to radium, and has opened up an entirely new theory of matter. We can weigh the stars by means of the kind of light they give.

The Atomic Theory

"The atomic theory of matter has become the fundamental fulcrum of modern science, and has led to startling results. It was formulated precisely and minutely for the first time by Prof. John Dalton, an English scientist in 1810, in a book entitled, "A New System of Chemical Philosophy." He assumed that there are indivisible ultimate particles of definite weights—they cannot be seen nor handled, but all matter is composed of them. There are several distinct elements, the atoms of which have special weights. The lightest atom known is that of hydrogen gas, and the weight of all other atoms are compared with it. Therefore, an atom of sulphur is said to have the atomic weight of 12, because it is 12 times heavier than an atom of hydrogen.

"These atoms are gregarious. They hate to be alone. So they are always found in groups or complexes, which are called molecules—and one molecule may contain a thousand atoms; and Lord Kelvin tells us that a molecule is in size about one hundred and twenty-five millionths

(1-125,000,000) of an inch. Two septillion molecules can be packed in a box one inch square. And if we let the molecules run into it at the rate of 1,000 every second, it would take 6,000,000 for the box to be filled with molecules. And when we think that there are thousands of atoms in a molecule, we can get some idea of the size of an atom.

"Many scientists, like Prof. Snyder, Sir Oliver Lodge and Sir William Crookes, have tried to illustrate the marvelous activity of the atom. One grain of indigo, for example, will color a whole ton of water by dispersing its atoms; and a molecule of hydrogen vibrates at the rate of 450,000,000 times a second.

"Solidity of matter would seem to be simply the impression we get from the speed of the molecules. Their activity is so intense that they seem to be everywhere at once, and give the impression of solidity. A column of water falling through a tube of the height of 500 meters cannot be broken into by a violent blow of a saber. Falling stars hit our atmosphere and are smashed in pieces as though they hit an anvil. A piece of tallow candle can be shot through an inch plank; and a disk of soft iron can be whirled so rapidly that it will eat through a bar of steel. Such is the power of motion, and such are atoms and molecules. No man has ever seen one. We do not know their shape; but they have been weighed; they have strange affinities; they dance and whirl in everything, everywhere.

"If there was one thing that science was sure of, it was the indestructibility of the atom. We can break up matter and pulverize it and change its form by heat and cold and chemical combinations, but the atom never chnges. Sir Isaac Newton and Herschel and Dalton and Clerk Maxwell were all absolutely sure about that. Moreover, they knew that there are about 80 primary elements, and those elements remain the same.

The Force of Electrons

"But about 1875, Sir William Crookes, a noted English chemist, overthrew and destroyed this theory. He proved that the indivisible and indestructible atom was composed of thousands of radiant particles which are really nothing but what we may call spurts or sparks of energy. Thus matter and force are reduced to the same thing.

"In 1895, Roentgen's discovery of the X-rays corroborated the theory: and in 1898 Madam and Monsieur Curie succeeded in extracting the amazing substance called radium, from pitch blende, an ore of uranium.

"Anyhow, it is now generally regarded as an established fact that each atom is made up of many corpuscles or electrons, each of which is the center of radio-activity—that these corpuscles are all alike—that they are in violent motion—that by their action one element may be changed into another and the dreams of the old alchemists of the transmutation of metals may be realized.

"The situation may be pictured by imagining that the molecules and atoms and electrons are bound together by elastic bands. The bands that hold the atoms are stronger than those that hold the molecules, and the

bands that hold the electrons are stronger still. Loose the bands that hold the electrons and a force would be generated to shake the world. A teaspoonful of salt would destroy a city and take us to the moon in four minutes.

"Again comes up the question of the apparent solidity of things. A French scientist tells us that 'it is probable that matter owes its rigidity only to the rapidity of the rotary motion of its elements, and that if this movement stopped, matter would instantaneously vanish into ether without leaving a trace behind.'

"The modern American is saying what vast commercial possibilities are involved in our getting control of this radiant energy?

The Miracle of Electrons

"Thus we have come to the concluson that the atoms, which were once thought to be impenetrable and indestructible, are soft and breakable, and consist of whirling particles; and these particles or electrons are always the same. This gets rid of the 80 primary elements, and gives us a material—an urstoff, as they call it, which is the primary stuff out of which all atoms are made, from oxygen to gold. And these electrons are not a "fourth form of matter," indeed they are not what we call matter at all—but electrical charges—disembodied as it were. They have no material properties at all, although all matter is made up of them. Talk about miracles!

"Prof. Rutherford, an American physicist (1892 says, 'the particles (B) of radium are not matter at all, but disembodied electrical charges, whose motion confers on them the properties of ordinary mass.' So Prof. R. K. Duncan and others. Prof. Thompson declares, 'in fact, all mass is 'mass of the ether; all momentum, momentum of the ether; and all Kinetic energy, Kinetic energy of the ether.' So all matter is merely electricity in motion. When we sit on a chair, we are sitting on little whirling systems of electricity. When we eat our dinner, we are chewing molecules of electricity. As Sir Oliver Lodge says: 'An electron is only a peculiarity or singularity of some kind in the ether, which is of perfectly uniform density everywhere.'

"What, then, is this ether they talk about? Well, ether is undulation. It is an hypothetical something whose existence science has to assume in order to account for known facts. It fills all space throughout the whole universe. It penetrates all matter. It is more elastic than rubber and denser than steel, yet it is invisible and imponderable. It is not a fluid nor a solid nor a gas nor radiant matter. It undulates through all space, add according to the nature of the undulations, it appears in our consciousness as the phenomenon of light, heat, gravitation, electricity. All great scientists have felt the need of assuming the existence of some such substance: Newton, Clerk Maxwell and others; but Professor Lodge demonstrated its existence by discovering wireless telegraphy and the radio. It may be said in passing, that the light

vibrations of the ether are about six quadrillions every second of time. Talk about miracles again!

"We have been speaking of the nature and constitution of the thing we call matter, and now we may consider for a few moments that special form or body of matter with which we are more immediately acquainted.

The La Place Hypothesis

"What is the earth and where did it come from?

"The sky is full of what we call nebulæ. Seen through the telescope they appear like faint, luminous clouds, but, unlike clouds, they never change their shape. They are millions of miles distant and of tremendous size. The so-called milky way is an enormous nebula, thousands of times larger than our whole solar system, which is supposed to have originated from it.

"In 1796 Pierre Simon La Place brought forward his famous nebular hypothesis of a fire mist which once stretched from the center of the sun to the outermost planet of our system, and which, as it cooled and contracted, threw off the planets as nebulous equatorial rings, which rings (as we see them now in the belt of Saturn) again eventually coalesced into globular masses and formed planets.

"This theory was accepted for a long time, but is now generally rejected, because it is not mechanically sound. New hypotheses have been promulgated from time to time—one of the most plausible being the meteoric hypothesis, viz.: that there are meteoric swarms constantly growing into stars and planets. There are still other theories, none of which have been finally accepted. The whole problem is still, in detail, unsolved.

"As for our earth, we know that it is one of a group of planets that revolve around the sun, comprising our solar system, and the system was probably at one time evolved from a nebula, according to one of the various theories.

"The earth is about 8,000 miles in diameter—larger than Mercury and Mars, and about the size of Venus—vastly smaller than Jupiter, Saturn, Uranus and Neptune. It rushes around the sun at the rate of 18 miles a second—100 times faster than a rifle bullet and a thousand times faster than an express train. It is fascinating to try to imagine the gradual cooling of its crust, the formation of its seas and continents, and the creation of its atmosphere. The crust now is about 50 miles thick, and the interior, according to the most recent speculation, is composed of solid masses in a sea of fire. A combination of conditions and elements is thought to have led to the development of life upon the earth and many modern scientists are of the opinion that no life exists on any of the other planets, because they cannot reproduce the conditions which are peculiar to our planet.

What Is Life?

"But what is life? What is the difference between what we call the organic and the inorganic?

"If life means the capacity to feel—if it means the quality of sensitiveness—then all the world is alive. Many apparently 'dead' substances have definite sensibility. They respond to heat and cold and light and electricity. Moreover, we know that many metals can be poisoned or fatigued or depressed or stimulated, just like living organisms. And there are in crystals, for example, and their formation, many activities that suggest life. We have seen the amazing activity of the atoms and electrons, and their affinities, and we cannot say what may be the undiscovered possibilities in the rocks and trees.

"But, after all, we know life as that phenomenon, that force, which reproduces and assimilates. Plants and animals reproduce their kind. They assimilate other substances and change them into the substance of their own tissues. Moreover, in a moment they will cease all their chemical action, and die. No mutation nor movement of electrons account for this. In fact, M. Pasteur in his speech before the Sorbonne in 1864, declared that the development of life by spontaneous generation from inorganic matter is impossible. 'Life,' he said, 'is a germ and germ is life.'

"Therefore, modern scientists are divided into three classes, viz.:

"(1) Those who say that life was developed somehow in the remote past by conditions which no longer exist.

"(2) Those who say that life was brought to us from another planet, and

"(3) Those who say that life still does originate from so called dead matter.

"But the problem is still unsolved.

Organic Evolution

"This brings us to the consideration of the scientific theory of organic evolution.

"In the year 1831 an English naturalist, Charles R. Darwin, was a member of the company of H. M. S. ship *Beagle* in a five-year exploring trip around the world; and his observations of the fauna and flora, especially of the Galapagos Islands of the Pacific Ocean, suggested to him the idea that varieties within species were simply developments from a common stock—evolution, he called it, by natural selection. Each island had its own variety of the mocking thrush, the lizard and the tortoise, and all the species of each genus come from one original. Darwin's book on 'The Origin of Species' was published in 1850 and created a sensation because in it he suggested that all existing species of plants and animals had evolved from simpler pre-existing forms.

"At the very same time Alfred Russell Wallace, another English naturalist, came out with virtually the same theory and is entitled to the same fame as Darwin.

"The paleontologists, or students of ancient forms of life represented by fossils in the rocks, took up the theory and undertook to corroborate it by discovering remains of extinct forms of animal life, which were the progenitors of existing animals. One of the most interesting discoveries was the famous series of fossil horse bones which was unearthed from the tertiary and other strata of North America and Europe. They showed a development of the horse from an original Eohippus only 11 inches high. Other researchers showed the evolution of various species of plants and finally the claim was made by zoologists, that birds could be proved to have developed from a reptilian or saurian stock.

"It is easy to understand how fascinating it becomes for students of astronomy, geology, botany, chemistry, biology to search for facts that would tend to corroborate and establish a theory, which appeals so strongly to the desire for unity innate in the human mind.

"In the domain of biology and anthropology especially the speculations became intensely interesting and important.

"The biologists have analyzed the physical basis of life and call it protoplasm. It is a combination of four elements, viz.: Carbon, oxygen, hydrogen and nitrogen, plus vitality, i.e., the reproductive and assimilating quality.

"This protoplasm is made up of a new combination of molecules called cells—and each cell contains 100 million molecules. These cells have wonderful powers. They reproduce, assimilate and contract. They have vast chemical energy. They manufacture sugars and acids and bile and color stuffs. They take poisons and render them harmless and select their own food and assimilate it.

"If atoms and molecules and electrons have energy, these cells have something wonderfully like intelligence.

Imaginations Pictures

"When we get one of these cells working, imagination easily builds up the evolution of the whole living world. Imagination also has delighted itself in picturing the gradual development of the human species through millions of years, from a microscopic particle of protoplasm.

"Prof. Ernest Haeckel, the Prussian biologist, is very certain. He knows all about it. He says: 'Man's origin is manifest: First, a bit of green protoplasm; then an amorra (i.e., a piece of protoplasm with power to move); then a kind of worm; then a kind of fish without a skull; then an ordinary fish. Then mammals, marsupials, lemurs, apes—man.'

"It is perfectly easy; but it is an imagination—and it has many gaps that are not filled.

"It is true that man's body is very like the bodies of some other animals. It is also true that a study of the human embryo suggests the development from lower forms—but the theory has not been actually proved. It is quite defensible, for example, to believe that the ape species and the human species were different from the start. We are not at all sure that one species can be run into another. On the contrary; Gregor Mendel, in a book published in 1865, but only generally known since 1900, proved that there has never been a development of one species into another; and Darwin himself said (Life, etc., 1-210) 'We cannot prove a single species can be changed.' This is called 'Mendel's Law,' which is now acknowledged as authoritative by leading scientists, like Bateson, for example, the greatest living biologist. So, Prof. Barclay-Smith, professor of anatomy in King's College, London, at a conference of scientists two years ago on 'Problems of Modern Science,' said: 'The final solution of man's origin, if solved it ever will be, is not yet in sight.'

Evolution Not Proved

"No! Evolution as regards the origin of man anyhow is not yet proved. The question is still open. It has not really been proved, that we come from a fire-mist, or that we are cousins of the monkey; and evolution is only a brilliant, plausible, unifying hypothesis. That different species have structural and functional similarity and that different species vary within wide limits is quite certain; but that one species can turn into another species—that a beetle can evolve into a vertebrate, is another question.

"Moreover, there is a strong body of scientific opinion that holds that the human species possesses characters, which physical evolution alone cannot explain. Prof. Alfred Russell Wallace, for example, the contemporary of Darwin and the co-proclaimer of the theory of evolution, maintains that physical evolution does not account for man and combats the materialism of those who are not willing to admit that there are super-physical factors necessary to assume in order to explain man's mental and moral constitution. For man has distinctive and higher attributes which he owes to other sources than his animal ancestry. In fact, there is a great gulf that separates man from the rest of the animal world. He alone possesses a moral sense, capable of distinguishing between right and wrong. He alone deliberates and arrives at moral purposes, which he fulfills by a voluntary direction and control of propensities that are left uncontrolled in the lower species. There is also the rationally controlled imagination; the esthetic sense; the sense of humor, and highest of all, the religious instinct, with capacity to enter into communion with the unseen; to apprehend the Infinite and Eternal; to have and act upon the conviction of spiritual immortality.

"We may, therefore, be quite ready to admit that the physical human body is a development of a lower type; but the intellectual and moral singularity and supremacy of mankind demands a new cause—a new

explanation—an involution from above, as Prof. John Fiske declared in his book, 'Through Nature to God,' 'The psychological divergence of man from brute requires us to dichotomize the universe, putting man on one side and all other things on the other.' Prof. Henry Fairfield Osborne, in his book just published, replying to Mr. Bryan, evidently agrees to this when he says:

"'Evolution is a continuous creation of life fitted to a continuously changing world.' 'The emergence of the soul and mind of man is what I refer to as the creative element in evolution.' 'It is not his physical anatomy that makes man human; it is his moral, intellectual and spiritual nature that makes him a member of the order "Primates."' 'The creation of man, with his moral, spiritual and intellectual powers is utterly incomprehensible as purely a process of the survival of the fittest.' 'Nature is full of lurking surprises and contradictions in her methods.'

"'Finally, let it be clearly understood, organic evolution was brought forward as a theory to explain the origin of species and for the most part the evidence is all in favor of it, but evolution itself can be explained only by assuming a formative force working consistently down the centuries. There is purpose all through—purpose and intelligence. In other words evolution is the way, as far as our limited intelligence can interpret it, which God uses for the purpose of creation, and evolution postulates the existence and continuing creative activity of God. So it has been said: "To bring man from an amoeba in some hundreds of thousands of years is really no less a miracle than to bring him from an ovum in a few months.'

"The imagery of the story of the Creation in Genesis is no more to be taken as ordinary fact than the corresponding vision of the Apocalypse and yet,

"Even the story of Genesis is almost as plausible as the usual evolutionary hypothesis of the origin of species. Whichever way we turn we meet miracles; we are beset with them. There is no escape."

And Prof. Tyndall said, "The whole process of evolution is the manifestation of a Power absolutely inscrutable to man."

The Will of God

"Then we come to the conclusion of the whole argument.

"The corpuscles of the atom have been proved to be nothing but electricity; and electricity, like heat and light, is nothing but waves of ether; and ether is nothing but force. Ether is immaterial. It is imponderable, and yet more rigid than steel—and though it is more rigid than steel, the planets move through it without friction. We cannot see it—we cannot weigh it—we cannot conceive it. We simply prove that the tactile and visual and muscular and other sensations which give rise to the phenomenon we call matter, are products of force. It is our own sensations of sight and touch that cause the idea of matter, and these sensations are caused by force. We go further, and say that

there is no such thing as 'blind force.' Force necessarily connotes conscious movement. Therefore, the moment we identify matter with force, we identify it with conscious will and conscious being. There is no way out of it. What was formerly called the substance of matter, is now known to be force; and force is recognized to be the soul or will of God.

"So Mr. Herbert Spencer said: 'That which persists, unchanging in quantity, but ever changing in form, under these sensible appearances, which the universe presents to us, transcends human conception, is an unknown and unknowable power, which we are obliged to recognize as without limits in space, and without beginning or end in time.' Or as another has said: 'Matter is not an unintelligible turbulence in an unconceivable ether, but it is a manifestation in force of the Universal Spirit,

> Whose dwelling is the light of setting suns,
> And the round ocean, and the living air,
> And the blue sky, and in the mind of man.'

"This solves one great problem anyhow. It proves that the universe is one; that all its parts are closely related to one another; that throughout its vast complexity of movement and change it is subject to one mind and one will; and thus the craving for unity, which has characterized the human mind in all ages, is justified and fulfilled.

"To us human beings, who think and live on this planet, the profoundly interesting and important question is: 'Is this Inscrutable and Omnipotent Will a self-conscious Person, Who can hear us when we pray? Are we known individually to Him? Is He a moral Being? Is He indifferent to human conduct and human suffering, or does He care?'

"This is the question that Philip asked Jesus, saying: 'Show us the Father and it sufficeth us.'

"Now some men of intellect and learning—Col. Ingersoll and John Stuart Mill, for example—have declared that the 'Inscrutable Power' is cruel and merciless. Prof. Huxley says that the Power 'is just and patient, but never forgives a mistake, and never makes allowance for ignorance or inexperience.' The Roman Stoics said that The Power is indifferent to human conduct and human suffering.

"But the answer that Jesus gave was: 'He that hath seen Me hath seen the Father.' God is such an one as Christ is—a God of Love and tenderness. Touched with a feeling of our infirmities—forgiving the sinner—both merciful and just.

"This was the culmination, we believe, of the Revelation that God gave through His servants the prophets, which was completed in the actual manifestation of his nature and goodness in Jesus Christ.

"We have become so accustomed to this Revelation from God—this dogma of the Christian Church—that God is Love, and that therefore Love is the fulfilling of all the law of righteousness. We have become so accustomed to it, that we take it for granted. We forget that it has

been proclaimed and popularized by the Christian Church as a Creedal statement, and that those who reject the Creed are really rejecting the truth of the Revelation upon which this law of Love is founded and out of which it grew. The shallow thinker may say: 'Let us throw away doctrines and creeds and rely upon the Christian consciousness;' but we know that Christian consciousness—that law of love to God and love to man—was created by the very doctrines, which he proposes to repudiate.

No Cause for Surprise

"Finally: The study of the amazing conclusions of science as to the constitution of matter and the activities and affinities of atoms and molecules and electrons should teach us not to be surprised or disturbed, when we read the account of the miracles in the New Testament. If the universe is not a dead, unintelligent machine, but is guided every second by a conscious omnipotent Will—if that Will created and directs the protoplasm in its every atom, as it evolves to produce the fauna and flora of the world—then it was to be expected that the entrance of a sublime and unique Personality into this material order of things should be attended by singular and super-normal manifestations of Divine love and power.

"The miracles of the gospel—the virgin birth and resurrection—are the corollaries, i.e., the inevitable conclusion of the incarnation."

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KAPPA PSI LEADERS

PROFESSOR LEON MASON MONELL, *Gamma and Gamma-Iota*

Leon Mason Monell was born at Binghamton, New York, April 9, 1890. After graduating from the public school, he entered Binghamton Central High School, from which he graduated in June, 1909. While in high school, he took an active part in school activities, being successively elected Secretary, Vice President and President of the Debating Club; business manager of the high school paper; a member of the track team, representing the school at Hamilton College in the dashes and pole vault. He tied for second "all-round" champion in his senior year.

During this time, he served seven years of apprenticeship in the drug store of Mr. H. R. Bonfoey.

PROF. L. M. MONELL
Gamma, Gamma-Iota

In the fall of 1909, he matriculated at the Columbia University College of Pharmacy, in the University Course, and received the degree of Ph.C. in May, 1911. While at college, he was initiated into Gamma Chapter in February, 1910, and later elected treasurer. He was also elected Secretary of his senior class. In his freshman year he made the Honor Roll.

During his college course, he had a position with Mr. Reuben R. Smith, a trustee of the New York College, and upon graduation he was appointed a pharmacist with him, which position he retained until he resigned to matriculate in the School of Mines, Engineering and Chemistry of Columbia University in 1912. In 1917, he was awarded the Chemical Engineering Degree by that institution. During his studies

he followed his profession as a registered pharmacist and in the summer managed drug stores at the seashore.

Upon graduation from Columbia, as a Chemical Engineer, he accepted a postion with Merck and Company, in the manufacturing department, and later became a department head, which position he held until 1922.

In 1918, he was elected Regent of the New York Graduate Chapter, a position which he held for three years. In the spring of 1919, when Gamma was almost depleted due to the World War, and the few members felt they could not hold their annual banquet, he appointed a committee of the Graduate Chapter and succeeded in holding the "Victory Banquet," which, for spirit and number, lacked nothing of the usual Kappa Psi "pep". The majority of those attending were still in uniform.

In the fall of 1922, he was elected to the Faculty of the School of Pharmacy of the University of Buffalo, as Assistant Professor of Pharmacy under Dr. Willis G. Gregory, Dean and Professor of Pharmacy. Here he became interested in the newly organized Gamma-Iota Chapter, acting later as Faculty Adviser.

He was honored by being called into the Study of Pharmacy by the Commonwealth Fund and was appointed an associate under Dr. W. W. Charters. This study is almost ready for release by Dr. Charters, for publication.

He is a member of the Student Activities Committee of the University of Buffalo, representing Pharmacy, and was appointed chairman of the Fraternity Committee. He is also a member of the University Senate.

He is a member of the Legislative Committee of Kappa Psi and Historian of the North Atlantic Province.

In addition, he is a member of the A.Ph.A., New York State Ph. A., of which he is chairman of the N. F. Committee, and the Buffalo Ph. A.

He is a member of the Masonic Fraternity, being a member of the Blue Lodge, Chapter and Council. He was an officer of the Chapter at the time he moved to Buffalo.

In June, 1918, he was married to Miss Grace Kircher. They have two daughters, Olive, age five, and Janet, age two.

Dr. H. F. Owens, *Chi*

1. Only son and child of Mr. and Mrs. Fred R. Owens.
2. Born April 9, 1895, at Rowell, Illinois.
3. Educated in the Grade Schools and graduated from the Clinton High School 1915 (all of) Clinton, Illinois.
4. Moved to Chicago in 1915—living at 2112 Addison St., and still present address.
5. Graduated from the University of Illinois School of Pharmacy, Chicago, Ill., Class 1918 with the Ph.G. degree.

6. Initiated in Chi Chapter of K Ψ in 1917.

7. Was re-organizer and secretary of the Chicago Graduate Chapter of K Ψ in 1923-24.

8. Graduate of the Northern Illinois College of Ophthalmology and Otology, Chicago, Ill., Class 1919 with the O.B. and O.D. degrees.

9. At present complete manager of the Prescription Department of the W. A. Wieboldt & Co., Ashland-Monroe-Ogden, Chicago.

10. Very active in Fraternity work, member of the various bodies of the Masonic organization, at present President of Beta Lambda Chapter of Phi Delta National Fraternity.

11. Was married Saturday, April 10, 1926, to Miss Elizabeth Ruth Mallette of Cicero, Ill.

12. Was appointed Installing Officer by the Grand Council to install a Chapter of K Ψ at Valparaiso University College of Pharmacy, Valparaiso, Ind., and said Chapter was installed Saturday evening, April 17, 1926, in the Lemke Hotel, Valparaiso, Ind., with the aid of Brother Dean G. C. Schicks, Professor of Matera Medica of the University; Brother H. Hanley, R.Ph., Proprietor of two drug stores in Gary, Ind.; both Graduate Members of Mu Chapter of the University of Massachusetts College of Pharmacy; and Brother Thomas A. Stocco, Member of Chi Chapter, University of Illinois School of Pharmacy and a coming graduate member of Valparaiso University College of Pharmacy. Organizer and Regent of the new Beta-Mu Chapter in that city.

Henry Minor Faser, B.S., Ph.G.

Henry Minor Faser, born at Macon, Mississippi, January 21, 1882. Moved to Winona, Mississippi, when three months of age. Educated in the public schools of Winona, Mississippi. Received Bachelor of Science degree from the University of Mississippi and degree in pharmacy from the St. Louis College of Pharmacy. In the retail drug business for 14 years. When the School of Pharmacy was established in the State University of Mississippi in 1908 was elected Dean and professor of pharmacy, which positions still hold. Served on the Mississippi Board of Pharmacy Examiners, 1904 to 1908, and president of Board of Examiners, 1912 to 1916. One of the charter members of the State Pharmaceutical Association, and served as Secretary of same for three years, also president of State Association for one year. Member of the American Pharmaceutical Association and served two years as member of the Executive Committee of the American Association of Colleges of Pharmacy. Ex-President of the Guaranty Bank and Trust Company of Oxford, Mississippi, and now a member of the Board of Directors. Duties in the University necessitated resignation as president. Now Secretary of the Section on Education and Legislation of the American Phar. Association.

A deacon in the Presbyterian Church, Mason, Knight Templar, Shriner, and Delta Kappa Epsilon Fraternity.

EDWIN CUNNINGHAM HUTMAN, PH.G., *Beta-Delta*

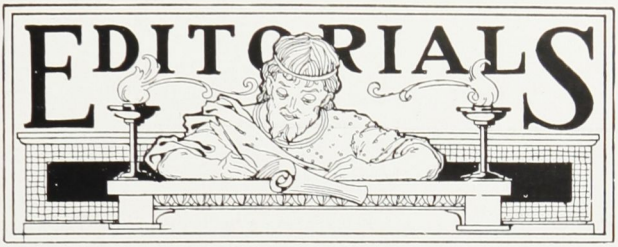
Professor of Pharmacy. Received early education in the Public Schools of Albany; Graduate of Albany College of Pharmacy, 1891; Past President of the Association of the Alumni of A. C. P., and Treasurer since 1908; Pharmacist, Hudson River State Hospital, 1892-93; Member New York State Pharmaceutical Association; Appointed Di-

EDWIN CUNNINGHAM
HUTMAN, Beta-Delta

rector of Pharmaceutical Laboratory of A. C. P. in 1902; Professor of Pharmacy, 1918—.

Appointed member of sub-committee on cerates, ointments, and miscellaneous galenicals for the decennial revision of the Pharmacopoeia.

Author—"Outline of Pharmacy."



A MESSAGE TO B-Θ, B-M, AND B-P

Dear Brothers of Kappa Psi:

To those that are. To those that will be.

Greetings:

It is not every fraternity brother who can be the happy person who may say: "I am a charter member of this or that chapter of my Greek-letter fraternity."

It is not only an honor but a trust. For during your life these new chapters of "Beta-Theta," "Beta-Mu" and "Beta-Rho" will need your help and watchful support.

To be a fraternity brother of Kappa Psi will mean a great deal to you if you are willing to put your shoulder to the wheel and help move forward.

If there is anything in our fraternity you don't like, make it your business to change it. Though, remember that we are one of the oldest fraternities in existence. Nothing of Kappa Psi was formed over night. Do not take snap judgment of what you learn.

Our ideals are high. LIVE UP TO THEM.

Make Kappa Psi in Tulane, Valparaiso and in Mississippi a name to be respected and admired.

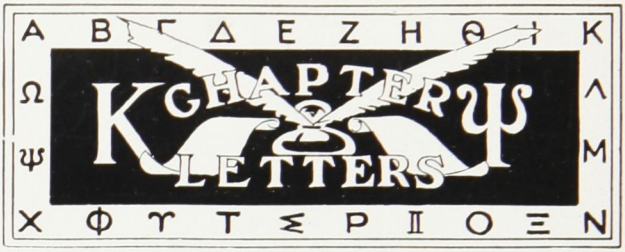
Scholarship is worth while. See that all your members are standing well in ALL subjects ALL the time.

Fellowship is worth while; too much of the so-called "good fellow" is a danger you should avoid.

If you cannot speak well of other fraternities, do not mention them at all. Kappa Psi can stand by its own record. Comparison is for others to make.

Here is wishing you much profit by your new associations.

We welcome you one and all. May it be our pleasure to meet most of you, maybe all of you, some time in the future.



"The death of any chapter means the useless waste of the constructive energy and sacrifice of others."

ALPHA

One big value of our Colleges and Universities is the large number of students brought together to study the same subject.

It is seldom that in a Pharmacy class there is not representation from all walks of life. The rich, the poor, from the city and from the country. This allows those attending classes to hear all subjects discussed from every angle. If Kappa Psi properly and carefully picks its members our fraternity boys should lead in all these discussions. Furthermore, and this is a point outside of classes, Kappa Psi members should redigest the work in class and make the essentials a part of each member's store of knowledge—so well understood that it will not be forgotten.

Daily work well done means the assurance of excellent grades in examinations and finals.

Accurate pronunciation, correct identification and classification, recognizing and learning primary truths and fundamentals should be easy to those favored with Kappa Psi fraternal fellowship. Let each Kappa Psi member cooperate with his classmates every day and the rating of your fraternity is assured. Even more, you then become worth while. Things not worth while should be eliminated. Kappa Psi must never be eliminated.

Fraternally,

W. Bruce Philip,
Grand Regent

January 30, 1926

Scholarship having always been a cardinal principle of Kappa Psi, this subject should be given much thought at the beginning rather than at the end of each term or semester.

Scholarship is not all learning. It is often reached by understanding. The fundamentals, if not understood, give the student a poor foundation to build upon.

There is no better subject for a topic of conversation in the Kappa Psi house, at the supper table or elsewhere, than the fundamental principles of the new subjects started with the new semester or term.

In the gym it is the dumb-bell that makes the strong man. In college the raising (of the grade) of the dumb-bell makes the good student brighter. The many questions of all the members give a broad view of any subject.

There is no excuse for any Kappa Psi Chapter having a single member deficient in the principles underlying any subject taught in any College of Pharmacy.

Fraternally,

W. Bruce Philip,
Grand Regent

February 6, 1926

That Kappa Psi is worth while is shown by both the number and work of our Graduate Chapters.

After the years at college as a member of a Collegiate Chapter there is a fraternity something that stays through life. This we may term the Kappa Psi spirit or loyalty.

Simply forming Graduate Chapters to see old faces, meet visiting brothers and have a good time is not enough. Constructive pharmaceutical and fraternity work must be part of each graduate chapter's program.

No Graduate Chapter is complete until it assumes the rôle of "Big Brother" to the Collegiate Chapters. No Collegiate Chapter is complete until it is in touch with all nearby Graduate Chapters. If we fail to have this cooperation Kappa Psi may grow along two different lines. One line of thought following strictly college lines and one line of thought following strictly graduate chapter lines. These two lines of thought can only be blended by close cooperation between our two types of Chapters.

It is imperative our fraternity grow as a Unit.

Start by Chapter cooperation. Start now.

Fraternally,

W. Bruce Philip,
Grand Regent

February 20, 1926

Everything that means advancement for your college or university must be supported by Kappa Psi. We cannot as a fraternity stand for better and higher education without taking a vigorous active part in any plan that means a better college or a finer university.

It must be a foregone conclusion that the officers and faculty of the Pharmacy Department may always rely on a 100 per cent endorsement from their Kappa Psi Collegiate Chapter on any worth while plan that the college or university promotes.

It is leadership in pharmaceutical and educational progress that must stamp our membership with universal approval. Accomplishment tells its own story. Kappa Psi victories in the past have been earned by hard work. During no year can members rest on laurels already won.

The question is what is the class of 19 6 doing now? The class of '25, yes, back to the class of '79, did their bit to support some plan or ideal.

Every college and university is calling the class of '26 now.

Brothers of Kappa Psi, those of the class of '26, I know you will do your part.

Fraternally,

W. Bruce Philip,
Grand Regent

February 27, 1926

The guest within your fraternity house is the mirror of the world as to what you are.

No matter where, when or why, our guest must always be able to truthfully say of us, "Kappa Psi is made up of Gentlemen."

Social life and social fellowship is a wonderful privilege. It is endorsed by our fraternity and should be for all times. We want our college life a full one. We rightfully demand a fair share of social college activities. They tell the story of each year through happy anticipation, wonderful realization and pleasant reflection.

No greater harm can come to our fraternity than when after any social event a guest can be found that cannot say, "Kappa Psi is made up of Gentlemen."

It means more than the unfortunate evening. It would mean poor selection of a member or members, wrong environment and forgotten pledges.

We claim we are gentlemen when we become members. Our social gatherings tell the story. Truly it must be always said by every guest every time, "Kappa Psi is made up of Gentlemen."

Fraternally,

W. Bruce Philip,
Grand Regent

March 6, 1926

Dear Brother and Brothers of Kappa Psi:

One of the reasons for a Kappa Psi Graduate Chapter is the opportunity for graduates joining with the Collegiate Chapters in social functions.

To make these events successful the date should be selected well in advance. See the date does not interfere with examinations or other social events that will divide the attendance. Plan the finances accurately and carefully. Have working committee with workers on the committees. Always have some one to see that EVERY brother present and every GUEST present is given full opportunity to meet those present and enjoy themselves.

It should be remembered that students may not have the money to spend that graduates who are working have. Joint social functions should be reasonable in fee and allow all to participate.

The amount of money spent on entertainment is a poor guide to judge the success of the evening. Kappa Psi fellowship development and respect for our fraternity is the true measure of the evening's benefits.

All social affairs need not be joint student and graduate gatherings. The members of the individual chapters may need one or more social evenings that are exclusively for members of the individual chapters. These are proper. These gatherings should be given as chapter affairs and not be given publicity as general Kappa Psi doings.

Your Grand Regent hopes the year 1926 will be a year of many Kappa Psi social gatherings that will bring the student and the graduate closer for a better and greater fraternity.

Fraternally,

W. Bruce Philip,
Grand Regent

March 22, 1926

Our colleges and universities are made up of many departments. In the past, the Pharmacy Department has been classed as a minor or lesser division.

This smaller position in the educational institution follows the graduate through life unless he, as an individual, is big enough to become a needed citizen and prominent enough to be classed as a power or personage in his city or community.

There is no reason why Pharmacy should not start to take its place as one of the important departments in our educational institutions.

Our advancement from a two years' to a three years' course means four years' education for the Pharmacist in the near future. What better work for our fraternity than the placing of our profession on a four years' basis, with a position in our colleges and universities that means greater respect and service value to the citizen and the nation.

The desire of the student plays an important part in this program. As a student and a member of Kappa Psi Fraternity, you can and should do something along this line.

Fraternally,

W. Bruce Philip,
Grand Regent

April 5, 1926

A chapter can always feel safe in following the counsel of the older members,—those just ready to graduate,—provided, of course, these older students have won a place of respect and honor among the faculty and student body. As each lower class passes on to a higher grade, there will come a time for them to guide and lead the chapter.

The great danger in the competition for chapter leadership is the forming of groups or cliques. Nothing hurts the local chapter or the name of our Fraternity more than an internal division among our own members. Rewards are then given to the favored few. Merit loses out. Our ideals are forgotten. We lose our position, and we may cease to be of value to ourselves and our institution.

Keep our chapters for the benefit of all. Let real merit and manliness win the honors. It is the real Kappa Psi way.

Fraternally,

W. Bruce Philip,
Grand Regent

April 12, 1926

Our associations, fellowships and friendships formed before we are twenty-one stay with us all our life. Most members are initiated in Kappa Psi before they are twenty-one and the influence of our fraternity is a life impression.

The bringing out and developing of each member of our fraternity during their college years is some undertaking. It is the problem of each chapter—teaching the selfish boy to be more generous, the good fellow to be more serious, the lazy and the poor student to be prompt and attentive, the over studious to temper his hard work with some play.

All work and no play, as well as all play and no work, does not make the ideal man. Our fraternity needs an ideal for each man. The result will be a better than average group when graduation time comes.

These well-rounded boys are the ones that will make better Alumni members both for our fraternity and the College.

Fraternally,

W. Bruce Philip,
Grand Regent

April 19, 1926

A very prominent speaker made the statement last week before a Luncheon Club here in San Francisco that a firm should not allow a salesman to wear a fraternity pin, for the salesman would depend too much upon it for prestige and business, and when the time came when he must stand on his merit, he would fail. Was the speaker right?

Yes—if that is why a fraternity man wears a pin! No! emphatically no! if a man has a real knowledge of what his fraternity pin and his

fraternity stand for. He has already stood an acid test and been found true blue, before he was allowed to wear the pin. His fraternity pin marks him as standing for brotherhood, organization, cooperation and high ideals. Every time he fails he drags his fraternity down with him. Every time he succeeds, his victory is shared by his brothers. Without his pin he stands alone, selfish, unmarked, and a prey to every weakness that may be brought to bear upon him.

Brother of Kappa Psi, wear your pin—not as a fraternity pin, but as an ideal to live up to and a badge to honor.

Let your fraternity be your incentive—not an appeal for a victory unearned.

Fraternally,

W. Bruce Philip,
Grand Regent

GAMMA

Loftus Emdin, *Historian*

Our last banquet, which was held April 22, 1925, was one of the biggest affairs ever held by our chapter. At least one brother from almost every year was present. Brother George Diekman was toastmaster, and to the joy of all (at least I am pretty sure all) he said, "Let's forget about school and be as true brothers together." (These may not have been his exact words but they were to that effect.) We did, and all had a great time.

The night after our last final exam we had a "get-together" and we all had a great time.

We have very favorable reports of the brothers of '25—all graduated and some with honors and capturing prizes. We of '26 do most earnestly pray that we will also prove to be "not so dumb" and graduate also when May arrives.

After school opened, our first event was the smoker. This was held September 23.

On October 2, we held our meeting to vote on Pledgees, and on November 24, we initiated ten new brothers into our fraternity. They were: Frank E. Gavalas, Adolph E. Tiesler, Henry M. Miller, Edward P. Paulonis, Charles J. Schlagel, Sanford R. Pierson, Kenneth S. Miller, Floyd M. De Voe, James J. Keegan and Walter J. Hillmer.

An important event not only for this year but for all years, I think was the dance held by both the KAPPA PSI and the PHI DELTA CHI, November 16. This was the first time, I think that we ever joined in any social activity with another frat. Brothers of both fraternities enjoyed themselves to the utmost.

After Christmas, our first event was the second initiation. This was held February 5. The new brothers are: John H. Parker, Rudolf O. Hauck, Raymond MacNear, William E. McBride.

GAMMA CHAPTER, 1925-26

Next on the list comes the Annual Formal Dance, held February 26, at the Hotel Plaza. I guess everyone was there. There is no need for me to say anything more about it. Like John Alden, it speaks for itself.

Now for the main event of the year, our ANNUAL BANQUET. Old acquaintances will be there and we guarantee a good time, fine crowd, and last but not least, swell eats.

Many of our brothers got married during this past year. They are: J. Concialdi, L. Jayne, C. Stafford, H. Maher, G. L. Commons, R. E. Brooks, G. YaDeau, F. Altar, and R. Scannell.

MU

HAROLD S. MITCHELL, *Historian*

This is intended to be "short and sweet"—the idea being merely to let our brothers of Kappa Psi, far and wide, know that Mu is still on the go. As I am a rather new-fledged member of the chapter I am naturally treading on unsafe ground when I attempt to put in writing the present conditions and prospects of the chapter.

I believe the last chapter letter sent to THE MASK contained an account of the party at the German Supper Club on December 15, 1925. Well, Mu, didn't take long to start something, because on the 17th, two days after the party, nine pledges were initiated into the chapter with all solemnity (*and otherwise*—ask them!)

THETA CHAPTER, 1925-26

They were:

Albert Reid, Adams.
Kenneth E. Pierce, Littleton, N.H.
Crawford W. Bolton, New Bedford.
Harold P. Shattuck, Northborough.
Harold S. Mitchell, Dorchester.
Malcolm R. McLeod, Frambaise, N.S.
Harry A. Clark, Jr., Roslindale.
John E. Donahue, Haverhill.
Briceno P. Fossett, Jay, Maine.

Before the initiation, Dean Theodore J. Bradley gave the members a brief talk and awarded the Fraternity Scholarship to our worthy brother Theodore R. Lund, of Watertown, Conn. This scholarship is awarded annually to a member of the chapter with the highest average in all first and second year subjects, as an incentive to scholarship, which is one of the primary aims of this fraternity. After the pledges had received their first and second degrees a buffet lunch was served.

On January 4, 1926, the men initiated at the last meeting were given the third degree, and an Election Committee formed to consider possible nominees for this year's officers, with Brother Theodore R. Lund as chairman. It was also decided to make plans for our Annual Dance on February 5. A committee was chosen for this purpose with Brother Paul J. Post as chairman.

Two weeks later on January 18, the annual election of officers took place and following were elected or re-elected:

Regent—William J. O'Brien
1st Vice Regent—Henry G. Reilly
2nd Vice Regent—Thomas E. O'Brien
3rd Vice Regent—Malcolm R. McLeod
Secretary—Richard W. St. Clair
Permanent Treasurer—Prof. Florin J. Amrhein
Financial Secretary—Ray S. Kelley
Senior Financial Secretary—Stephen H. Bradley
Junior Financial Secretary—Crawford W. Bolton
Chaplain—Kenneth E. Pierce
Historian—Harold S. Mitchell
Master of Ceremonies—William W. Fenstermaker
Grand Council Deputy—Prof. H. B. Youngken

Two weeks later these men were installed into their respective offices. The retiring Regent, Joseph P. Serpa (New Bedford) spoke to the brothers briefly, as did the new Regent, both of whom expressed their hopes for the coming year. The evening was made a perfect success by our prize cooks and caterers, namely, Brothers Amrhein, Serpa, Luce, Sorwin, Bradley, and Chipman, who furnished us with a perfect roast pork supper. The evening was finished by cleaning up some business matters.

A PART OF PSI CHAPTER, 1925-26

Mu's 20th Annual Dance was held at the College in George Robert White Hall February 5. The dance was informal and was a great success, as are all of Mu's activities. Among the many features of the dance were the novelty dances, the music by Ray Collins and his orchestra, and the favor, which was a wrist-watch compact with the coat of arms on the cover. The girls were certainly tickled with it. We were fortunate in getting a Silver Masked Tenor as an entertainer for the evening, as well as having the dance broadcast both of which were made possible by the masterly handling of the situation by Brother Post, who was chairman of the committee. Refreshments were served during the intermission. The dance was well attended and all enjoyed themselves immensely.

On the 16th of February a Theater and Dinner party was held with about twenty members present. The show was a burlesque at Waldron's Casino and the theater supper was at Hunter and Jackson's Log Cabin. The party was *so* much enjoyed by the boys that plans were made to hold another on Evacuation Day. This was done and the second party it is claimed outshone the first in more ways than one. However, that is neither here nor there.

Meanwhile, another initiation has taken place and five more brothers have been added to the chain and are now strong links in Kappa Psi. Those initiated were:

Sylvia P. Gannino, Lynn
L. C. Filadora, Revere
A. McCullon, Nashua, N.H.
G. T. Dickson, Colebrook, N.H.
J. V. Burke, Dorchester

The way things are heading, it looks as if Mu is going to be the strongest chapter in the oldest and greatest pharmaceutical fraternity in the country.

OMEGA

William Merz, *Secretary*

Omega chapter is going along fine now. We are holding our annual formal dance February 24.

Next week we are initiating several senior members and freshmen. Also having a facultate initiation for Prof. Marquin, Professor on Pharmacy at our college.

BETA-ETA

Glen C. Weber, *Historian*

Beta-Eta Chapter announces the initiation of the following men:

James H. Faust, Morgantown, West Virginia
Delmar T. Anderson, Clarksburg, West Virginia
Burley S. Emerick, Uniontown, Pennsylvania

The first two were members of our old local but were not in school last year. Mr. Emerick is a second year man, and ranks high both scholastically and socially.

During the past few months our chapter has been busy keeping the Pharmacy meetings alive. We have had three thus far, one student and one professor having spoken each time, and from the interest which is being taken in them I think I can truly say they have come to stay.

We are planning a banquet for the close of the year, one in which the whole Pharmacy school will participate to do honor to those graduating. We hope by these little gatherings to bring our students closer together, and establish real brotherhood in the department.

Beta-Eta Chapter extends greetings to all the brothers, and wishes them all the happiness of Spring.

BETA-XI

R. G. Kale, *Historian*

Beta-Xi is now a very strong chapter. We have worked hard to make this year successful, and now we feel that we have been amply rewarded for our efforts. With the exception of J. H. Pinnex, who was recently pledged, all of our pledges have been initiated. We now have about two more men under consideration, and if they are passed on we hope to initiate one more time between this time and the close of this quarter. Brother Pinnex is also a member of Chi Tau Fraternity.

Kappa Psi entered the University's Intramural Sports this quarter by putting out a basketball team. Brother Elmore was elected manager, and he has proved to be an excellent forward on the team as well as leader of the club. At the present our standing in the league is well over five hundred per cent, and the end of the season should find our team near the top.

Brother Oakley made the University Freshman Team and next year we expect to see him make his letter on the varsity. He is now on a ten-day Northern trip with the team during which time they will meet some of the strongest university freshmen's teams in the north.

Brother Scroggs, our treasurer, now holds an instructor's position in the Pharmacy School. That department is to be congratulated on securing the services of such an able and conscientious man.

We were happy to welcome Brother Crawford, our secretary, back into our midst. He has spent the last three weeks in Watt's Hospital, Durham, N.C., where he underwent a serious operation. He was sorely missed on the campus by his many friends, and during his absence our meetings never seemed complete.

The scholastic standing of Beta-Xi was exceptionally high last quarter. In selecting men last fall we gave this phase much consideration. As a result our first year men all passed their work, made excellent grades, and are leading the freshman class in Pharmacy.

Our new officers have been elected, and their names and offices are as follows:

J. C. Brantley—*Regent*
C. H. Crabtree—*Vice Regent*
C. H. Oakley—*Secretary*
J. L. Holshauser—*Treasurer*
R. G. Kale—*Historian*

With such men in office, as those whose names appear above, we predict a most successful future for Beta-Xi Chapter.

BETA-PI

H. R. Williamson, *Historian*

Well, fellow brothers, here we are again starting a new semester. We all came through with best grades possible, but we are not satisfied yet, so will work harder this coming year for better or for worse.

At the beginning of last semester we started with only ten members and one pledge, but now we have the same number of members and fifteen pledges, making our house full.

The members and pledges are as follows:

Members

Victor J. Malstrom
David Smith
Morris Dirstine
John Offutt
John Wagnes
Albert Beauchane
Charles Peters
Berton Gruber
Harold Weatherman
Fred Pearson
Bert Densow
Reid Williamson

Pledges

Kenneth Brown
James Button
Luddie Suhadulnik
John Austin
Paul Lapp
Ralph Semiro
Elmer Jastad
George Macek
Joe Buchannan
Ted Spencer
Charles Dibble
Kenneth Day
Paul Friel
Ned Nelson
Delbert Cooper

We succeeded in getting most of the good material from last semester and we hope to get more this coming year. Although our field is small I claim that we get the best material on the campus.

We haven't decided yet when initiation will be, but we hope sometime in the future.

Talk about hard luck, one of our pledges broke down with the small pox, and you can imagine how the bunch here at the house felt. (All Sick.) Everything turned out alright until we got a phone call telling

us that the doctor would be up to vaccinate the whole bunch of us. In all my life I never have seen a sicker looking bunch of fellows all waiting for the doctor.

Election of officers will take place at our next fraternity meeting. The officers for last semester and also for the time being are as follows:

Regent—Charles Peters, Olympia, Wash.
Vice Regent—Harold Weatherman, Addy, Wash.
Secretary—Berdet Gruber, Spokane, Wash.
Historian—Reid Williamson, Seattle, Wash.
Treasurer—Harold Weatherman, Addy, Wash.
House Manager—Victor J. Malstrom, Tacoma, Wash.
Chaplain—Morris Dirstine, Lind, Wash.

NEW JERSEY GRADUATE CHAPTER

B. J. G. Chiego, *Secretary*

The first quarterly meeting of the New Jersey Graduate Chapter of Kappa Psi Pharmaceutical Fraternity was held on Tuesday, January 26, 1926. This meeting was brought about through the efforts of Dr. R. P. Fischelis. It certainly was enjoyable to be among the boys and sense that feeling of mutual happiness and good fellowship.

The following is a list of the officers elected:

Regent—Dr. Robert P. Fischelis
Vice Regent—Louis Ghiosay
Secretary—Bernard J. G. Chiego
Treasurer—John Francis Denver
Historian—Harry P. Petrozzini
Chaplain—John Norman Silsley

Dr. J. G. Noh was elected the chapter's first honorary member.

The chapter is on its way to positive success. The next quarterly meeting will be held on April 13.

ETA

Eugene L. Maines is Chief Chemist and Superintendent of the Strong, Cobb and Company, located at 206 Central Viaduct, Cleveland, Ohio.

BETA-THETA

O. E. Wager has been forced on account of his health to withdraw from school for the present. THE MASK extends best wishes for his speedy recovery. His home address is Jennings, Louisiana.

Ralph Walton Bost is situated in New Orleans at present.

BETA-ZETA

Correct addresses for some of our Beta-Zeta men are as follows:

Jesse Gilkey, 515 Abbington Bldg., Portland, Ore.
Arthur Livingston, College Phcy., Corvallis, Ore.
Thomas Graham, Graham & Wortham's, Corvallis, Ore.

ANNOUNCEMENT OF THE APPOINTMENT OF A NEW OFFICIAL MANUFACTURER OF KAPPA PSI FLAGS, PENNANTS, BANNERS, PILLOW COVERS, ARM BANDS, SKULL CAPS, ETC., WILL BE MADE SHORTLY

Write Your Name
in the Hall of Fame

BIG MEN WANTED

Wanted—Four men to give $25,000 each—ten men to give $10,000 each—twenty men to give $5,000 each, 100 men to give $1,000 each and 20 men to give $500 each—

What a Wonderful Opportunity for the Philanthropically Inclined

"The deeds men do live after them!" And what an opportunity is presented here to do something of a lasting nature for American Pharmacy!

One-half of the required sum—One Million Dollars—has already been subscribed. The other half should come quickly.

ENDOW A SECTION!

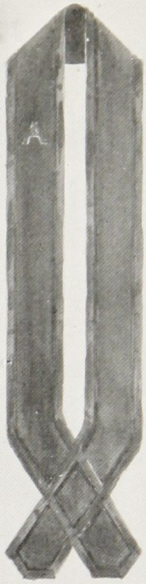
A plan is being developed to endow the library, the laboratories and certain other sections of the building. In each will be placed a bronze tablet immortalizing the names of those who make these departments possible.

Send in your subscription at once to

DR. H. A. B. DUNNING

General Chairman

Charles and Chase Streets, Baltimore, Maryland



Senior Officers' Sashes

Junior Officers' Sashes

Members' Collars
(Optional)

Members' Gowns
(Optional)

Kappa Psi Pharmaceutical Fraternity Regalia

When Ordering
mention Item No.

OFFICERS' SASHES: Set of twelve, all of adopted regulation patterns, and edged with silk braid, with correct emblem embroidered in golden-yellow silk on each, as follows:

1 One, only, scarlet sash of fine satin, golden-yellow braid, emblem "A."

2 Eleven—grey sashes of flannel, scarlet braid, emblems, one each as follows: Greek letter Omega, Palm 99, Short Greek Sword, Shield and Wreath, Crossed Long Greek Swords, Crossed Short Spears, Crossed Pens, Crossed Keys, Mask, Eye, Greek letters "Kappa Psi."

3 Sashes, any of above—each $3.30, per set of 12 ..... $35.75

5 **MEMBERS' COLLARS:** (Optional). Lined and interlined, cadet-gray flannel, scarlet silk braid on both edges, no emblems. Each $2.25. Per dozen, $22.25.

MEMBERS ROBES: (Optional).

Loose fitting, plain draped gowns with hood and cotton cord; waist girdle all of solid black with double facing bands of scarlet sateen down front, each decorated with a scroll design worked in narrow silk braid (soutache) of gray on the scarlet facing.

10 Cambric, trimmed with sateen, any quantity, each $5.90

11 Cotton cashmere with sateen, any quantity, each 6.60

Or same as above with the gray soutache scroll design omitted.

14 Cambric, trimmed with scarlet sateen, any quantity, each $4.85

15 Cotton Cashmere, with scarlet sateen, any quantity, each $5.65

18 **TRIANGLE** (one required), wooden, painted alternating colors, scarlet and gray, each $1.40

SPEARS: (two required). Each with seasoned shaft.

		Each	Pair
27	Gilt bronzed wooden point and ball	$1.10	$2.20
28	Polished brass point and ball	1.15	2.30
29	Nickel plated metal point and ball	1.30	2.60
30	Nickel plated metal point and ball	1.45	2.90

GRECIAN SHORT SWORD: (one required).

31 Leather scabbard, Grecian hilt, steel blade, brass mounted handle and trimming—with stud for belt throg, each $5.80

BELT, FOR SWORD: (one required)

33 Shoulder sling style—heavy webbing, leather throg $1.30

34 Shoulder sling style—all leather, leather throg 2.00

35 Waist belt style—heavy leather 1¾ inch wide, plain metal plate, leather throg (advise color black, brown, red) 2.95

BALLOT BOX: (one required). Exclusive of ballots (See next item).

37 Full secret swan neck pattern, walnut $7.50

38 Full Secret, hinged lid pattern, quartered oak 3.50

39 Semi-secret, oak 1.50

BALLOTS: 50 assorted black and white.

41 China, glazed, per set of 50 ..... .25

42 Rubber-noiseless—black cubes, white balls, per set of 50 ..... .75

GAVELS: (four required).

		Each	Per set of four
45	Oak	$ .40	$1.60
46	Walnut	1.00	4.00
47	Rosewood	1.50	6.00

HOODWINK: (one required). Each equipped with strap to adjust size, and spring attachment to effect quick removal or replacement.

50 Leather, velvet lined, metal eye caps are permanent, each $1.88

51 Similar to 75799 but metal eye lids can be turned open, permitting clear vision without removing hoodwink, each $2.10

52 Special pattern—permits clear view, or shows through red lens, or shuts out light completely $2.50

CHAPTER SEAL—Heavy lever stand.

55 Circular die, 1¾ inch diameter, plain lettering, no emblem or Greek characters $5.25

56 Circular die, 2 inch diameter, plain lettering, no emblem or Greek characters $5.25

Order from: IHLING BROS.-EVERARD CO.
KALAMAZOO, MICHIGAN
Sole Manufacturer of K Ψ Regalia

INFORMATION FOR CHAPTER OFFICERS

1. *Badges, Pledge Buttons, and Recognition Buttons* can be purchased *only* through the CENTRAL OFFICE. Send such orders directly to: Dr. A. R. Bliss, Jr., The Almadura Apts., 1489 Poplar Blvd., Memphis, Tenn.

Other jewelry and novelties can be purchased from the *sole, official* jeweler, L. G. Balfour Co., Attleboro, Mass., *direct,* if a duplicate of the order is sent the Central Office. All designs, etc., are *copyrighted,* and hence may not be used without official license from the Grand Council.

2. *Plaques,* bearing either the *Coat-of-Arms* or the *Insignia* in bronze, can be purchased ONLY from the sole, official jeweler, L. G. Balfour Co., Attleboro, Mass. The designs are *copyrighted.*

3. *Stationery, Dance Orders, Menu Cards,* etc., can be purchased ONLY from the *sole, official stationer,* L. G. Balfour Co., Attleboro, Mass. Designs of badges, coat-of-arms, insignia, etc., are all *copyrighted.*

4. *Flags, Pennants, Banners, Pillow Covers, Skull Caps, Arm Bands,* etc., can be purchased ONLY from the *sole, official* manufacturer, The Aetna Flag & Banner Co., 125 E. 23rd St., New York, N. Y.

5. *Constitutions & By-laws, Rituals, Paraphernalia, Membership Record Cards, Separate Leaf Forms for Secy. & Treas. Books, Transfer Cards,* and *Pledge Cards* can be secured only from the Central Office.

6. *Membership Certificates* are issued *only* by the Central Office through Chapter Secretaries to members in *good standing* with both Chapter and Grand Council at the time of graduation.

7. *The Per Capita Tax or Grand Council Dues,* consisting of 50c per month, for the months of Oct., Nov., Dec., Jan., Feb., Mar., April and May (eight months) of each session, *per active member,* must be paid to the Grand R. & E., Dr. A. R. Bliss, Jr., using the regular per capita forms provided by that Grand Officer.

8. *The Agora Assessment* of $4.00 per year for *each Collegiate Chapter* must also be paid to the Grand R. & E., Dr. A. R. Bliss, Jr. Space for this is provided on the per capita forms. It must be paid by Feb. 1.

9. *The Grand Council Membership Fee* of $2.00 for each and every initiate must be paid to the Grand R. & E., Dr. A. R. Bliss, Jr., *immediately following initiation.* Space for this fee is provided on the per capita forms.

10. *Life Subscriptions to* THE KAPPA PSI MASK must be paid to the *Central Office* by ALL members. See the Constitution for details.

11 *Membership Record Cards* (two for each initiate) must be filled out at the time of initiation, and one sent to the Central Office and the other kept in the chapter file.

12. *Annual Officers' Report Forms,* due in February of each session, may be obtained from the Central Office.

13. *Chapter Letters* must be sent the Central Office by chapter historians by the dates requested. Chapters unrepresented by letter are liable to a fine of $10.00.

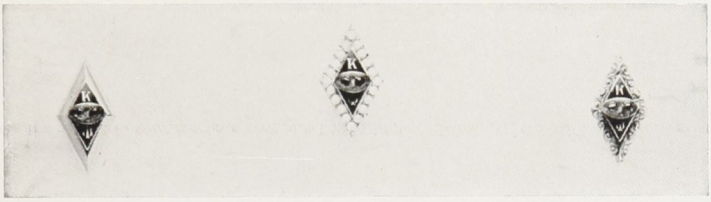
14. THE KAPPA PSI MASK is mailed chapters in bulk, c/o the Historian who is responsible for the *delivery* to active members. Requisition for the number required must be made to the Central Office at least three weeks before date of issue (Jan., April, July, and Nov.). The summer issue is mailed to individual members IF a summer mailing list is furnished by the chapter; otherwise no copies are mailed.

15. *Coat-of-arms or Insignia inserts for college annuals* are furnished by the official publishers—*Geo. Banta Pub. Co., Menasha, Wis.*

16. *Hat Bands.*—Order from Wick Narrow Fabric Co., 931 Market St., Philadelphia, Pa.

NO PERSON IS A MEMBER OF KAPPA PSI UNLESS HIS GRAND COUNCIL MEMBERSHIP FEE, HIS PER CAPITA TAX (to date), AND HIS LIFE SUBSCRIPTION TO THE KAPPA PSI MASK (or installments to date) ARE PAID, AND A MEMBERSHIP RECORD CARD HAS BEEN FILED WITH THE CENTRAL OFFICE. THERE ARE NO EXCEPTIONS.

If an officer finds his duties interfere with his college work he should ask his chapter to give him an assistant who, besides helping him, will be trained to succeed him.



NOTICE: CASH MUST ACCOMPANY ALL ORDERS. NO C.O.D.s

New Price List: Kappa Psi Badges and Guards

PLAIN, polished or Roman, beveled border; or chased or nugget border; with two rubies in the eyes of Mask ..... $ 4.50

CROWN SET BADGES:

Whole Pearls, Opals, or Garnets (or any combination of these alternately or in corners)	14.50
Whole Pearls with Ruby corners	17.00
Whole Pearls with Emerald corners	21.80
Whole Pearls with Diamond corners	50.00
Whole Pearls and Rubies alternately	22.84
Whole Pearls and Emeralds alternately	31.08
Whole Pearls and Diamonds alternately	94.50
Emeralds and Diamonds alternately	112.62
Rubies and Diamonds alternately	103.95
Emeralds with Diamond corners	76.23
Rubies with Diamond corners	65.84
Diamonds with Emerald corners	149.00
Diamonds with Ruby corners	145.54
Diamonds, entire	174.25

Sapphire mounting, same prices as rubies.

Both eyes of Mask set with—

Brilliant Cut Diamonds, extra cost	12.00
Rose Diamonds, best quality, extra cost	6.00

Platinum Setting: $25.00 additional. 18K White Gold: $5.00 additional.

CHAPTER GUARDS:

	Small or Medium	Large
Single Letter—Plain Gold	$2.63	$2.89
Close set pearl	4.20	5.25
Crown set pearl	5.78	7.35
Double Letter—Plain gold	3.68	4.20
Close set pearl	7.35	8.40
Crown set pearl	10.50	12.60

Additional price per stone

Rubies, $0.53 Emeralds, $0.79 Diamonds, $3.15

The Fraternity coat-of-arms with safety clasp and guard chain attachment may be had if preferred. They are furnished in gold in the miniature size at $2.63 or the medium size at **$3.15.**

18K White Gold	$2.63 additional
Platinum Settings—Single Letter	5.25 additional
Platinum Settings—Double Letter	10.50 additional

All jewels are carefully selected and matched and of brilliant cut. The badges are of 14K gold and are provided with safety catches. Three initials and chapter letters will be engraved on the backs free of charge IF cash accompanies order. All badges are made with the Mask raised in gold and a ruby inserted in each eye.

PLEDGE BUTTONS will be furnished for 35c apiece. These are made of gold plate hard French enamel, and a solid back. Each chapter should have a supply of these buttons on hand as the property of the chapter.

RECOGNITION BUTTONS, 75c each.

WALL PLAQUES: Insignia or Coat-of-arms in bronze, $5.50 each.

TERMS

ALL ORDERS MUST BE SENT TO THE G. R. & E., DR. A. R. BLISS, JR., THE ALMADURA APTS., 1489 POPLAR BLVD., MEMPHIS, TENN. No jewelers will furnish Kappa Psi badges. CASH MUST ACCOMPANY ALL ORDERS.

Kappa Psi jewelry other than badges MUST be ordered from the OFFICIAL KAPPA PSI JEWELER—there is only one—The L. G. Balfour Co., Attleboro, Mass., and a duplicate order sent the G. R. & E.

About Banta's Greek Exchange

In "The Gossip of the Greeks" department of *The Delta Upsilon Quarterly* the writer recently said in a review of the various fraternity magazines; "Now let us turn to the finest magazine of them all: BANTA'S GREEK EXCHANGE. We wonder what has happened to this sheet. It used to be good, but the October issue seems like a real honest-to-goodness magazine that ought to compete with the *North American Review* as well as *College Humor*. Any chapter house library, that has not this issue on the table, is really missing the best thing out, not even excepting our own *Quarterly*." And then he goes on to devote two pages to an outline of its contents.

The Executive Chapter of Kappa Psi realizing the value of this excellent publication, urges every member to become a reader. Send two dollars to George Banta Publishing Company, Menasha, Wisconsin, for a year's subscription.