

1918

Old School Catalog 1918-19, The School of Pharmacy

Valparaiso University

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Thrapp

BULLETIN OF VALPARAISO UNIVERSITY

JULY, 1918

*Thrapp,
AVILLA,
IND.*

THE SCHOOL OF
PHARMACY

1918-1919

*Valparaiso IND.
MAX THRAPP*



PUBLISHED BY THE UNIVERSITY
VALPARAISO, INDIANA

2747

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FACULTY

- OLIVER P. KINSEY, A. M.
Acting President of the University
- GEORGE D. TIMMONS, Ph. C., B. S.
Dean of Pharmacy and Professor of Chemistry
- EBER H. WISNER, Ph. C., B. S.
Professor of Pharmacy and Materia Medica
- MASON L. WEEMS, A. M.
Professor of Botany and Physiology
- JOHN H. CLOUD, A. M.
Professor of Physics
- WILLIAM O. SPEER, Ph. D.
Professor of Analytical Chemistry
- CHARLES H. DE WITT, M. S.
Professor of Bacteriology
- LEE F. BENNETT, A. M.
Professor of Geology and Mineralogy
- KATHERINE E. CARVER, A. M.
Professor of Latin
- GERTRUDE E. ABY, Ph. B.
Professor of French
- VIRGINIA MORA
Professor of Spanish
- ALPHEUS A. WILLIAMS, A. M.
Professor of Commercial Law and Accounting
- GERALD H. STONER, Ph. G., M. D.
Professor of Therapeutics and Toxicology
- JOHN L. SAHM, Ph. G.
Professor of Commercial Pharmacy
- JOHN BOMAN, LL. B.
Professor of Pharmaceutical Jurisprudence

CALENDAR FOR THE YEAR 1918-1919

FALL QUARTER

October 1, 1918, to December 12, 1918

- October 1. Tuesday. Fall Quarter opens 8:30 a. m.
Organization of classes and assignments made.
- November 28. Thursday. Thanksgiving Holiday.
- December 10. Tuesday. Quarterly examinations begin.
- December 12. Thursday. Fall Quarter closes.

WINTER QUARTER

December 17, 1918, to March 6, 1919

- December 17. Tuesday. Winter Quarter opens 8:30 a. m.
Organization of classes and assignments made.
- December 25. Wednesday. Christmas Holiday.
- March 4. Tuesday. Quarterly examinations begin.
- March 6. Thursday. Winter Quarter closes.

SPRING QUARTER

March 11, 1919, to May 29, 1919

- March 11. Tuesday. Spring Quarter opens 8:30 a. m.
Organization of classes and assignments made.
- May 27. Tuesday. Quarterly examinations begin.
- May 29. Thursday. Forty-sixth Annual Commencement, 10:30
a. m. Spring Quarter closes.

SUMMER QUARTER

June 3, 1919, to August 14, 1919

- June 3. Tuesday. Summer Quarter opens 8.30 a. m.
Organization of classes and assignments made.
- August 12. Tuesday. Quarterly examinations begin.
- August 14. Thursday. Summer Quarter closes.

On alternate Saturdays of the Fall and Summer Quarters the University will be in session. This is necessary in order that twelve weeks of work may be given during these quarters.

VALPARAISO UNIVERSITY

In the fall of 1873 a school was organized in Valparaiso, Indiana, which is now known as Valparaiso University. This Institution has never received financial aid from the State nor a dollar of endowment from any source. It has grown steadily from its inception, and now offers exceptional educational opportunities. The first year's enrollment was thirty-five students. The school year, 1916-17 found nearly six thousand different students regularly enrolled. Its greatest advertisement is the host of satisfied students sent out from its walls, and its greatest asset a grateful alumni.

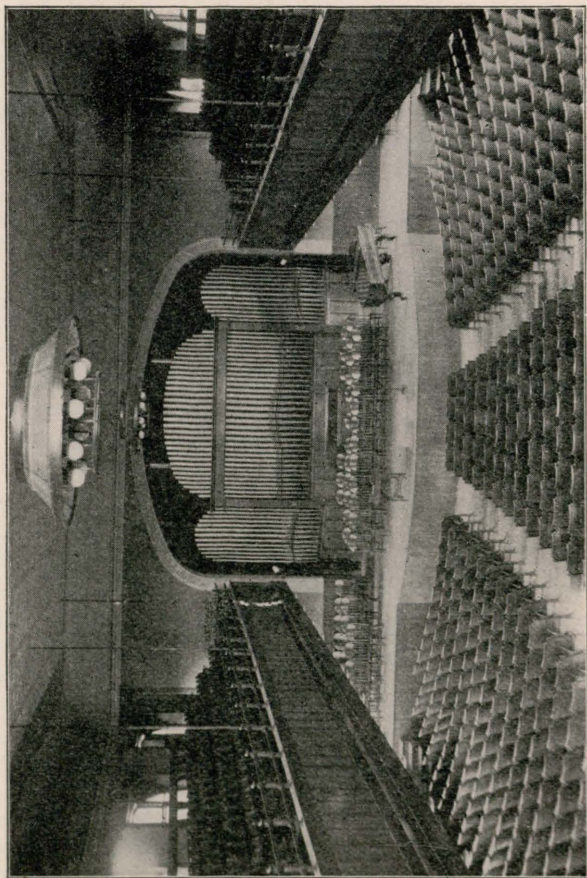
These facts are conclusive evidence of the high merit of the Institution. Steady growth and unparalleled prosperity could not continue for over a third of a century unless the work offered and the equipment furnished were such as to satisfy the real needs of the average student.

Location

Valparaiso is situated in Northern Indiana, about fourteen miles from the southern shore of Lake Michigan. The climate is ideal. Surrounding the little city is a prosperous farming community, while an hour's ride takes one to the metropolis of the west, Chicago. Valparaiso is reached by three railways, the Pennsylvania, the Grand Trunk and the Nickel Plate, and because of the volume of passenger traffic made largely by the University, most through trains stop, thus greatly increasing traveling facilities.

Valparaiso

Valparaiso is a prosperous city of nearly ten thousand people. It has well paved streets, cement walks, a complete sewerage system, both gas and electric lighting plants, interurban street car service, and an excellent water supply doubly safeguarded by an expensive filter plant. Its public school system is a model, and three beautiful city school buildings are supported, in addition to two parochial schools. Eight churches are located within the city limits. The new Carnegie Library is located but a few blocks from the University.



AUDITORIUM INTERIOR

The University

The material equipment of the University includes more than a dozen large buildings, each constructed and arranged for its special purpose. There are over one hundred regular instructors on the teaching staff, any one of whom can be reached by a member of the student body in need of private assistance in his school work. The long established policy of this University is to assist the student in every way possible in quickly finding the work he seeks and for which he is particularly fitted.

Schools

There are now established and in active operation more than a dozen departmental schools. Among these may be mentioned Classic, Scientific, Educational, Law, Medicine, Pharmacy, Dentistry, Engineering, Manual Training, Music, Art, Commercial, Phonography, Domestic Science, etc.

Societies

College Fraternities of all kinds have never existed in the University, and are not only discouraged but barred. State and Sectional societies, for example, the Illinois Society, the Southern Society, the New England Society, the Texas Society, etc., are encouraged and rooms are furnished at reasonable intervals for their meetings and programs. Many other societies of various kinds exist, among which are the International Society, the Catholic Society, and the Scientific Society.

In this connection may be mentioned the Young Men's Christian Association, which occupies its own building, and the Young Women's Christian Association, an active organization which does much to promote the welfare of college women.

Athletics

While the policy of the University has always been opposed to college athletics in the ordinary acceptance of the term, due encouragement is given to such outdoor sports as are not inconsistent with normal college activities. The University Park, in which are found the baseball field, a new quarter mile track and the tennis courts, is situated a few blocks from the campus. An

interdepartmental baseball league is maintained, which includes teams from most of the departments.

A large gym 90 x 120 feet, has recently been erected in which basketball is played in season.

Sager's Lake, a beautiful body of water located about one-half mile from the University, offers splendid opportunities for rowing and swimming in summer and for skating in winter.

University Band and Orchestra

A very large Music Department makes it possible to support these organizations. Anyone fairly skilled in the use of a musical instrument may become a member and receive, without any expense, training from the director and the practice afforded by frequent rehearsals. Uniforms are furnished, and to a limited extent, band instruments as well, but it is suggested that the student bring with him the musical instrument he desires to use. A college choir gives to those interested in vocal music, without any additional tuition, most excellent training, amounting in some respects almost to private instruction.

THE SCHOOL OF PHARMACY

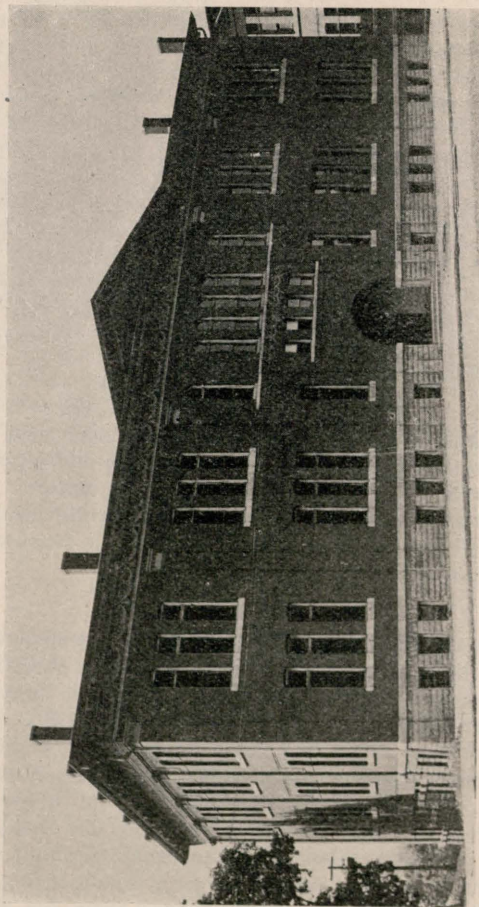
The School of Pharmacy graduated its first class in 1893, and originally offered a fifty weeks' course. This department has grown with the University as well as with the times, and now offers, and has offered for ten years past, a two years' course, the fifty weeks' course having been discontinued in 1908. There is also offered a Pharmaceutical Chemist Course covering two years of forty-eight weeks each, and a Bachelor of Science in Pharmacy Course covering three years of forty-eight weeks each. All recitations and laboratory periods are fixed between the hours of 7:30 A. M. and 6:00 P. M. Hours not scheduled for class work during the day, as well as evenings and Saturdays, are at the student's disposal for home study and recreation. The instruction periods are properly apportioned to the three majors, chemistry, pharmacy and materia medica. How well this is accomplished may be seen by a careful study of the curriculum by hours as shown on pages 18-24 inclusive.

The Faculty

The faculty is made up of regular resident men who make teaching a profession, and not of pharmacists and physicians who make the giving of instruction a secondary matter. However, those teachers having most to do with pharmaceutical training are registered pharmacists with experience as owners and managers of pharmacies.

Equipment

The School of Pharmacy is housed in commodious quarters, the building being a substantial brick and stone structure, 60x120 feet, three stories high, heated with steam and lighted by both gas and electricity. It was first occupied in 1902. It contains the various lecture rooms and laboratories in which the pharmacy work is presented, with the exception of botany, physiology and bacteriology. These subjects are taught in the large Auditorium building directly across the street and in the Medical building immediately adjacent. Convenient accessibility of all class rooms and laboratories must be recognized as a factor, and is here made a prominent feature. The main lecture room for chemistry is 40x60 feet, with raised floor, desk seats for one hundred ninety-two students, black board on all sides of the room, and a well equipped lecture desk, supply and apparatus cases and stereopticon. The main chemical laboratory, 40x60 feet, has capacity for two hundred eighty-eight students working at different hours



PHARMACY BUILDING

of the day, no two having to use the same locker or apparatus. The pharmacy laboratory, 40x60 feet, is equipped for two hundred fifty-two students working in different sections, no two using the same apparatus or locker. These rooms have windows in three sides, insuring ample ventilation. The quantitative analytical laboratory accommodates one hundred sixty-two students. In all these laboratories each individual desk is supplied with gas, running water, and waste trough, thus avoiding numerous trips and unnecessary delay at a general water supply and general waste trough. Convenient to the quantitative laboratory is located the balance room, equipped with sixteen high grade Sartorius, and Becker balances, the use of which insures that high degree of accuracy necessary to make practical the work presented. The laboratories are well equipped with hoods so that noxious gases may be removed.

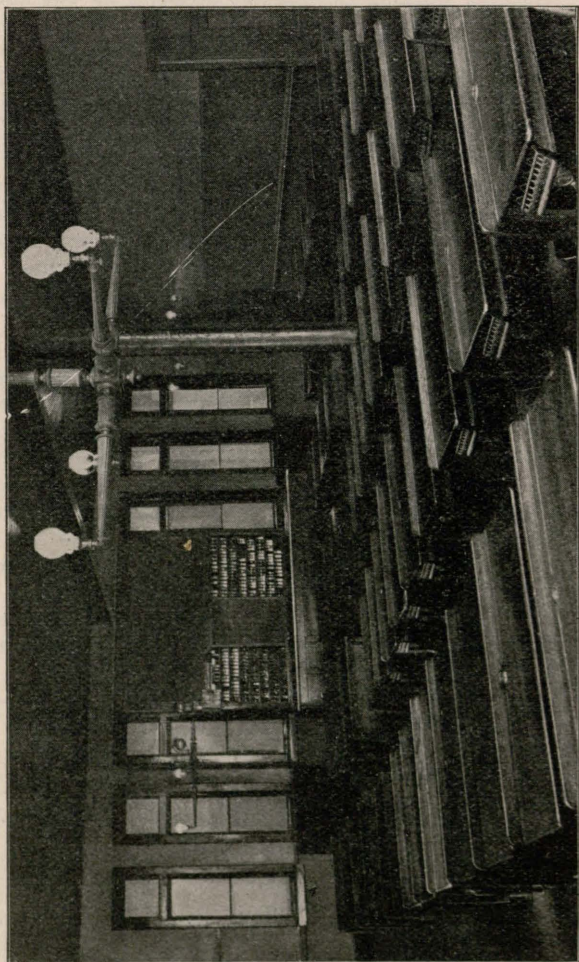
The dispensing laboratory has lately been remodeled and is equipped with regular dispensing cabinets and all the appurtenances of the up-to-date prescription case. A cabinet extends entirely around the room filled with the regular shelf ware of a retail pharmacy. Each laboratory has its side room or store room immediately adjacent to it, so that the student is not compelled to lose the time necessary for trips to a general store room. The materia medica room is fitted up with individual desks and lockers for pharmacognosy. It also contains large display cabinets of chemicals and crude drugs, open to the close inspection of the student at any time. Besides these there are also display cabinets of chemical and pharmaceutical apparatus convenient to all students interested.

On the same floor is a large general museum of especial interest to the student of chemistry and pharmacy because of the collection of minerals contained therein. Special separate laboratories are provided for work in physics, botany, physiology and bacteriology. All these laboratories are adequately equipped with material and apparatus, each of the last three named having separate microscope equipment of the celebrated Bausch and Lomb manufacture. The student body has at its disposal a total of eighty-four high grade microscopes in these laboratories.

The departments of Physics, Chemistry, Botany and Bacteriology have each a stereopticon in their respective lecture rooms.

Library and Museum

The general college library of 12,000 books, which includes a well equipped pharmaceutical library, is open to the pharmacy



CHEMISTRY LECTURE ROOM

student, as is also the museum. Practically all the pharmacy journals are taken, and these are kept in the pharmacy building at the disposal of students of pharmacy only, and arrangements are made whereby they may be taken out for a limited time for home reading. There is also an excellent working card indexed library of chemistry and pharmacy text and reference books of more than 500 volumes kept in the pharmacy building for the greater convenience of this department.

Besides the school libraries the entire equipment of the Carnegie Library is also at the disposal of the student body.

Study Trips

Annual excursions to manufacturing plants, both chemical and pharmaceutical, are arranged for by the faculty and attended at the option of the individual student. In this way practical information is acquired regarding the preparation of chemicals and galenicals upon a commercial basis. Itineraries are so arranged that several plants are visited each trip so that maximum benefit is obtained at minimum expense. Each year a visit is planned to the large pharmaceutical laboratories and manufacturing plants of Detroit or Indianapolis. Proximity to Chicago as well as to the great oil refineries, iron and steel producing plants, cement works, etc., offers special inducement to those interested in the industrial applications of their chemistry and pharmacy.

The Valparaiso Pharmaceutical Association

The organization has for its object the promotion of social intercourse as well as the stimulation of professional interest among the students of pharmacy. It is purely a student organization and any student in the department is eligible for membership. The society meets twice monthly, and the programs prepared are always both interesting and instructive. In addition to student programs and lectures by the faculty the Association is addressed during the year by men of prominence in pharmaceutical circles. Among these may be mentioned John Uri Lloyd, manufacturing chemist; L. E. Warren, chemist in the laboratory of the American Medical Association; O. V. R. Smith, with Parke, Davis & Co.; N. I. Taylor, with Frederick Stearns & Co.; N. S. Amstutz, research engineer; J. A. Hynes, chief chemist U. S. Service, Chicago port of entry; H. E. Barnard, Indiana Food and Drug Commissioner; G. H. Hoover, chief chemist Chicago division U. S. Food and Drug Commission; F. C. Dodds, secretary Illinois Board of Pharmacy; F. A. Miller, botanist Eli Lilly & Co.; Hugh

Craig, with the Nyal Co.; J. M. Barrett of the National Association of Retail Druggists; Dr. W. W. Stockberger, Botanist in charge of Bureau of Poisonous Plant Industry, Washington, D. C.; Prof. Henry Kraemer, Professor of Materia Medica, University of Michigan; Dr. W. D. Henderson, of University of Michigan Extension Department; W. Grant, Chief Chemist, Gary Steel Laboratory. Besides these lectures given under the auspices of the Association, general lectures are occasionally delivered by such men as Dr. J. N. Hurty, of the Indiana State Board of Health, Surgeon L. L. Lumsden of the U. S. Public Health Service, and Dr. H. W. Wiley, late chief of the bureau of chemistry.

The student library in the Pharmacy building was made possible by this society. A nucleus of one hundred dollars was originally donated from their treasury which has since been added to very materially, thus firmly establishing an excellent working library to which the student has convenient access.

Pharmacy as a Profession

To young men and women who have not yet made a choice of a vocation, Pharmacy is commended for serious consideration. In these days some discussion is heard of drugless therapy, and prediction is sometimes made that in a short time medicines will no longer be used. If those who make such statements were informed as to the length of time devoted to materia medica and therapeutics in the curriculum of the modern medical college, they would be convinced that the day when drugs will be discarded is indeed far in the future. While it is doubtless true that the abuse of drugs will be discouraged to an even greater extent than at present, it is also true that the intelligent use of carefully prepared and standardized medical products will assume a greater importance. The sale of drugs by irresponsible persons such as peddlers and general storekeepers will be restricted or forbidden, leaving this business to properly qualified pharmacists. Remuneration for competent drug clerks is higher at the present time than ever before. Furthermore, the man working on a salary has an opportunity, if he exercises industry and thrift, of entering business on his own account with every prospect of success. It should be noted also, that while a majority of pharmacy graduates devote themselves to retail pharmacy, there are other opportunities open to them. Among the graduates of the School of Pharmacy may be found a considerable number who hold positions as traveling salesmen for wholesale drug firms and pharmaceutical manufacturers, chemists in

laboratories of manufacturing pharmacists and in other chemical laboratories, chemists in food and drug laboratories, teachers of pharmacy, chemistry, etc. While the department does not obligate itself to secure employment for graduates, the demand by employers for its graduates is usually far in excess of its ability to supply. If the classes were several times as large as at present there would be little difficulty in finding positions for all completing the course.

Women in Pharmacy

There is no greater opportunity offered to women at this time than the study of Pharmacy. So many Chemists and Pharmacists of our country have answered the call to the Colors, that the number necessary for the Industrial Laboratories is seriously depleted. These vacancies it would seem must be filled by women.

The study of Pharmacy and Chemistry is particularly interesting to women. Valparaiso University has always had a number of women in its School of Pharmacy. It is upon the request of those who know, that an appeal is made to every woman, who has an inclination for knowledge in any profession, to earnestly consider the advantages both to herself and to her Country that may be found in pursuing the study of Pharmacy.

Necessity for College Training

The Federal Pure Food and Drugs Act together with similar State Food and Drug Laws make demands upon the pharmacist that can be met only by a college trained man. These together with the more stringent pharmacy laws recently enacted in very many of the states and a general public awakening to the needs of accurate and reliable analytic work are surely signs pointing in but one direction. This condition is being thoroughly recognized by the legislatures of many states, and in many instances there is already a legal demand that the candidate appearing for examination before the state board be a graduate of a college of pharmacy. The advisability of anticipating such a condition appeals to every one.

The pharmacist must be more than a mere salesman. He is held responsible for the drugs dispensed by him, and must therefore be qualified to judge of their identity, strength and purity. There already exists a demand, certain to be increased in the near future, for college trained pharmacists. This demand on the part of the public will in time be made universally statutory. While all these requirements and demands upon the pharmacists

make it somewhat more difficult to enter the profession, the ambitious person will not allow this to deter him. After he has prepared himself he finds that his professional standing and remuneration are greater because of these laws, and further that there is a compensation in the protection of these very laws which at first seemed somewhat exacting.

At the present time there is an ever increasing demand for the chemist. In no line of human endeavor is expert knowledge so sorely needed. In the Pharmaceutical Chemist Course, the student receives such intensive and yet such varied training as will qualify him for a responsible position. In this course the blending of the chemistry with other sciences closely akin makes it an exceedingly desirable choice, and particularly, just at this critical time.

The University Year

The University year is of four terms of twelve weeks each. This corresponds to the Pharmaceutical Chemist year, which course covers two such years. The Graduate in Pharmacy year includes three terms of twelve weeks each, beginning in October and closing in May. Two such years are required for graduation, with an interim of three months between the junior and senior years.

Each term opens on a Tuesday at 8:30 A. M. By five o'clock all classes are met, organized and lessons assigned, so that regular lectures and recitations begin Wednesday and continue during that week and including Saturday. For the following ten weeks classes are held five days a week, with occasional laboratory work given on Saturday. During the twelfth week term examinations are held and on Thursday the quarter closes. The succeeding term opens the following Tuesday.

Classes are taught from 7:30 in the morning until 6:00 at night. This does not mean that a student necessarily takes either a 7:30 A. M. or 5 P. M. class. That is usually optional, as other sections of the same work are almost always obtainable at other periods of the day. The only holidays granted throughout the Pharmacy year are Thanksgiving Day and Christmas Day. It will thus be seen that there is given in this School an actual number of hours far greater than the usual nine months' course really contains.

Texts

Text books in many instances may be rented. In other cases

selection of subjects is made with regard to the needs of the student, it makes this course preparatory to board examinations. Non-registered pharmacists may avail themselves of this special course for reviewing those particular subjects in which they have developed least strength, and they may enter any term in the year.

Advantages

The School of Pharmacy, being located in a small city, is free from many influences which often detract from a close attention to study upon the part of the student. Thus more can be accomplished in the same length of time than is accomplished where the student's attention is divided between school work and outside employment and diversions.

It is not considered advisable for students to find employment in stores for any considerable part of their time while pursuing their school work.

The practical side of pharmacy is in no way underrated at this Institution, but it is to the student's best interest to give his undivided attention to his studies while taking the course. Certainly not more than one-half as much can be learned in a school of pharmacy offering courses purporting to be of similar lengths where the time is equally divided between school work and store practice. It is also manifestly unfair to those who do not do outside work if the lessons are not graduated to the whole time student and equally objectionable if the assignments are made shorter and less difficult to accommodate those who are devoting only half their energies to school work.

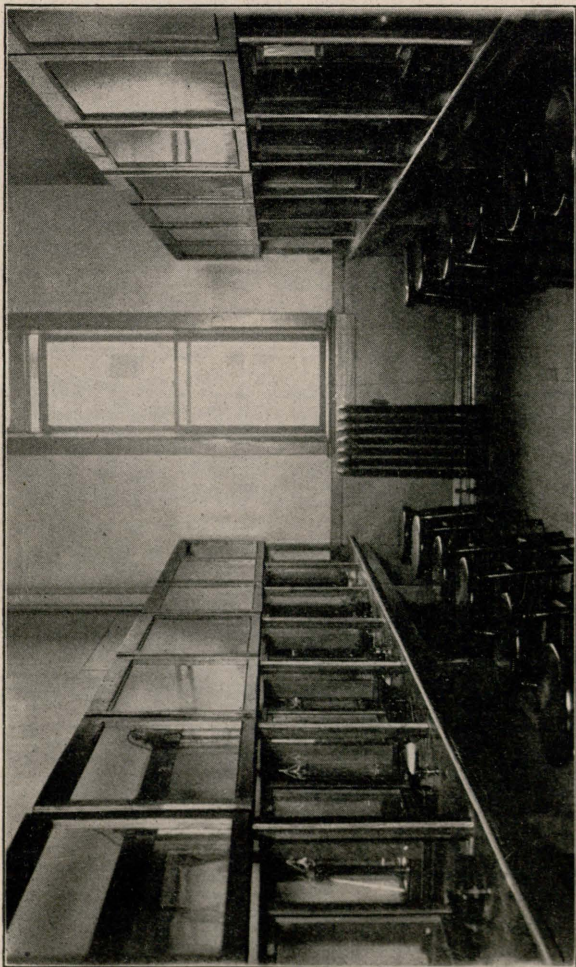
It must be understood that here instruction is given five days in the week throughout the entire nine months.

The living expenses in a small city are much lower than in a large city. This makes it possible to take the complete course at much less expense than would be incurred when taken in schools differently situated.

Requirements for Admission

The educational requirement for admission to the course for the degree of Graduate in Pharmacy (Ph. G.), is a certificate of having completed at least two years of a recognized high school course, or the equivalent as shown by properly certified credentials or as determined by examination.

For the course for the degree of Pharmaceutical Chemist (Ph. C.), or for the degree of Bachelor of Science in Pharmacy (B. S.



A SECTION OF THE BALANCE ROOM

in Pharm.), there is required a certificate of graduation from a recognized high school offering a four years' course, or the equivalent as shown by properly certified credentials.

For the Post-Graduate Course only those may enter as candidates for a degree who have completed a Ph. G. course in this or some other recognized school of pharmacy.

Anyone may enter, and at any time, for special work or for purpose of review not leading to a degree.

In case the applicant cannot meet the entrance requirements, his attention is called to the high school facilities of the University.

Each applicant for admission to any of the courses must be of good moral character and not less than seventeen years of age.

Applicants for admission to any of the courses, upon entrance must present credentials showing their qualifications.

Requirements for Graduation

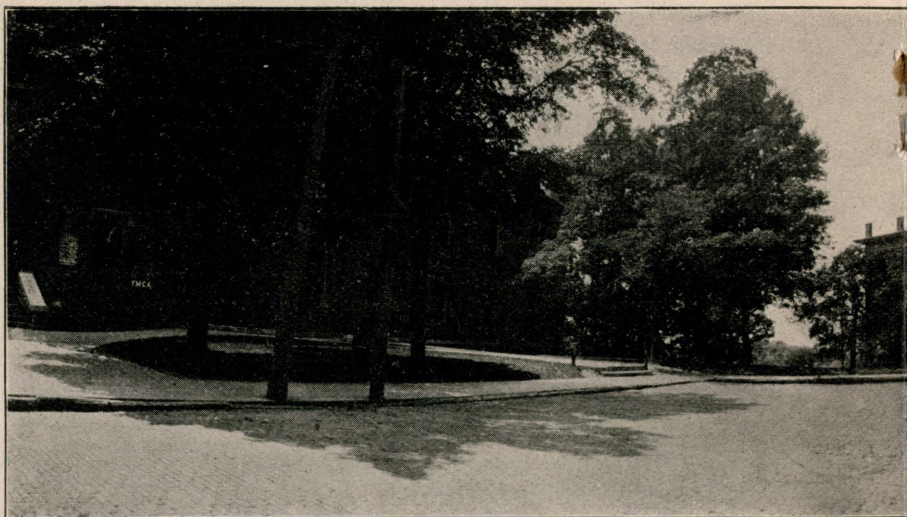
Candidates for graduation must have met the admission requirements and must have completed all the subjects designated in the course of study with a grade equivalent to at least 80%, and with a record of attendance not falling below 80%. Examinations are given at the end of each quarter upon the subjects covered during that term. There are also final examinations in Chemistry, Materia Medica, and Pharmacy which are obligatory, 80% being the minimum passing grade.

Credits will be accepted from other institutions where the admission requirements, number of hours actually spent in school and the character of the work are equivalent to that offered by this school, but anyone who receives a degree in any of the courses in pharmacy must have attended the full Senior year in this institution.

The degree of Graduate in Pharmacy (Ph. G.), will be conferred upon those completing the seventy-two weeks course and also those completing the thirty-six weeks Post-Graduate course who were eligible to enter for a degree.

The degree of Pharmaceutical Chemist (Ph. C.), will be conferred upon those completing the ninety-six weeks course.

The degree of Bachelor of Science in Pharmacy, (B. S. in Pharm.), will be conferred upon those completing the one hundred forty-four weeks course. All fees must be paid before a degree is granted in any course.



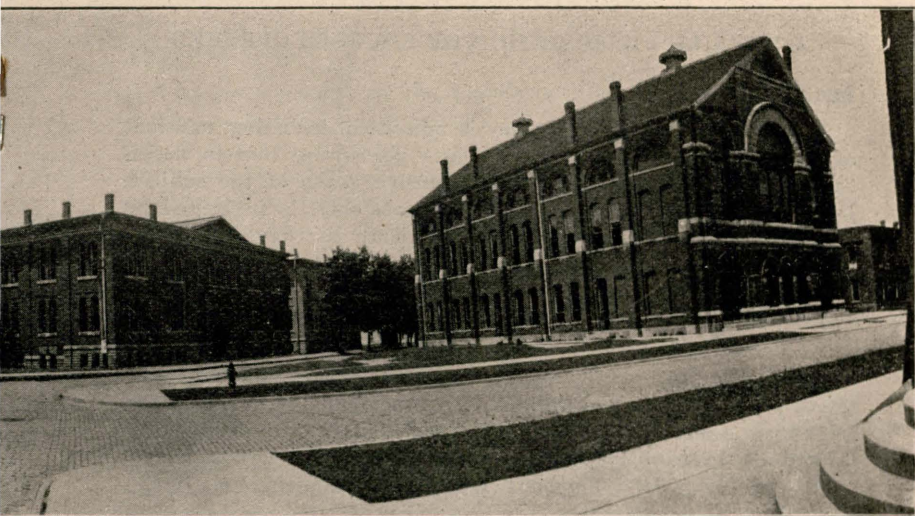
OLD COLLEGE BUILDING

PHARMACY

COLLEGE



SAGER'S LAKE



BUILDING

MEDICAL BUILDING

AUDITORIUM

E PLACE



Pharmacy Building as seen from the Pennsylvania and Nickel Plate Railroads.
Drug Garden in foreground

A DETAILED DESCRIPTION OF COURSES OFFERED

Inorganic Chemistry I

An introduction to chemistry is presented, including sufficient of the fundamental theories and laws pertaining thereto necessary to give the beginner a comprehensive grasp of the subject. Descriptive work, including the non-metals only, is presented by lecture and demonstration. Time, one hour per day for twelve weeks, or sixty hours. Text used, Smith's College Chemistry.

Experimental Chemistry I and II

Laboratory experiments bearing directly upon the class work offered are performed by each student. As much of the quantitative is introduced as possible. This accompanies Courses I and IV and a credit in each course is made subject to satisfactory laboratory work. Time, each one hour per day for twelve weeks, or sixty hours. Text, Timmons' Laboratory Manuals, Vols. I and II.

Chemistry Drill

This is a drill class, obligatory to all taking Chemistry I. The time is given to symbol, formula and equation writing, solution of problems, and general quiz work. Time, three hours per week for twelve weeks, or thirty-six hours.

Inorganic Chemistry II

Devoted to the study of theoretical and elementary physical chemistry. There is discussed the atomic theory; equivalent and atomic weights and methods of their determination; valency; electrolysis and the ionic theory; Mendelejeff's law; general properties of gases—Boyle's and Crales' laws; diffusion, liquefaction; kinetic theory; general properties of liquids—vapor density, vapor pressure, freezing point; solution; osmotic pressure; thermo-chemistry; and crystallography. Time, one hour per day for twelve weeks, or sixty hours. Text, Newth's Inorganic, Part I.

Arithmetical Chemistry

Covering practical chemical problems together with problems arranged to emphasize the relations and laws discussed in class. This course accompanies and is essential to the preceding one. No text required. Problems arranged by the instructor. Time, three hours per weeks for twelve weeks, or thirty-six hours.

The Drug Garden

At the outbreak of the European War, the supply of medicinal plants was greatly reduced. To meet this situation Botanists of this country began the study of the culture of the important plants for medicinal use. At this time Valparaiso University established its medicinal plant garden for the purpose of doing its share in helping to solve this problem as well as to make the study of *Materia Medica* far more interesting.

During the past four years, over one hundred important drug plants have been collected and planted in our Drug Garden. As there are a great variety of conditions, from full shade to full sun, and many kinds of soil in this garden, it is possible for us to maintain as wide a collection of important plants as can be found in any single climate.

Since our Ph. C. Course requires students here forty-eight weeks of the year, many students have found it interesting to work out, not only the direct problems of plant culture, but also the problems of combating destructive insects on both food and chemical plants. For instance, it has been found that potatoes planted around a field of belladonna will keep the bugs from destroying the belladonna. This means a great saving to growers of this very important plant. Again, what is known as a "trap crop" has been found for the protection of potatoes, in the hyoscyamus plant. It keeps bugs away from potatoes.

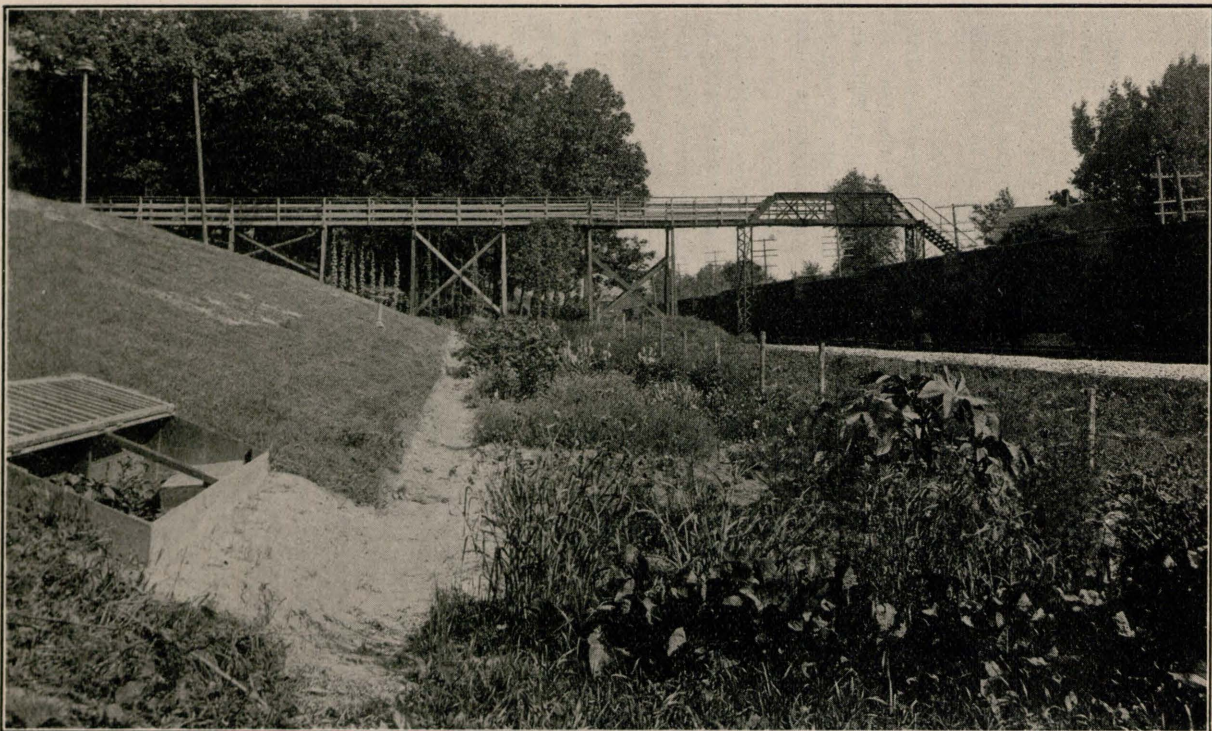
The Drug Garden is thus a very important accessory to the lecture and laboratory work, its usefulness being increased by its proximity to the Pharmacy Building.

Analytical Chemistry I

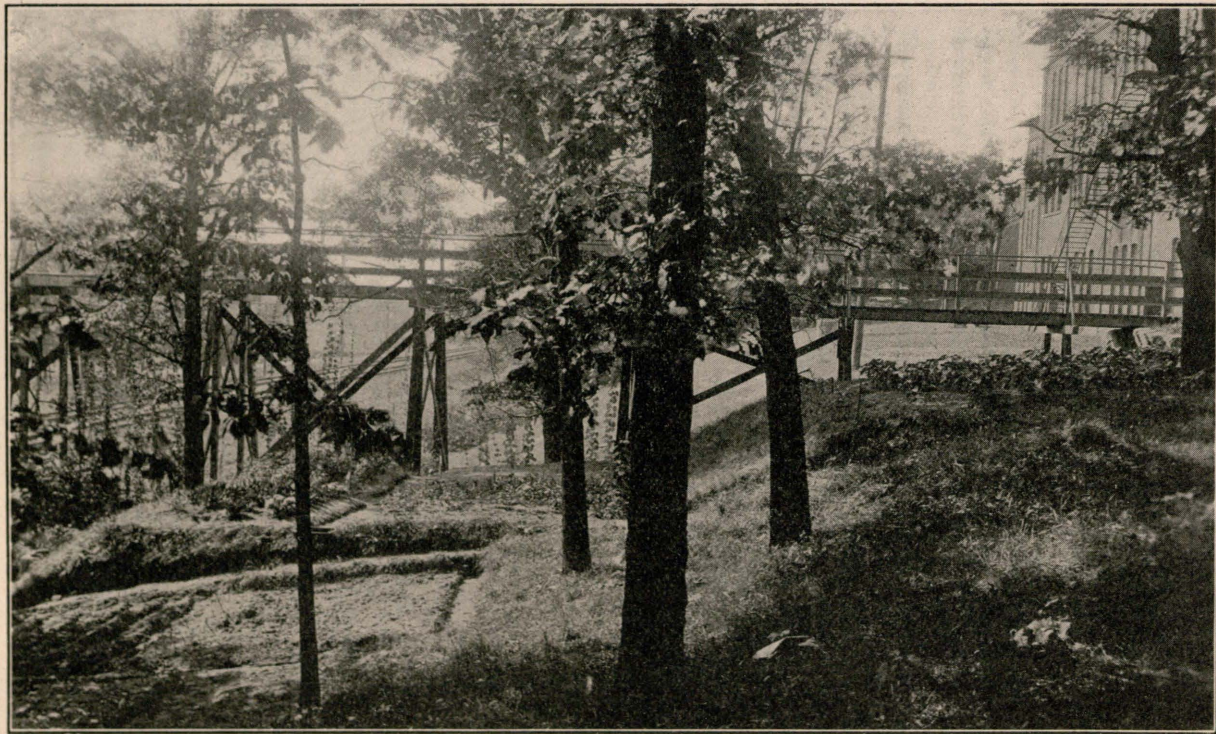
This is a laboratory course in qualitative analysis with lectures and quizzes two hours per week. Systematic and special methods are presented for separating and recognizing all the common metallic and acid radicals. Particular attention is given to the determination of unknowns. Time, two hours per day for twelve weeks, or one hundred twenty hours. Text, Timmons' Qualitative Analysis.

Inorganic Chemistry III

Resume of Chemistry I, going into much more detail, with especial attention given to the pharmaceutical and manufacturing



Sunny Garden, looking toward the Shade Gardens, containing seventy-five beds of different medicinal plants. Pennsylvania R. R. on right



A portion of the Shade and Semi-Shade Gardens, with forty beds of forest plants. Looking toward Students Bridge and the Sunny garden. Pharmacy Building on right
These gardens contain as great a collection of medicinal plants as may be found in any single climate

applications of this portion of chemistry. A thorough study of all non-metallic elements, including arsenic, antimony, and bismuth. Time, one hour per day for twelve weeks, or sixty hours. Text, Newth, Part II and Part III to Chapter IV.

Analytical Chemistry II

Gravimetric analysis is made the major throughout this term, although the qualitative composition of substances as unknowns is first determined and following this the quantitative relationship. Advanced qualitative work including tests for common organic acids is given to fill in all spare time which the necessity of certain gravimetric operations admit. Lectures and quizzes two hours per week. Time, two hours per day for twelve weeks, or one hundred twenty hours. Text, Newth's Qualitative and Quantitative Analysis.

Volumetric Analysis

The determinations made by the student in this course embrace acidimetry and alkalimetry, oxidation and reduction, and volumetric precipitation. A considerable number of the Pharmacopoeial assays are made. The student receives a thorough training in preparation of standard solutions. The laboratory work is accompanied by lectures and quizzes. One hour per day for twelve weeks, or sixty hours. Text, Newth's Qualitative and Quantitative Analysis.

Inorganic Chemistry IV

A study of the spectroscope and its applications, careful consideration of all the common metals and their compounds together with sufficient consideration of rare metals. Special attention given to official substances and to those having pharmaceutical or commercial importance. Radium and radio-activity and its application discussed. Time, one hour per day for twelve weeks, or sixty hours. Text, Newth's Inorganic, Part III completed.

Organic Chemistry I

An introduction to organic chemistry, and the aliphatic series covered. Optical activity discussed and the polariscope used. The subject of stereo-isomerism considered and illustrated with models. Experiments suggested by the text and others supplemental thereto, performed by the instructor. Time, one hour per day for twelve weeks, or sixty hours. Text, Remsen.

as found in powdered drugs will be readily recognized and hence the powder quickly identified. Time, one hour lecture and recitation and one hour laboratory daily for twelve weeks. Text, Steven's Plant Anatomy.

Histological Pharmacognosy

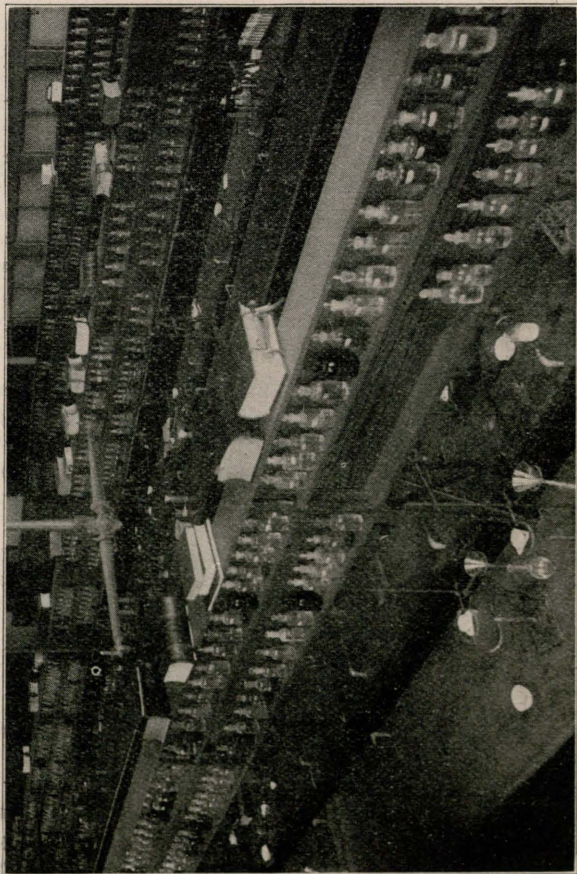
This work follows the courses in botany and deals with the microscopical study of drugs. Cells, tissues, hairs, granules, crystals, etc., as they occur in plant parts in section, powder, and precipitate are studied under the microscope. By comparing samples with standards the student is taught to identify the histological elements as an aid to their identification and to the detection of adulterants. No text required. References, Jelliffe, Greenish, Schneider, Sayre, Winton, Kramer and Mansfield. Time, one hour per day for six weeks, or thirty hours.

Pharmaceutical Physics

This course presents a resume of elementary physics, and includes motion; inertia; energy; hydrostatics; pneumatics; thermometry; dispersion and polarization; magnetism and electricity. Throughout the quarter the application of the principles of physics to pharmaceutical problems is made prominent. An accompanying laboratory course is arranged to emphasize those principles introduced during the lecture and recitation periods. Time, five hours per week of lecture, and five hours laboratory for twelve weeks, or one hundred twenty hours in all. Text, Cloud's Principles of Physics.

Physiology

A careful study of the structure of the cells, tissues, and organs of the human body is followed by a consideration of the co-operation and co-ordination of the various parts, leading to the study of the systems of organs, viz: the osseous, muscular, circulatory, respiratory, digestive, excretory and nervous systems. Attention is directed to action of enzymes, hormones, secretins and various other cell products and agents. Lectures and recitations are accompanied by laboratory demonstrations and experiments, and while this course is in no wise connected with that given to medicine, the extensive physiological laboratory equipment of the Medical Department is at the disposal of the pharmacy student. Texts, Hough and Sedgwick or Martin's Human



A PORTION OF THE LABORATORY FOR QUALITATIVE ANALYSIS

Body. Time, five hours per week lectures and recitations and two hours per week laboratory for twelve weeks, or eighty-four hours in all.

Mineralogy

In this course eighty specimens representing the common rocks and minerals are studied. Emphasis is placed upon the occurrence of the common rock-forming minerals, and those which are of considerable economic value. Lectures upon crystallization and thorough quizzes are given. Text, Bennett. Time, thirty hours. In the Ph. C. Course sixty hours laboratory work, consisting mainly of blow-pipe analysis, are added to this course, making ninety hours in all.

Commercial Pharmacy I

The first half of the quarter is devoted to bookkeeping in which the student is taught to journalize business transactions, to post the same, how to close the ledger, and how to keep a cash book and a set of books especially recommended for a retail drug store. The forms and methods of commercial correspondence are also taught. During the last half of the course the fundamental principles of the law governing business transactions are studied, especial attention being given to the following subjects: sales of personal property, negotiable instruments, partnership, corporations, insurance and real property, banking and bankruptcy. Texts, Benton's Practical Bookkeeping, and Spencer's Commercial Law. Time, one hour per day for twelve weeks, or sixty hours.

Latin I

A thorough drill is given in the essentials of Latin grammar. Text, Collar and Daniell. Time, one hour per day for twelve weeks, or sixty hours.

Pharmaceutical Latin

A special drill in medical and pharmaceutical terms, prescription writing, etc. Text, Crothers and Bice. Time, one hour per day for twelve weeks, or sixty hours.

Theoretical Pharmacy I

This course is intended to introduce to the student the subject of Pharmacy. The United States Pharmacopoeia and the National Formula are thoroughly discussed with regard to history,

scope and purpose. The Dispensatories are also considered. Then are taken up in turn the subjects of metrology, specific gravity, heat and its applications to pharmacy including distillation, methods of comminution, solution, crystallization, percolation, maceration and filtration. A great variety of pharmaceutical apparatus is available for demonstration purposes. The course consists of lectures and recitations. Time, one hour per day for twelve weeks, or sixty hours. Text, Arny's Principles of Pharmacy, or Caspari's Treatise on Pharmacy.

Theoretical Pharmacy II

This course covers the subject of galencial pharmacy. Each of the classes of pharmaceutical preparations such as waters, solutions, infusions, decoctions, mucilages, mixtures, emulsions, syrups, wines, elixirs, spirits, tinctures, fluid extracts, extracts, oleo-resins, resins, collodions, oleates, liniments, ointments, plasters, suppositories, and others are taken up in turn. All of the Pharmacopoeial and many of the National Formulary preparations belonging to these classes are considered individually. Time, one hour per day for twelve weeks, or sixty hours. Text, Arny, or Caspari.

Theoretical Pharmacy III

This is essentially a review course. A systematic study is made of the Pharmacopoeia and the National Formulary. Coming, as it does, during the last term of the senior year, it serves the purpose of a very thorough review not only of pharmacy proper, but of materia medica and pharmaceutical chemistry. Time, one hour per day for twelve weeks, or sixty hours. Texts, United States Pharmacopoeia and National Formulary.

Arithmetical Pharmacy

This course is intended to provide a thorough training in the calculations which necessarily accompany many pharmaceutical operations. The student is thoroughly familiarized with all of the systems of weights and measures used in this country. The problems presented also cover the subjects of specific gravity determinations by all of the important methods, conversion of thermometer readings, percentage solutions, alligation, etc. Time, two hours per week for twelve weeks, or twenty-four hours. Text, Stevens' Arithmetic of Pharmacy.

Manufacturing Pharmacy I

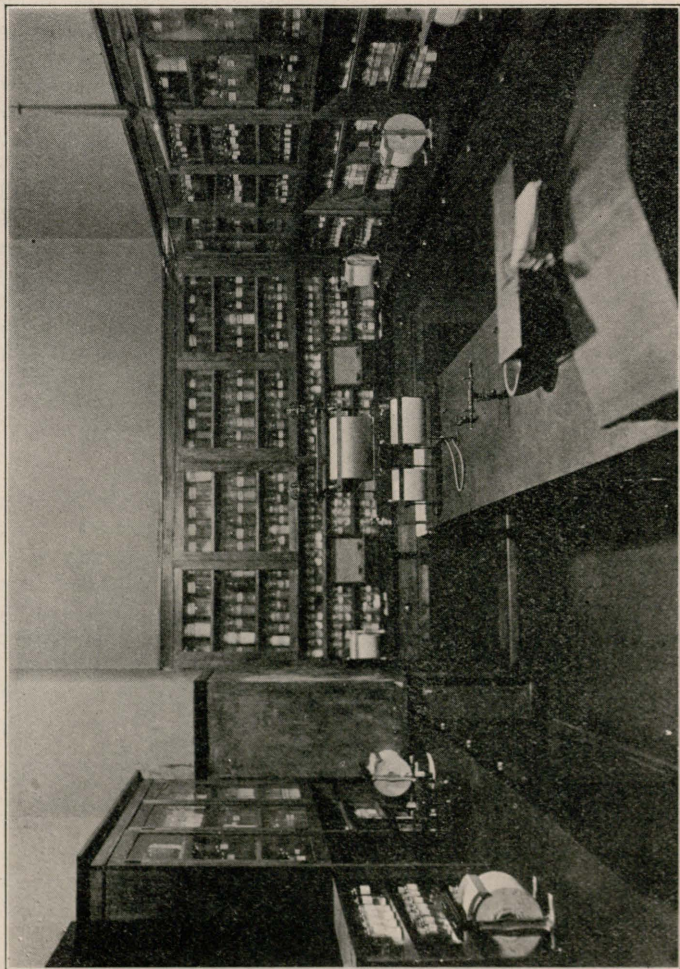
This is a laboratory course in manufacturing chemistry, (inorganic), accompanying Theoretical Pharmacy I and *Materia Medica* I. The student is required to manufacture two or three representative solutions or official compounds of: chlorine, sulphur, phosphates, sodium, potassium, ammonium, magnesium, calcium, zinc, aluminum, iron (including double and scale salts of the ferrous and ferric ions), lead, mercury and arsenic. This course affords abundant practice in arithmetical calculations as well as manipulation of the pharmaceutical processes,—solution, crystallization, distillation, sublimation, precipitation, filtration, clarification, etc. A sample of each of the sixty chemicals, manufactured in this course must be submitted to the instructor, who accepts it after the applicant passes a satisfactory quiz on the work involved in the manufacture. Time, ten hours per week for twelve weeks, or one hundred twenty hours. Text, *Arny's Principles of Pharmacy*, *U. S. Pharmacopoeia*, *National Formulary*, with *National Standard Dispensatory* as a reference.

Manufacturing Pharmacy II

This is a continuation of Course I and is a laboratory course accompanying Theoretical Pharmacy II. More advanced work is given in manufacturing chemistry. Many organic chemicals, including extraction and purification of alkaloids, manufacture of acetanilid, salicylic acid and spirits of nitrous ether, (which is also assayed by gasometric apparatus that can be made from material found in any drug store) are made. Galenicals are taken up in the following order: waters, spirits, solutions, mucilages, syrups, elixirs, glycerites, collodions, oleates, infusions, decoctions, tinctures, fluid extracts, mixtures, emulsions, liniments, extracts, resins, and powders. From one to eight representatives of each class, which involve the most difficulties in manufacture, are made. An individual quiz is given each student on each of the seventy preparations of this course as he submits them to the instructor for acceptance. Time, ten hours per week for twelve weeks, or one hundred twenty hours. Texts, as in the preceding course.

Dispensing

The first portion of this course is devoted to the manufacture of those classes of preparations generally made extemporaneously, such as ointments, cerates, emulsions, suppositories, troches,



A SECTION OF THE DISPENSING LABORATORY

compressed tablets, tablet triturates, pills, solution of magnesium citrate and siedlitz powders. Following this comes actual prescription work. The prescriptions compounded are carefully selected with a view to familiarize the student with all of the dispensing difficulties. The student is given a great deal of practice in dispensing remedies in form of powders, in capsulating both solids and liquids, and in dispensing cachets and wafers. The conditions under which the student works approximate closely those found in the prescription pharmacy. Every prescription dispensed must be labeled and wrapped as in actual practice. The laboratory work is accompanied by lectures and recitations in which dispensing problems are thoroughly discussed. The subject of incompatibilities receives careful attention. Time, two hours per day for twelve weeks, or one hundred twenty hours. Texts, as in preceding courses. Scoville's Art of Compounding, and Ruddiman's Incompatibilities recommended.

Materia Medica I

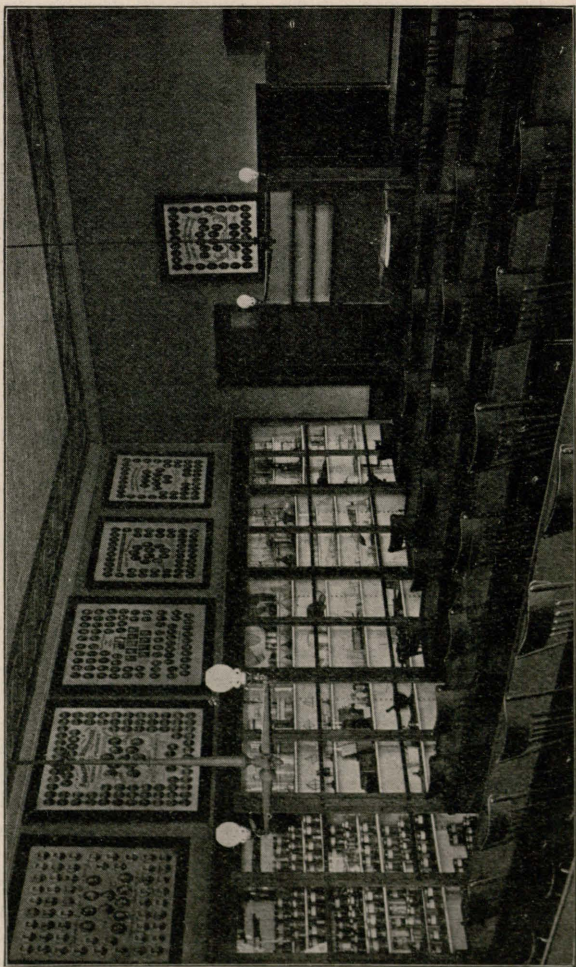
This course is devoted to inorganic materia medica, and is concerned principally with the inorganic chemicals of the pharmacopoeia. These are discussed from the standpoint of methods of manufacture, physical and chemical properties, methods of identification, and uses. The student is provided with samples of all of the more important salts, and expected to be able to identify these by means of their physical properties. Time, one hour per day for twelve weeks, or sixty hours. Text, Arny, or Culbreth.

Materia Medica II

The student now begins the study of organic drugs. The vegetable drugs are taken up in the order of their botanical classification, commencing with those derived from the lower forms of plant life. Careful attention is given to methods of collection and preparation for market, commercial varieties, means of detecting adulterants, active principles, properties and drugs. The Institution is equipped with a very complete collection of vegetable drugs, and the students are provided with samples for examination and study. Time, one hour per day for twelve weeks, or sixty hours. Text, Culbreth's Materia Medica and Pharmacology.

Materia Medica III

This course is a continuation of organic materia medica. The vegetable drugs are completed and the drugs from animal sources are studied. A considerable time is devoted to the study of oils,



A CORNER OF THE MATERIA MEDICA LECTURE ROOM

both fixed and volatile. Time, one hour per day for twelve weeks, or sixty hours. Texts as in Course II.

Alkaloidal Analysis

This is a laboratory course including both qualitative and quantitative work on the chemistry of the alkaloids. The student is taught to make tests for all of the more important alkaloids in galenical preparations, and in stomach contents. Practice is also given in the assay of alkaloidal drugs such as cinchona, nuxvomica and opium. Time, one hour per day for twelve weeks, or sixty hours. No text required; notes given by the instructor. References, Pictet and Biddle, Henry, Autenreith, and Allen, Vols. VI and VII.

Commercial Pharmacy II

This subject is presented by an instructor of wide commercial experience as well as of extensive technical training. It consists of lectures on the subjects of clerks, clerkship and relation to employer; establishing a business; buying, selling and advertising methods; collections; manufacturing; relation to laity and to the physician; business and professional ethics, etc. Time, twenty-five hours, extending throughout the senior year. No text required. Reference, O'Connor.

Therapeutics and Toxicology

These subjects given late in the course enable the instructor to apply to advantage the knowledge already gained of chemistry and materia medica. A systematic classification is made of drugs according to their therapeutic properties, and of poisons according to their action, and methods of antidoting. Outlines given by the instructor. Time, two hours per week for twelve weeks, or twenty-four hours.

Bandaging and First Aid

Realizing that the pharmacist is often expected in cases of accident to render intelligent aid, either in the absence of or as assistant to the physician, this course is offered. It consists in treatment of hemorrhages, collapse, the application of common forms of bandages, aseptic and antiseptic care of wounds, etc. Time, two hours per week for twelve weeks, or twenty-four hours. No text required.

Pharmaceutical Jurisprudence

An elementary and outline discussion of the main divisions of law, with practical application to the practice of pharmacy.



A PARTIAL VIEW OF THE MANUFACTURING LABORATORY

This course deals with the meaning and scope of jurisprudence; the general principals of the law of contract, tort, property, agency, partnership, commercial paper, and banking; liability of the pharmacist for his own acts in contract and in tort; liability for the acts of agents and servants; criminal liability; Federal and State regulation by statute of the business and practice of pharmacy. Time, one hour per week for twelve weeks, or twelve hours.

For the **Pharmaceutical Chemist Course**, in addition to the preceding, the following described courses are offered:

French

To the average student of French, the aim is intelligent understanding and translation into English of current French reading and literature. At the present time, however, great stress is placed upon a working vocabulary of words and expressions useful to the prospective soldier, and general information regarding French geography and French life. Texts: *The New Chardenal*, Cerf & Giese; *Simplest Spoken French*, Allen & Scheell; *French Life*, Bazin-Les Oberles, Maupassant; *Contes de Guerre*. Time, one hour per day for four terms, or two hundred forty hours.

A second year of four terms is made up of courses including composition, dictation, sight and free translation into English and French, studies of Balzac, Hugo, Sand, and the survey of French geographical and sociological conditions.

Course VII, 19th Century French Drama.

Course VIII, Moliere and his period.

Spanish

Special attention is given to pronunciation and the fundamental principles of the Grammar. Drills and translations, dictation, elementary syntax and orthography, memorizing of short poems and proverbs. The student is taught the customs and ways of conducting business among Spanish speaking people. Texts: Butler, *The Spanish Teacher*; Hill & Ford, *A Spanish Grammar*; Espinosa, *Elementary Spanish Reader*; Alarcon, *El Capitan Veneno*.

If a satisfactory reason is given, the student may elect Italian for his course in modern language instead of French or Spanish.

Bacteriology

General Bacteriology is first considered. A study of common pathogenic organisms follows. Some consideration is then given

to bacteria in the arts and industries; also a study of bacteria of water and milk and its products. In the laboratory sterilization, preparation of media and staining methods are given. Then is taken up a study of non-pathogenic organisms followed by study of the more common pathogenics. The latter part of the course is given to examination of water, milk, ice cream, etc., qualitatively and quantitatively. Water examination is made with special reference to sewage pollution. Text, Jordan. Time, one hour per day for twelve weeks, or sixty hours lecture and recitation, and sixty hours laboratory, or one hundred twenty hours in all.

Industrial Chemistry

Lectures on fuels, waters, fertilizers, explosives, lime and cements, glass, ceramics, destructive distillation processes and products, petroleum, soaps, carbohydrates, fermentation products, manufacture of heavy chemicals, etc. Text, Benson, with Throp, Sadtler, Rogers and Wagner as references. Time, three hours per week for twelve weeks, or thirty-six hours.

Water Analysis

This course is given concurrent with the course in Bacteriology, so that a complete sanitary as well as chemical examination of water may be made. It is essentially, mainly a laboratory course. Text, Leffman, or Mason. Time, one hour per day for twelve weeks, or sixty hours.

Advanced Analysis

There is presented here first, simple analysis of furnace gas, illuminating gas, and sanitary examination of air. Text, Franzen. Notes and directions by the instructor with reference to Sutton, Clowes and Coleman, Newth and others. Time, two hours per day for three weeks, or thirty hours. Second, a quantitative analysis of cements and common ores of iron, copper, zinc, lead, silver, etc. Application will be made of principles and technique acquired in gravimetric and volumetric analysis. No text required. Notes, directions and references given as in the preceding. Time, two hours a day for four weeks, or forty hours. Third, a short course in the ordinary technical examination of iron and steel, coke, limestone, and slag. No text required. Notes and directions as above, together with general references to analytic texts and special reference to Blair. Time, two hours per day for five weeks, or fifty hours. One hundred twenty hours in all given in this course.

Pharmaceutical Testing

Many important U. S. P. tests, both qualitative and quantitative, not presented elsewhere in the course, will be taken up here. Practical examination of various pharmaceuticals will be made to determine if they come within the "purity rubric" demand. Text, United States Pharmacopoeia, together with various references from library. Time, one hour per day for one term, or sixty hours.

Synthetic Chemistry

A laboratory course in which a selected list of substances is made illustrative of typical classes of compounds, and of type reactions. Both the aliphatic and the cyclic series are dealt with. Text, Cohen, with Gattermann, and Lassar-Cohn as references. Time, two hours per day for one term, or one hundred twenty hours.

Foods and Food Analysis

A laboratory course accompanied by lectures. The lectures embrace a consideration of the different classes of food principles, the amount of each necessary, and the purpose served by each. Different varieties of foods are considered in some detail, together with a discussion of their adulteration. The national and state food and drug laws are discussed.

The laboratory work includes examination of many classes of food materials, such as milk, spices, flavoring extracts, baking powders, edible fats and oils, sugar and saccharine products, and alcoholic beverages. The student is familiarized with a great variety of chemical apparatus and processes not met with in his ordinary pharmaceutical work. Time, four hours per day for twelve weeks, or two hundred forty hours. Text, An outline is used as a guide to the laboratory exercises and library reading. Principal reference books: Allen's Organic Analysis, Vol. VIII; Leach Winton, Leffman & Beam, Woodman, Holde, and many other special books.

Microscopy

A laboratory course devoted to the microscopical examination of powdered foods and drugs. Most of the crude organic drugs purchased by the pharmacists are in a comminuted condition, and in this state adulterants are difficult to detect by ordinary or microscopical examination. Hence, it becomes necessary that the

pharmacist who would be assured of the quality of the vegetable drugs used in the manufacture of his preparations, be prepared to use the microscope intelligently. The ninth revision of the Pharmacopoeia devotes considerable space to the description of the appearance of powdered drugs as viewed under the microscope. Time, one hour per day for twelve weeks, or sixty hours. Text, Greenish, with Winton as reference.

Debating and Parliamentary Law

A course of eighteen nights in debating, covering a period of two terms and twelve hours in Parliamentary Law given on Saturdays of one term is essential to graduation in any course.

Fees and Expenses

No matriculation fee is charged. The general tuition of \$20 per term not only admits the student to all courses offered in the School of Pharmacy but to those in other departments as well, excepting such as music, law, medicine or dentistry. The tuition, if paid in advance for the six terms necessary to complete the course for the degree of Graduate in Pharmacy, is fixed at \$110.00. This makes a reduction of one-half term's tuition, or \$10.00. If paid eight terms in advance, the tuition is \$145.00, making a saving of \$15.00 for those taking the course for the degree of Pharmaceutical Chemist. If paid for twelve terms in advance the tuition is \$210.00, thus making a saving of \$30.00 for those taking the course for the degree of Bachelor of Science in Pharmacy. There is also a further provision that in case of withdrawal, regular term rates are charged for the time in attendance, including that term in which the student leaves, and all money paid in excess of this charge is refunded. Thus no one is obliged to continue work in this University if dissatisfied.

The laboratory fees are as follows:

Experimental Chemical Laboratory fee, two terms, each.....	\$ 3.00
Analytical Chemical Laboratory fee, two terms, each.....	4.00
Physical Laboratory fee, one term.....	2.50
Pharmaceutical Laboratory fee, two terms, each.....	7.00
Dispensing Laboratory fee, one term.....	7.00
Physiological Laboratory fee, one term.....	1.00
Botanical Laboratory fee, two terms, each.....	1.50
Physiological Chemical Laboratory fee, one term.....	2.50
Volumetric Chemical Laboratory fee, one term.....	3.50

Mineralogy fee, one term.....	1.00
Alkaloidal Chemical Laboratory fee, one term.....	4.00
Histological Laboratory fee, one term.....	1.00

And in addition for the Pharmaceutical Chemist Course:

Bacteriological Laboratory fee, one term.....	3.50
Water Analysis fee, one term.....	2.50
Advanced Analysis (Gas, Ore and Iron) fee, one term.....	4.00
Synthetic Organics fee, one term.....	7.50
Food Analysis fee, one term.....	12.00
Pharmacopoeial Assaying fee, one term.....	3.50
Microscopy fee, one term.....	2.00
Blow-pipe Analysis fee, one term.....	2.00

These charges pay for all gas, water, chemicals, and use of apparatus. A charge is made for any breakage, and also for filters, towels, vials, etc., which become the property of the student, and a deposit of \$1.00 in Experimental Chemistry and \$2.00 in Analytical Chemistry is also made against breakage. This deposit is refunded less that part actually used by the student. There are no other special charges, such as examination fees and quiz class fees. The graduation fee is fixed uniformly at \$7.50 for each degree given.

A summary of expenses may be made as follows:

Tuition \$20.00 per quarter, or if paid in advance, \$110.00 for the six terms of the Graduate in Pharmacy Course; \$145.00 for the eight terms of the Pharmaceutical Chemist Course, and \$210.00 for the Bachelor of Science in Pharmacy Course. The laboratory fees are as low as the equipment and material furnished will permit them to be. There is no reduction for their payment in advance.

Board with the University may be had for \$40.00 per term of twelve weeks, payable by the term or quarter. Numerous other boarding places are available at reasonable rates.

Furnished rooms for rent are arranged in suites, each suite to be occupied by two students. The charges are from \$6.00 to \$18.00 per term, being at the rate of 50 cents to \$1.50 per week for each student. There is no additional expense except for heat and light. The cost of heat does not exceed \$5.00 per term of three months even in the most severe weather, while the cost of light depends entirely upon the individual student. Private families will dupli-

cate these rates, so that the student may exercise his pleasure in taking accommodation with the University or elsewhere.

For further information on any point not made clear in this announcement, address,

VALPARAISO UNIVERSITY
SCHOOL OF PHARMACY
Valparaiso, Indiana

SENIOR Ph. G., 1917-1918

Andreopoulos, Athan.....	Chicago, Illinois
Atanasoff, Geo.....	Bulgaria
Boyle, James J.....	New York, New York
Breese, Leona M.....	Hamilton, Ohio
Brown, Otis Elmo.....	Marvin, Missouri
Brubaker, Earl W.....	Ohio City, Ohio
Carney, Landon.....	Cocoanut Grove, Florida
Coulter, J. Knox.....	Collins, Mississippi
Davis, D. W.....	Valparaiso, Indiana
Echols, R. T.....	Texas
Edison, Austin G.....	Kankakee, Illinois
Elvig, Henry N.....	Brainerd, Minnesota
Escovar, J.....	Medellin, Columbia
Ferguson, Lola A.....	Kempton, Indiana
Garretson, H. S.....	Madiline, California
Goines, W. C.....	Colorado
Grassl, Otto.....	Menominee, Michigan
Gruner, Edwin C.....	Asheville, North Carolina
Horton, Bessie M.....	Wirt, Indiana
Jones, Dolan.....	Thomasville, North Carolina
Kee, C. B.....	Lafayette, Indiana
Kessler, Edward.....	Hecker, Illinois
Law, Maurice.....	Elba, Alabama
Lembke, C. Curtis.....	Algonac, Michigan
Lechliniski, Joseph.....	Parsons, Pennsylvania
Lovell, Gertrude.....	Fredericktown, Ohio
Ludgin, Max.....	Hartford, Connecticut
Mandelbaum, Robert.....	Detroit, Michigan
Mendralski, Walter J.....	Chicago, Illinois
Naar, Alex.....	Columbia, South America
Nelson, Ocus.....	Ripley, Tennessee
Nevins, Lucile S.....	Buffalo, New York
Press, Fritz.....	Winside, Nebraska
Robbins, Edward E.....	Warsaw, Indiana
Rueda, R.....	Columbia, South America
Schwartz, Herbert B.....	Royalton, Minnesota
Simsarian, Nishan H.....	Hoboken, New Jersey
Speishandler, Julius.....	New York, New York
Stacy, Winton.....	Princeton, Missouri
Stead, Ira.....	Exchange, Pennsylvania

Steinhardt, Benj.....	New York, New York
Stouffer, Helen.....	Leetonia, Ohio
Stuart, Frank D.....	Newark, Ohio
Willson, W. F.....	Franklin, Pennsylvania
Yanakiff, Jordan.....	Bulgaria

JUNIOR Ph. G., 1917-1918

Bennett, Spurgeon.....	Gilkey, North Carolina
Benson, Simon.....	Segmon, Sweden
Beasley, Arch.....	Walnut, Arkansas
Buresch, Edward W.....	Lakefield
Conaway, William.....	Titusville, Pennsylvania
Conover, Nina.....	Valparaiso, Indiana
Culbertson, Olin B.....	Swain, Arkansas
Czys, Felix.....	Dunkirk, New York
Durance, Genevieve.....	Charlevoix, Michigan
Eaton, Fannie.....	Troy, Pennsylvania
Dunay, Maurice.....	New York, New York
Finkelstein, Edward.....	Tarrytown, New York
Frost, Ercell.....	Fargo, North Dakota
Gapshis, Peter.....	Chicago, Illinois
Gilliam, J. Muritte.....	Scottville, Kentucky
Hahn, Y. D.	
Holland, Claude.....	Scottville, Kentucky
Howe, Roswell E.....	Roanoke, Virginia
Peterson, Arthur F.....	Brainerd, Minnesota
Ochotereno, Fausto.....	Puebla, Mexico
Keys, Edmund.....	Yorktown, Indiana
Kim, Arthur S.....	Manteca, California
Klut, Dole M.....	Maiden, North Carolina
Knutson, Dewey.....	Ely, Minnesota
Knudson, Uffe.....	DeSmit, South Dakota
Shoemaker, Harold A.....	New Ringold, Pennsylvania
Stith, Van. B.....	Rosedale, Indiana
Thrapp, May E.....	Avilla, Indiana
Thurman, W. H.....	Desloge, Minnesota
Villaroman, Hugo.....	Philippine, Islands
Webster, Chas. A.....	Olney, Illinois
Wood, Chester A.....	Peoria, Illinois

SENIOR Ph. C., 1917-1918

Andreopoulos, Athan.....	Chicago, Illinois
Crust, George.....	Brainerd, Minnesota

Echols, R. T.....	Texas
Elvig, Henry N.....	Brainerd, Minnesota
Escovar, J.....	Medillin, Columbia
Grassl, Otto.....	Menominee, Michigan
Gruner, Edwin C.....	Asheville, North Carolina
Lechlinski, Joseph.....	Parsons, Pennsylvania
Naar, Alex.....	Columbia, South America
Speishandler, Julius.....	New York, New York
Stead, Ira.....	Exchange, Pennsylvania
Steinhart, Benjamin.....	New York, New York
Stouffer, Helen.....	Leetonia, Ohio
Willson, W. F.....	Franklin, Pennsylvania
Yanakiff, Jordan.....	Bulgaria

JUNIOR Ph. C., 1917-1918

Benson, Simon.....	Segmon, Sweden
Conover, Nina.....	Valparaiso, Indiana
Cyzsz, Felix.....	Dunkirk, New York
Dunay, Maurice.....	New York, New York
Peterson, Arthur F.....	Brainerd, Minnesota
Ochotereno, Fausto.....	Puebla, Mexico
Stith, Van B.....	Rosedale, Indiana

*Hawaiian Butterfly
Pack Four Troubles.*

Valparaiso University publishes the following bulletins:

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- The School of Business
- The School of Music
- The School of Engineering
- The School of Agriculture
- The School of Pharmacy
- The Law School
- The School of Medicine
- The School of Dentistry
- The Alumni Quarterly
- The Summer School
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VALPARAISO UNIVERSITY

Valparaiso, Indiana