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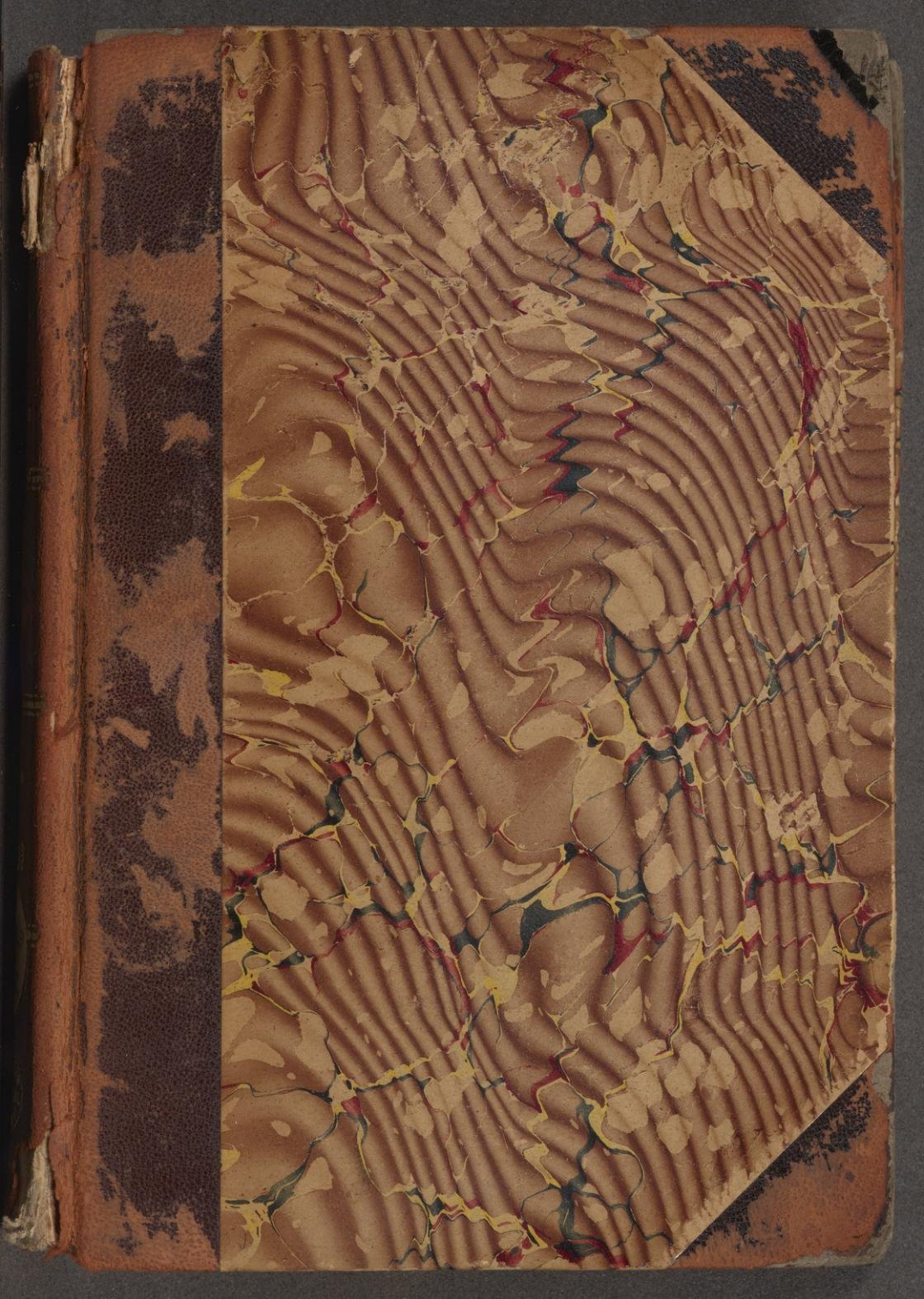
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Bulletin of the University of Wisconsin
No. 64

General Series. FEBRUARY, 1903. No. 17

CATALOGUE

OF THE

University of Wisconsin

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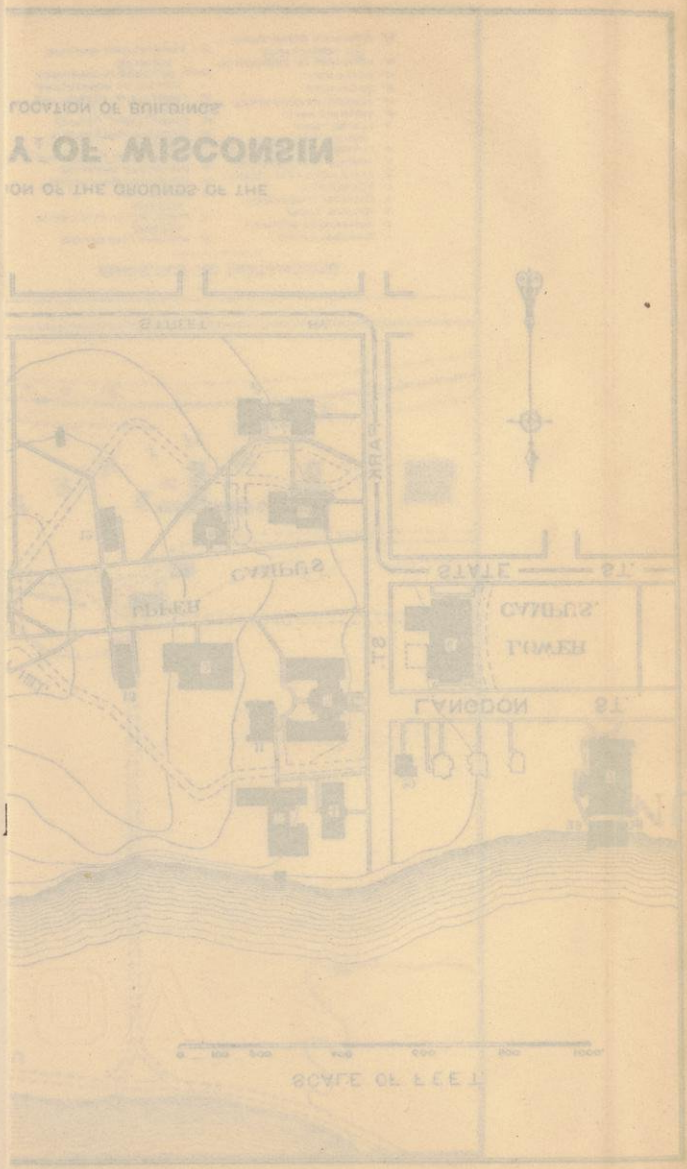
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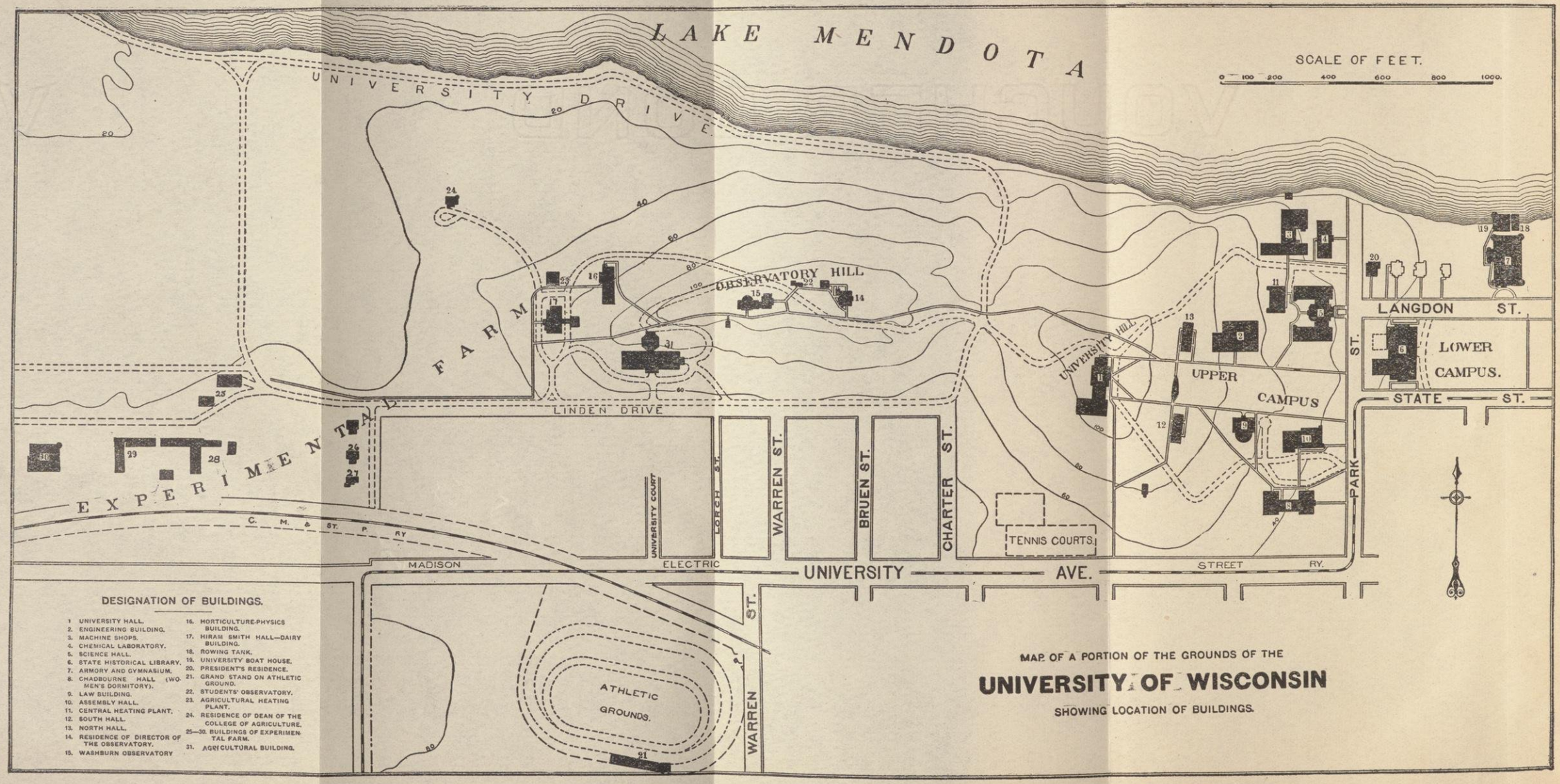
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1903.

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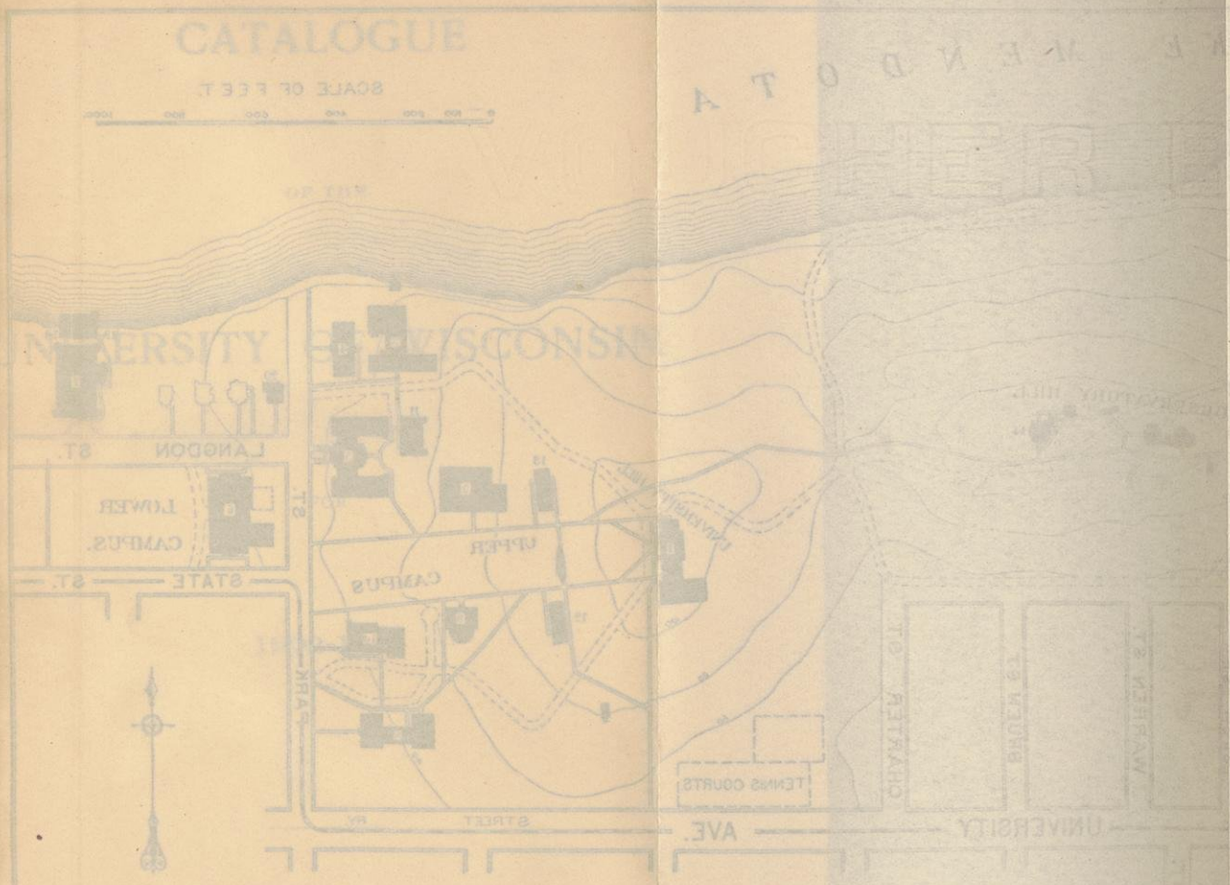
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5. SCIENCE HALL.
6. STATE HISTORICAL LIBRARY.
7. ARMORY AND GYMNASIUM.
8. CHADBOURNE HALL (WOMEN'S DORMITORY).
9. LAW BUILDING.
10. ASSEMBLY HALL.
11. CENTRAL HEATING PLANT.
12. SOUTH HALL.
13. NORTH HALL.
14. RESIDENCE OF DIRECTOR OF THE OBSERVATORY.
15. WASHBURN OBSERVATORY
16. HORTICULTURE-PHYSICS BUILDING.
17. HIRAM SMITH HALL—DAIRY BUILDING.
18. ROWING TANK.
19. UNIVERSITY BOAT HOUSE.
20. PRESIDENT'S RESIDENCE.
21. GRAND STAND ON ATHLETIC GROUND.
22. STUDENTS' OBSERVATORY.
23. AGRICULTURAL HEATING PLANT.
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31. AGRICULTURAL BUILDING.

MAP OF A PORTION OF THE GROUNDS OF THE

UNIVERSITY OF WISCONSIN

SHOWING LOCATION OF BUILDINGS.

CATALOGUE



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UNIVERSITY OF WISCONSIN

SHOWING LOCATION OF BUILDINGS

MADISON, WIS.
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1895.

CATALOGUE

OF THE

UNIVERSITY OF WISCONSIN

FOR

1902-1903

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1903.

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CALENDAR.

1903.

Jan. 6, Exercises resumed after Christmas recess.
Jan. 31-Feb. 6, Final examinations, first semester.
Feb. 9, Registration day, second semester.
Feb. 22, Washington's Birthday: legal holiday.
Apr. 9-13, inclusive, Easter recess.
May 30, Decoration Day: legal holiday.
June 6-12, inclusive, Final examinations, second semester.
June 11-12, inclusive, Entrance examinations to the University.
June 14, Baccalaureate Address.
June 15, Address before the graduating class of the College of Law.
June 16, Class Day exercises.
June 17, Alumni Day.
June 18, Commencement Day.
June 19, Summer vacation begins.
July 6, Opening day of the Summer Session.
Aug. 14, Last day of the Summer Session.

ACADEMIC YEAR 1903-1904.

Sept. 22, First day of examination for admission to advanced standing in the College of Law.
Sept. 29-30, Examinations for admission to the University.
Sept. 28-30, Registration days.
Oct. 1, University recitations begin.
Nov. 26, Thanksgiving Day: legal holiday.
Dec. 24, Christmas recess begins.

1904.

Jan. 5, First recitations after Christmas recess.
Jan. 30-Feb. 5, inclusive, Final examinations, first semester.
Feb. 8, Registration day, second semester.
Feb. 22, Washington's Birthday: legal holiday.
March 31-Apr. 4, inclusive, Easter recess.
May 30, Decoration Day: legal holiday.
June 11-17, inclusive, Final examinations, second semester.
June 16-17, inclusive, Entrance examinations.
June 19-23, Commencement week.

OFFICIAL BOARD OF VISITORS.

1902-1903.

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State at Large, Dr. F. A. W. Notz, Watertown.
State at Large, Mrs. Helen R. Olin, Madison.
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5th District, Julius Gugler, Milwaukee.
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9th District, C. G. Cannon, Appleton.
10th District, M. E. Dillon, Ashland.
11th District, Mrs. Elizabeth Taylor, Barron.

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THE PRESIDENT OF THE UNIVERSITY, *Ex-Officio.*

THE STATE SUPERINTENDENT OF PUBLIC INSTRUCTION, *Ex-Officio.*

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2nd District, BREESE J. STEVENS, Madison,	1905.
3rd District, DWIGHT T. PARKER, Fennimore,	1904.
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5th District, ARTHUR J. PULS, Milwaukee,	1905.
6th District, MAJOR C. MEAD, Plymouth,	1905.
7th District, EDWARD EVANS, La Crosse,	1905.
8th District, JAMES C. KERWIN, Neenah,	1904.
9th District, EDMUND A. EDMONDS, Oconto Falls,	1904.
10th District, GEORGE F. MERRILL, Ashland,	1906.
11th District, AUGUST J. MYRLAND, Grantsburg,	1906.

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BREESE J. STEVENS, *Vice President.*

THE STATE TREASURER, *Ex-Officio Treasurer.*

E. F. RILEY, *Secretary.*

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FISKE, GEORGE CONVERSE, Ph. D., Assistant Professor of Latin. *U. H.* 45. 609 Lake.

FLINT, ALBERT STOWELL, A. M., Assistant Astronomer. Washburn Observatory. 450 Charter.

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GAY, LUCY MARIE, B. L., Assistant Professor of French. *U. H.* 78. 216 N. Pinckney.

GILMORE, EUGENE ALLEN, A. B., LL. B., Assistant Professor of Law. *L. B.* 216 W. Gilman.

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INTRODUCTION.

HISTORY.

In 1838 an act was passed by the territorial legislature establishing the University of the Territory of Wisconsin, and appointing a Board of Visitors for its government. No action toward establishing the University was taken under this law except the selection of two townships of land appropriated by Congress. In 1848 the constitution of the state of Wisconsin made provision for the establishment of a State University.

In 1849 the Regents held their first meeting and began the work of organizing the University. The first building (now North Hall) was constructed in 1850. Four years from that time South Hall (Agricultural Hall) was completed, and in 1859 University Hall was added. This building has at various times been greatly modified; in 1895 it was provided with additional stairways and halls, and in 1898-99 a wing was added to the south, nearly doubling its size.

In 1866 the University was reorganized by act of the legislature, which also provided for uniting with the University the College of Agriculture, endowed with the proceeds of the Agricultural College grant given by the United States in 1862. In 1867 the first annual appropriation (about $7,000) was made by the State. Since that date the State has made repeated and large appropriations of money for the construction of buildings, for providing apparatus, and for meeting the ordinary expenses of the institution. The College of Law was established in 1868; the College of Engineering began its work in 1870; the School of Pharmacy in 1883, and the School of Economics, Political Science, and History in 1892. The last mentioned school was in 1900 divided into the School of Economics and Political Science, and the School of History. The Summer School was organized in 1887, the School of Music in 1895, the School of Education in 1897, the Summer Session of the University in 1899, and the School of Commerce in 1900.

THE SUPPORT OF THE UNIVERSITY.

The University is supported partly by the income of federal grants, partly by taxation of the people of the State, and partly by private gifts. For such support there have been five federal grants, namely: the Two-Township Grant of 1848; the Supplementary Two-Township Grant of 1854; the Morrill Grant of 1862 for the support of studies pertaining to agricultural and mechanic arts; the Hatch Grant of 1887 for the support of agricultural experiment stations, and the Supplementary Morrill Grant of 1890.

Besides numerous and large appropriations for buildings and other specific purposes the State of Wisconsin has made eight grants of a permanent nature, namely: the one-tenth mill tax of 1876, increased to one-eighth mill in 1883; the one-tenth mill tax of 1891; the appropriation for the support of the Observatory in 1887; the appropriation for the support of Farmers' Institutes in 1885, increased in 1887; the appropriation for the College of Engineering in 1889 of one per cent. of the railroad license tax; and the one-fifth mill grant of 1897. The legislature of 1899 consolidated the various mill taxes, specified above, and the grant of one per cent. of the railroad licenses, into a specific annual grant of $268,000, an amount equal to the annual revenue from these various grants. This sum was increased to $289,000 by the legislature of 1901.

Of the gifts that have come to the University, that of Dane County for the purchase of lands for the University farm, that of the late Governor C. C. Washburn for the founding of the Washburn Observatory, and that of the late Judge Mortimer M. Jackson for the establishment of the Mortimer M. Jackson Professorship of Law, have been the most considerable and important.

LOCATION.

The University of Wisconsin is picturesquely situated at Madison, the capital of the State of Wisconsin. The University grounds comprise 300 acres, and extend for more than a mile along the south shore of Lake Mendota, a sheet of water about four miles in width and six miles in length. In the eastern part of the grounds the land rises abruptly from the lake into two summits, of which the eastern and higher (University Hill) reaches a height of about one hundred feet above the lake. The larger number of the college buildings are placed on the summit and eastern slope of this hill. The western part of the grounds is lower and more nearly level, and is occupied by the Experimental Farm,

belonging to the College of Agriculture. East of the University hill is the lower campus, used for athletic sports and as the drill ground. At the session of 1893 the legislature provided for the purchase of Camp Randall for an athletic field. This is a tract of ground including 42 acres, and joining the University grounds to the southwest. In 1898 one hundred and sixty acres were purchased for a special experimental farm for the College of Agriculture.

The buildings of the University which are used for instructional purposes are fifteen in number. The oldest three—University Hall, North Hall, and Agricultural Hall ("South Hall")—stand on and near the eastern summit of University hill. Agricultural Hall is at present occupied by the offices, lecture rooms, and laboratories of the College of Agriculture; these will soon be removed to the new agricultural building now being constructed; North Hall is used by the departments of German and Hebrew, and the School of Pharmacy; while University Hall contains the lecture rooms for most of the remaining departments of language and literature, and the offices of the President of the University, the Registrar, and the Dean of the College of Letters and Science. These buildings were originally erected out of the money derived from sales of land granted by the national government. University Hall was greatly enlarged during 1898-99 by the addition of a large wing. Across the east front of the campus, at the foot of University hill, is a row of buildings, all of them erected at the expense of the State of Wisconsin. At the south is Chadbourne Hall, built in 1870, remodeled and enlarged in 1896, and used as a dormitory for young women. Next stands Assembly Hall, completed in 1879; the rear part, occupied by the University Library until the summer of 1900, has been remodeled for the use of the School of Music. Still further north is Science Hall, the largest and most costly of the University buildings, completed in 1887, containing the lecture rooms, laboratories, and museums of most of the scientific departments of the University. Next to Lake Mendota is the Chemical Laboratory, built in 1885; behind this is the Machine Shop, erected in the same year, and greatly enlarged in 1894. Near this building is the central heating plant, built in 1885 and enlarged in 1894. To the west of Science Hall, on the north side of the campus, is the home of the College of Mechanics and Engineering, erected in 1900. Opposite the Engineering Building on the south side of the campus, is the Law Building, which, in addition to the library, lecture rooms and offices of the College of Law, contains the offices of the Regents.

On the western summit of the University hill is the Washburn Observatory, erected in 1878 through the munificence of the late Gov. C. C. Washburn. Near it are the Students' Observatory and the residence of the Director. On the western slope of the hill is the building for the Dairy School, constructed in 1891, and near it are placed the buildings for the departments of horticulture and agricultural physics. A central heating plant for the College of Agriculture, and an extension of Hiram Smith Hall were completed in 1900-1901. The Horticulture-Physics Building, begun in 1893, was completed in 1896. The group of agricultural buildings at the west end of Observatory Hill is being enlarged by the addition of the new Central Agricultural College building, a description of which may be found in that part of this catalogue devoted to the College of Agriculture. For the construction of this building the legislature of 1901 appropriated $150,000. Further west lie the barns and buildings of the Experimental Farm and the residence for the Dean of the College of Agriculture. Between the lower campus and the lake stands the Armory and Gymnasium, authorized by the legislature of 1891, and still nearer the lake is the University Boat House. On the western part of the lower campus the new State Historical Library Building for the libraries of the State Historical Society and the University is located.

ORGANIZATION.

The University Embraces—

THE DEPARTMENT OF GRADUATE STUDY,
THE UNDERGRADUATE DEPARTMENTS.

Both Graduate and Undergraduate courses are included in all the colleges and schools of the University, of which there are:

1. The College of Letters and Science, including:
   The School of Economics and Political Science.
   The School of History.
   The School of Commerce.
   The School of Education.
   The School of Pharmacy.
   The School of Music.
   The Washburn Observatory.
2. The College of Mechanics and Engineering.
3. The College of Law.
4. The College of Agriculture.

The College of Letters and Science embraces—

1. The Ancient Classical Course.
2. The Modern Classical Course.
3. The General Science Course.
4. The English Course.
5. The Civic Historical Course.
6. The Commercial Course.
7. The Special Course antecedent to Medicine.
8. The Philosophical Course for Normal School Graduates.

The College of Mechanics and Engineering embraces—

1. The Course in General Engineering.
2. The Pre-engineering Collegiate Course.
3. The Course in Civil Engineering, including Railway, Bridge, Structural, Municipal and Highway Engineering.

4. The Course in Sanitary Engineering.
5. The Course in Mechanical Engineering.
6. The Course in Electrical Engineering.
7. The Course in Applied Electro-Chemistry.
8. The Pre-Mining Engineering Course.
9. The Pre-Metallurgical Engineering Course.

The College of Agriculture embraces—

1. The Experiment Station.
2. The Graduate Courses.
3. The Long Agricultural Course.
4. The Short Agricultural Course.
5. The Dairy Course.
6. The Farmers' Institutes.

The College of Law embraces—

1. A Three Years' Course.

The School of Economics and Political Science and the School of History embrace—

1. The Graduate Courses.
2. The Civic Historical Course.

The School of Education embraces—

1. The Graduate Courses.
2. The Course for Normal Graduates.
3. Special Undergraduate Courses in Philosophy and Pedagogy.
4. The Department of University Extension.
5. The Summer School.

The School of Pharmacy embraces—

1. The Graduate Courses.
2. The Pharmacy Course.
3. The Four Years' Pharmacy Course.

The School of Music embraces—

1. The Graduate Courses.
2. The Collegiate Course.
3. The Academic Course.

GENERAL INFORMATION.

THE UNIVERSITY AND THE STATE.

The University of Wisconsin is a part of the free school system of the State. It was established by the constitution when the State was organized in 1848. The organic law establishing the University declares that its object shall be: "to provide the means of acquiring a thorough knowledge of the various branches of learning connected with scientific, industrial, and professional pursuits." In the educational policy of the State, the University sustains the same relation to the high schools that the high schools sustain to the primary and grammar schools. As those who have successfully completed the grammar grades may freely avail themselves of the advantages of the high schools, so those who have completed with credit the required amount of high school work may advance to the opportunities offered by the University. It is not expected that every pupil who completes the grammar grades will advance to the high school, and it is not practicable for every one who completes the high school to go forward to the University. Still, the school system of the State has been so arranged as to make the passage from one grade to another as easy and natural as possible, in order to afford every encouragement to the most complete and thorough education attainable. The State through the University undertakes to furnish thorough instruction in the various branches requisite for a liberal education, as well as in the technical branches of engineering, law, agriculture, pharmacy, pedagogy, and music.

It is the general policy of the institution to foster the higher educational interests of the State, broadly and generously interpreted. It is its aim to make ample provision for the demands of advanced scholarship in as many lines as its means will permit. By prescribing a large portion of the studies of the regular courses in the earlier years, and by leaving a large number in the later portion to the selection of the student, it endeavors to

give a wise measure of direction and at the same time leave sufficient room for choice to encourage individual adaptation and special development.

The University avoids all that is sectarian or partisan; but it endeavors to extend its sympathy and influence to whatever contributes to good citizenship and high character.

GOVERNMENT.

The government of the institution rests upon the inherent obligations of students to the University and to the State. The University is maintained at the public expense for the public good. Those who participate in its benefits are expected, as a matter of honor, not only to fulfill the obligations of loyal members of the institution, of the community, and of the commonwealth, but actively to aid in promoting intellectual and moral interests. Every student owes to the public a full equivalent for its expenditure in his behalf, in the form of superior usefulness to it, both while in the institution and afterwards. Students therefore cannot claim any exemption from the duties of good citizens and loyal members of the community and of the University; on the contrary, they are under peculiar obligations loyally to fulfill every duty. As members of the institution, they are held responsible for regular attendance and the proper performance of their duties. The interests of faithful students and the well-being of the University demand that those who do not conform to these manifest obligations should withdraw from the institution or be excluded. As members of the community, students are amenable to the law; and, if guilty of its infraction, are liable to a termination of their relations with the University. The University recognizes its civic relations, and rests its administration upon civic obligations.

CLASS OFFICERS.

All students are under the supervision of class officers. Each division of the classes is under such an officer, who directs the work of the students, assigns to each his studies, and reports his progress at the end of each semester to parent or guardian. The class officers receive all reports from instructors, both those on work completed at the end of the semester, and special reports of deficiency or failure on the part of individuals.

CONVOCATIONS.

A weekly assembly, or convocation, of the students is held on Friday at noon, members of the freshmen and sophomore classes being required to attend, though members of the other classes are invited to attend. At this meeting the President, a member of the Faculty, or some person from abroad, addresses the students. The address usually concerns some matter of University or student interest, literary subjects, or questions of contemporary history and politics. Music is made a prominent feature. At convocation the students are enabled to meet as a body, and to become acquainted with members of the Faculty other than those from whom they receive instruction, and also to listen to persons of note from other institutions or professions.

PHYSICAL TRAINING.

Military drill and gymnastic exercises are required of the young men of the freshmen and sophomore classes, and of special students during the first two years of attendance. Gymnastic exercise is also required of the young women, for whom a thoroughly equipped gymnasium has been provided. The situation of the University on the shores of the beautiful Lake Mendota offers fine opportunities for boating and aquatic sports. The University Boat House Association has erected a boat house for the use of the University crews and the University public.

An athletic field of about ten acres has been enclosed in Camp Randall. This field has been graded, under-drained, provided with two tracks, one-third and one-fourth mile; and a grand stand has been built which accommodates 1,500 spectators.

THE COLLEGE YEAR.

The college year is divided into two semesters. The first semester opens on the last Wednesday in September. Registration and examinations for admission will be held on the preceding Tuesday, and on the opening day of the semester. The second semester will ordinarily begin on the second Monday in February. The studies of the University have been so arranged that students can begin their course with the second semester; but persons desiring to enter the University at this time should come to Madison during the week preceding the opening of the second semester, as the recitations will begin on Tuesday morning, and all arrangements for

rooms, board, books, etc., as well as registration at the University must be made before that time. Commencement occurs on the Thursday preceding the last Wednesday in June.

There are two recesses or vacations during the college year, one at Christmas and one at Easter. The Christmas recess begins at the end of the second day before Christmas, and closes at the beginning of the second day after New Year's Day, when this falls on Sunday, Monday or Tuesday. When New Year's Day comes later in the week than Tuesday, the recess closes at the beginning of the following Tuesday. No regular class examinations occur at Christmas, and no new classes begin immediately after the Christmas recess, so that students cannot enter the University at this time. Those who cannot enter at the opening of the year must wait for the beginning of the second semester, in February. There is no vacation between the first and second semesters.

The Easter recess begins Thursday morning before Easter Sunday, and closes on the morning of the following Tuesday.

LIBRARIES.

The libraries at Madison, all of which are at the service of members of the University, are five in number, viz., the Library of the University of Wisconsin, the Library of the State Historical Society of Wisconsin, the Library of the Wisconsin Academy of Sciences, Arts, and Letters, the State Law Library, and the Madison Free Public Library. These libraries duplicate books only to supply exceptional demands, and have an effective strength approximately equal to the total number of volumes possessed by them. The total number of bound volumes in all the libraries is about 257,000, and the number of pamphlets exceeds 135,000.

The first three libraries above named are all housed in the new library building of the State Historical Society on the lower campus of the University. This building, erected by the State of Wisconsin at a cost of $600,000, was occupied in the fall of 1900, and affords exceptional facilities in the way of convenient and commodious quarters to University students. In the planning of the building, the special needs of the University were equally consulted.

In the south half of the first floor are located three department libraries of the Historical Society, viz., documents, newspaper files, and maps and manuscripts. In the north end of this floor

is a series of six fine seminary rooms, allotted to American history, European history, economics, political science, and mathematics. The greater part of the second or main floor is occupied by the general reading room and the periodical room, which are used in common by the two libraries. In these two reading rooms 275 readers may find ample accommodation at one time. In open cases in the reading room are shelved several thousand reference and "reserved" books. To these, as well as to the large collection of general and engineering periodicals in the adjoining periodical room, all readers have direct access. The main portion of both libraries is stored in the stack wing adjoining the delivery room on the west. Officers of the University have direct access to the shelves in all parts of the library, and students engaged in advanced work, upon recommendation of their instructors, are allowed access to those parts of the collection dealing with their special subjects.

The administrative rooms of the Historical Society and of the University library are situated at the south and north ends of the second floor respectively. The north end of the third floor is occupied by six seminary rooms, for the departments of German, Latin, Greek, French, English, and philosophy and education. In these rooms, as in those on the first floor, University seminaries are conducted, advanced students have the privilege of working, and on the shelves therein are placed special collections of books dealing with the respective subjects. The south end of the third floor contains a small lecture hall, a room set apart for the Wisconsin Academy of Sciences, Arts, and Letters, and two small administrative rooms. The museum and gallery of the Historical Society occupy the fourth floor. At no university in the country is to be found a more convenient or better appointed library building. For consultation the library is open fourteen hours daily, during the academic year, except on Sundays and legal holidays. At the opening of the college year introductory lectures on the use of the library are given to new students by the University librarian.

The Library of the University of Wisconsin, including its branches, contains about 78,000 volumes and 25,000 unbound pamphlets. The catalogue is the usual dictionary card catalogue of authors, subjects, and titles in one alphabetical arrangement. Subject to certain restrictions, books may be drawn by all members of the University. Students are required to make a guarantee deposit of $2.00 with the Secretary of the Regents preliminary to borrowing books

from the library. This amount is refunded on presenting to the Secretary the library deposit card properly endorsed by the Librarian.

In general, the library aims to be uniformly developed in all fields, but appropriations and gifts in recent years have rendered it specially strong in the lines of European history, economics, political science, and in Germanic and classical philology. Through the kindness of Professor E. T. Owen, the library contains on deposit the Owen library of works on French language and literature, numbering 900 volumes. In 1899, liberal German-American citizens of Milwaukee contributed the sum of $3,150 for the purchase of a Germanic philology seminary library. This fund has been expended to supplement and develop the German department of the library, thus furnishing unexcelled facilities for the study of the German language and literature. The additions to the library from this source number two thousand volumes. During the academic year 1900-1901, the library received two notable gifts, one of $2,000 from three Milwaukee citizens for the purchase of books for the School of Commerce, and the other of $2,645, contributed by friends of the University in New York City, Milwaukee, and elsewhere, to the School of Economics and Political Science for the development of the library in those fields. These gifts have greatly increased the library facilities of the two schools mentioned. In December, 1901, the late President Charles Kendall Adams presented to the University his fine private library of 2,000 volumes, especially rich in material on European history. A gift of $500 from Mr. Frederick Vogel of Milwaukee, in 1902, has been expended for a collection of 600 volumes in the field of political science and modern French legislative history.

The College of Law has a special library of 4,500 volumes; and the Washburn Observatory is provided with the Woodman Astronomical Library, now containing 2,500 books and 2,500 pamphlets. The agricultural library of about 5,000 volumes is located on the third floor of Agricultural Hall. The pharmacy library in North Hall is specially strong in sets of pharmaceutical journals, most of which are placed on deposit by Professor Edward Kremers for the use of the University. In the reading room of the Engineering Building are kept the current files of about 125 of the most important engineering and technical periodicals, together with a collection of engineering reference books.

The Library of the State Historical Society contains over 118,000 volumes and 110,000 pamphlets. It is exceptionally rich in manu-

script and other material for the study of the history of the Mississippi valley. The collections of the late Dr. Lyman C. Draper are included in the library. The Society's files of newspapers, periodicals, and the publications of historical societies are among the most complete in the United States. There is an unusually complete collection of published colonial records and United States government documents, and the material for the study of American state and local history, western travel, the revolution, slavery, and the civil war, is abundant. In English history the library possesses the Calendars of State Papers, the Rolls Series, the publications of the Camden Society, the Records Commission, and the Historical Manuscripts Commission, the journals and debates of Parliament, and several important collections for the study of local history. The Tank collection (Dutch) offers special resources for the study of the Netherlands.

The Library of the Wisconsin Academy of Sciences, Arts, and Letters is a valuable collection of reports and transactions of learned societies, comprising about 5,000 volumes. It is placed in the new library building, and constitutes a useful supplement to the other libraries in this special field.

Members of the University also have free access to the State Law Library in the Capitol, which numbers about 37,500 volumes. By special arrangement students are allowed to draw books from the Madison Free Public Library, located in the City Hall. This is a well-selected collection of over 19,000 volumes. The excellence and extent of these libraries is such as to make Madison among the first, and in some departments the first, of library centers west of the Alleghanies.

LABORATORIES.

CHEMICAL LABORATORIES.—The Chemical Laboratories, six in number, are in a building devoted exclusively to Chemistry. Four of these are general laboratories, viz.:

First, the Qualitative Laboratory, with accommodations for ninety-six students; *second*, the Organic Laboratory, accommodating thirty-two students; *third*, the Quantitative Laboratory, accommodating forty-eight students; and, *fourth*, the Laboratory of Physical Chemistry, accommodating twenty-five students.

These laboratories are large, well-lighted, conveniently arranged, and well supplied with the necessary apparatus and equipments.

PHYSICAL LABORATORIES.—The instruction in the department of physics is designed to meet the needs of all classes of students, from those just entering, with no knowledge of the subject, to those who have been well trained, and who are prepared to continue in the more advanced courses or to take up a line of original investigation.

The physical laboratories are located on the first floor and in the basement of Science Hall, and are commodious and well lighted. Besides the lecture room and the large apparatus room, the first floor contains the general physical laboratory, which is new and complete in its appointments in every respect. The lecture room has a seating capacity for 150 students, and is provided with all the appliances to facilitate a complete course of experimental lectures. In the basement are three large general laboratories for undergraduate work, all of which are liberally supplied with piers to insure perfect stability of the instruments used. There are also in the basement a well-equipped photometric room and a number of laboratories devoted to special investigation. Besides current supplied from the numerous dynamos in the University shops, the various rooms of the physical laboratory are connected with the electric light and power circuits of the city.

The physical apparatus includes, in addition to the equipment for demonstration purposes, an excellent collection of instruments adapted to measurement and investigation. The laboratory offers special facilities for carrying out graduate study and research.

MINERALOGICAL LABORATORY.—The laboratory of mineralogy is located on the second floor of Science Hall, where desks and chemical reagents for courses in blow-pipe analysis and determinative mineralogy are provided for a class of forty students; there is also a goniometer room which can be darkened for the study of crystals. In the mineralogical lecture room are the necessary models of crystals in glass and wood, and working collections of crystals and minerals.

PETROGRAPHICAL LABORATORY.—This laboratory is supplied with polarizing microscopes, other necessary apparatus, and a very complete set of rocks and of rock and mineral sections, for courses in optical mineralogy and petrology. The general and special collections mentioned under the caption of Museums are available for all advanced students of petrology.

GEOLOGICAL SEMINARY.—This room is fitted out as a department library with a full equipment of reference books, maps, charts,

etc. The lecture room for geology is provided with a set of Zittel's *Palaeontologische Wandtafeln;* a large relief map of the United States by E. E. Howell; sets of Shaler's models and photographs and Davis' models showing the development of topographic features; numerous geological maps; projecting lanterns; a large collection of lantern slides, and other apparatus.

Biological Laboratories.—The elementary laboratory for the departments of botany and zoology is arranged to accommodate seventy-two students, and is provided with compound microscopes, dissecting microscopes, and other apparatus necessary to an elementary course in botany and zoology. The departments have about ninety compound microscopes, chiefly by Leitz and by Bausch & Lomb, fitted for elementary and advanced work.

Botany.—The laboratories for advanced work in botany are fitted up with the apparatus and reagents necessary to advanced courses in vegetable histology, physiology and cytology. A special laboratory is provided for work in general physiology, and is equipped with apparatus for advanced and research work on irritability, protoplasmic motions, reproduction, etc. All necessary reagents, ovens, paraffin baths, and microtomes are provided for histological and cytological work. A considerable amount of apparatus for work on the special physiology of the flowering plants is also provided.

Zoology.—For advanced work in zoology there are two laboratories, one being devoted to histology, and the other to vertebrate anatomy and embryology. The histological laboratory is provided with a full equipment of reagents, microtomes of various patterns, and microscopes. The anatomical laboratory is furnished with a collection of vertebrate skeletons and of wax models illustrating the development of some of the more important vertebrates and invertebrates. For illustrating the lectures in botany and in zoology, there are Auzoux models, both of plants and animals, an electric projecting lantern and microscope, over 600 lantern slides, a large number of wall charts, microscope slides, etc.

Bacteriology.—The bacteriological laboratories are located in Agricultural Hall. The general laboratory occupies a part of the second floor; it accommodates twenty students, giving ample facilities for independent work. The laboratory is supplied with compound microscopes of late pattern, comprising the best American and German makes. The laboratory is well equipped with the usual supply of sterilizers and incubators, kept at different constant temperatures,

as well as numerous pieces of apparatus of home manufacture intended for investigational and instructional purposes. A large and constantly increasing supply of pure cultures of bacteria is kept on hand. Facilities are also offered for advanced and graduate students. The research laboratory of the Experiment Station is well equipped for original investigation, while the green houses of the College of Agriculture, and the University Creamery, afford opportunities for the prosecution of work on plant diseases and dairy products respectively. Nearly all of the general bacteriological journals are kept on file in the department library for ready reference. A collection of several hundred lantern slides for lecture illustration is also in use.

THE PSYCHOLOGICAL LABORATORY.—This laboratory is designed to illustrate by practical experiments and demonstrations the courses in psychology; to give an opportunity to students of experimental psychology to study the methods, equipments, and results of this science, and to provide for original research in many directions.

Original research has been carried on for several years and the more important results have been published in the *American Journal of Psychology*, the *Psychological Review*, and elsewhere.

In addition to four series of studies from the laboratory already published, the work done in the laboratory has been the basis of several articles that have appeared or are about to appear in various periodicals, as well as of theses submitted for degrees.

The engineering, assaying, pharmacy and agricultural laboratories are described under their respective departments.

UNIVERSITY MUSEUMS.

OFFICERS.

E. A. BIRGE, Ph. D., Acting President of the University.

ROBERT A. HARPER, Ph. D., Professor of Botany, Curator for Botany.

WILLIAM S. MARSHALL, Ph. D., Assistant Professor of Zoology, Curator for Zoology.

WILLIAM S. MILLER, M. D., Assistant Professor of Vertebrate Anatomy, Curator for Vertebrate Anatomy.

WILLIAM H. HOBBS, Ph D., Professor of Mineralogy and Petrology, Curator for Mineralogy and Petrology.

J. MORGAN CLEMENTS, Ph. D., Assistant Professor of Geology, Curator for Geology and Paleontology.

ROLLIN H. DENNISTON, B. S., Curator for Pharmaceutical Collections.

The University museums comprise the Geological and Mineralogical Museum, the Biological Museum, and the Herbarium, which occupy respectively the second and third floors of the south wing of Science Hall. The collections in the College of Mechanics and Engineering and the College of Agriculture are described on later pages.

THE GEOLOGICAL AND MINERALOGICAL MUSEUM has been built up for the most part with special reference to instructional work. It contains material for the thorough illustration of various lines of mineralogy and geology.

The museum includes a large number of relief models to illustrate topographical and geological features, casts of gigantic fossil forms, and systematic collections of minerals, crystals, rocks, fossils, ores, etc. In the mineral collection is included the Henry collection, rich in minerals, from southern Wisconsin, and in the paleontological collection is the Powers collection of Wisconsin Silurian fossils. The collection of the Wisconsin Academy of Sciences, Arts, and Letters, in which are included the type fossils described in the volumes of the First Geological Survey of Wisconsin, is deposited in the museum. The rock collection includes Sturtz's collection of typical European rocks, the Rohn collection of typical rocks from the Lake Superior region, and a number of other special sets.

A number of additional collections are at present stored in the lecture rooms, laboratories, and offices, and are accessible to students interested. These include a collection of over 30,000 specimens, with about 15,000 thin sections, belonging to the Lake Superior Division of the United States Geological Survey, one of the largest of its kind in the world; a large collection of New England rocks belonging to the same survey; the collections of the Wisconsin Geological Survey; and the Hobbs collection, mainly of European rocks, supplied with over 1,000 thin sections. Of technical interest are the special collections of metallurgical, pharmaceutical, and engineering specimens, and the collection of Wisconsin building stones and clays made by the Wisconsin Geological Survey.

THE ZOOLOGICAL AND BOTANICAL MUSEUM occupies the entire third story of the south wing of Science Hall, directly above the geological museum. Among the specimens at present placed in the cases may be named a good collection of vertebrate skeletons; a large number of Blaschka glass models of invertebrates; an alcoholic collection of

invertebrates from the Naples Zoological Station; representative collections of echinoderms, corals, and mollusks. The botanical cases contain a collection of Auzoux models of flowers and a collection of specimens of wood. The Owen collection of Lepidoptera, comprising five thousand species, and over twenty thousand specimens, is deposited in Science Hall.

THE HERBARIUM of the University (Room 41, Science Hall) includes the Lapham collection, chiefly of flowering plants, purchased by the State from the estate of I. A. Lapham, of Milwaukee. This collection, which contained about 8,000 species, has been mounted and arranged and is now accessible for study. The Wisconsin plants have been separated from the rest, and it is the intention to make them the nucleus of a complete representation of the Wisconsin flora. Large additions have been made to this herbarium by Professors L. S. Cheney and H. L. Russell. Mr. Lapham's collections also included a considerable number of algæ, lichens and mosses. The collection of mosses has been very greatly extended by gifts, purchases, exchanges, and collections acquired, so that it now includes almost all of the species known to North America, besides a large number of those from other countries. Many valuable types and sets of exsiccati are included.

When the museums are not open to the public, access may be gained by visitors at all reasonable hours by calling upon the janitor of the building.

THE PHARMACEUTICAL COLLECTIONS.

ECONOMIC COLLECTION.—This collection includes an herbarium of medicinal plants of about 4,000 sheets, and many articles derived from plants, used for food, clothing, etc.; implements used in collecting or manufacturing plant products, and photographs illustrating plants of economic value. At present the economic collection is housed on the fourth floor of North Hall, in part with the drug collection, and in part in the herbarium room.

THE DRUG COLLECTION.—At present this collection contains about 4,500 sample specimens of drugs for purely illustrative purposes. Each year large additions come to it as contributions from various sources. Among the larger contributors are Schimmel & Co., of Leipzig, Germany, Lehn & Fink, Parke, Davis & Co., and Gilpin, Langdon & Co. This collection is housed in a special room on the fourth floor of North Hall.

THE PHARMACOGNOSTICAL COLLECTION which is kept in North Hall is well supplied with drugs of Asiatic origin. Notable among them are a collection of fifty Ceylon drugs and medicines and a collection of more than one hundred Malay medicines. Worthy of mention are also a collection of 122 handsome specimens of essential oils and allied synthetic products, liberally donated by Messrs. Schimmel & Co., of Leipzig, Germany; a collection of choice drugs from Messrs. Lehn & Fink, a materia medica cabinet from Parke, Davis & Co., a collection of official drugs from Schieffelin & Co., another from Gilpin, Langdon & Co., etc.

The inventory of this collection comprises almost four thousand numbers.

THE WASHBURN OBSERVATORY.

The Washburn Observatory is excellently equipped for astronomical work. Its principal instruments are: An equatorially-mounted telescope of 15½ inches aperture, constructed by Alvan Clark & Sons; a meridian circle, by A. Repsold & Sons, of Hamburg, with the accessories of such instruments.

A full account of the Washburn Observatory will be found on a later page, under the College of Letters and Science.

PUBLICATIONS OF THE UNIVERSITY.

The University issues five series of publications, known as the *Bulletin of the University of Wisconsin*, under the direction of a Committe of Publication, consisting of the President of the University and the following editors:

WILLIAM H. HOBBS, Ph. D. (Chairman), *Editor of the Science Series.*

CHARLES FORSTER SMITH, Ph. D., *Editor of the Philology and Literature Series.*

RICHARD T. ELY, Ph. D., *Editor of the Economics and Political Science Series.*

FREDERICK J. TURNER, Ph. D., *Editor of the History Series.*

FREDERICK E. TURNEAURE, C. E., *Editor of the Engineering Series.*

The series of the *Bulletin* described as the Economics, Political Science and History series, terminated with the second volume, and has been replaced by the Economics and Political Science series and the History series.

For a list of bulletins already published, see Appendix at the end of this catalogue.

The Washburn Observatory issues the *Publications of the Washburn Observatory,* edited by Professor George C. Comstock.

From the College of Agriculture are issued the *Bulletins of the Experiment Station,* the *Annual Reports,* and the *Bulletin of the Farmers' Institutes.*

Besides the official publications of the University the following publications are edited at the University:

Bulletins of the Wisconsin Geological and Natural History Survey, edited by Professor E. A. Birge, Director.

Transactions of the Wisconsin Academy of Sciences, Arts and Letters, edited by Professor E. B. Skinner, Acting Secretary.

The Pharmaceutical Review, edited by Professor Edward Kremers.

The Municipality, edited by Dr. Samuel E. Sparling.

STUDENT AND ALUMNI PUBLICATIONS.

The publications conducted by the students include the *Daily Cardinal;* a bi-weekly illustrated humorous publication, the *Sphinx;* and an annual, the *Badger,* issued by the Junior Class. The students of the College of Engineering issue a quarterly publication, the *Wisconsin Engineer.* A monthly journal, the *Alumni Magazine,* is issued by the Alumni.

LITERARY AND SCIENTIFIC SOCIETIES.

The literary or debating societies of the University have played so important a part that they may almost be said to constitute a department by themselves. The Athenæan and the Hesperian societies are practically coeval with the University. Philomathia was organized in 1886, and Olympia was established last year. These societies are sustained with great enthusiasm, and are an important means of intellectual training. Athena, Hesperia and Philomathia form what is known as the Joint Debate League, which arranges annually a public debate between two of these three societies. This joint debate has been a feature of the University for more than thirty-five years, and has steadily increased in interest.

The four societies above named, called the "Hill" societies, together with the two debating societies in the College of Law, the Forum and Columbian, form the intercollegiate debating league. When an intercollegiate debate has been arranged, a representative is chosen from each society; these six representatives appear in what is called a preliminary debate; and the best three, as determined by the

markings of three or five judges, constitute the team in the pending debate.

The young women maintain two literary societies, Castalia, established near the beginning of the University, and Pythia, formed this year.

Besides these societies in the College of Letters and Science, similar organizations are maintained in other colleges of the University. The Forum and Columbian of the College of Law devote themselves especially to debate, while the Luther S. Dixon, Andrew A. Bruce, and John Marshall law clubs afford valuable practice in the trial of cases; the Short Course Literary Society and the Dairy Course Literary Society in the College of Agriculture offer opportunities for the discussion of questions of special interest to this department; tne University of Wisconsin Engineering Society, the N. O. Whitney Engineering Society, and the J. B. Johnson Engineering Society in the College of Engineerig discuss professional and semi-professional subjects.

The most important scientific organization is the Science Club, which includes both officers of instruction and advanced students, and seeks to promote an interest in scientific study and research. It conducts public meetings for the untechnical discussion of scientific topics of current interest to which all members of the University are invited. A bronze medal, executed by T. Moring, London, is annually awarded by the Club for the best thesis on a scientific subject. During the present year two important organizations: the Historical and Political Science Asssociation and the Language and Literature Club have been organized by instructors and graduate students for the purpose of fostering the community of work. In several departments of the University there are journal clubs or societies for furthering the special work of the departments. Among these are the *Germanistische Gesellschaft;* a Scandinavian society, the *Nora Samlag;* the Classical Club, the English Literature Journal Club, the Mathematical Club, the Physics Journal Club, the Biological Club, and the Chemical Club. In other departments where no such organization has been effected similar results are reached by means of the various seminaries. The graduate students of the University have organized a Graduate Club, and the women have organized a Woman's Self Government Association. The religious organizations of the University include the Young Men's Christian Association, and the Young Women's Christian Association. Honorary fra-

ternities are represented by Phi Beta Kappa (since 1898) and Tau Beta Pi (since 1899), the honorary engineering fraternity.

SCHOLARSHIPS FOR UNDERGRADUATES.

The Amelia H. Doyon Scholarships.

By the will of Mrs. Amelia H. Doyon, late of Madison, the University has received a gift of five thousand dollars, to be known as the Amelia H. Doyon fund. The income from this fund is to be divided into two equal parts, to be designated as the Amelia H. Doyon Scholarships, which are to be given to young women in attendance at the University, to be selected by the Faculty. In making this selection the Faculty is to take into consideration the scholarship or standing of the persons selected and their need of financial help. Neither of these scholarships is to be bestowed on any young woman who has not been in attendance as a student at the University of Wisconsin for at least one year.

Hebrew and Hellenistic Greek Scholarships.

The Biblical Alliance of Wisconsin offers a sum of money, at present amounting to fifteen hundred dollars, to provide scholarships for the encouragement of study in the department of Hebrew and Hellenistic Greek. These may be held by graduates or undergraduates. Award is made on basis of excellence. Information regarding the scholarships will be given on application to Professor W. H. Williams.

For the graduate scholarships, see Department of Graduate Study on a subsequent page.

LOAN FUNDS.

The John A. Johnson Fund.

The University is indebted to the liberality of the Hon. John A. Johnson, late of Madison, for a fund of $5,000, the interest of which is loaned to students. The sum obtained by one student in one year shall not exceed $50, and the total amount shall not exceed $200. At present the benefits of the fund are limited to Scandinavian students. The income of this fund is loaned by a sub-committee of the Faculty Committee on Loan Funds, consisting of Professors Olson and Bull.

The Graduating Class Fund.

The class of 1900 gave to the University several hundred dollars as the nucleus of a loan fund for the aid of needy students. The classes of 1901 and 1902 have made substantial additions to the fund, and it is hoped that succeeding classes will also add to it. This fund is under the charge of the Faculty Committee on Loan Funds, consisting of the President of the University, Professor Charles Forster Smith, Chairman, and Professors Bull, Olson, Gay and Mayhew.

The Secretary's Fund.

The Secretary of the Regents in 1890 established a fund of $500 for the aid of meritorious students, hoping that others might in the course of time make additions to it. No loan shall exceed $50 in a single year, and the aggregate loans to any person shall not exceed $200. This fund is managed by the Secretary.

FEES AND EXPENSES.

GENERAL CHARGES.

All fees must be paid at the beginning of each semester, except in the College of Law, where they must be paid at the beginning of the academic year. Until this has been done the class officer cannot issue cards entitling the student to admission to classes. Graduate students, except honorary fellows, pay the same fees as undergraduates, whether they are in attendance at the University or *in absentia*.

Tuition is free for all students from the State of Wisconsin, except in the College of Law.

After ten days from the beginning of the semester, no fees are returned except by special vote of the Regents.

FEES FROM CANDIDATES FOR HIGHER DEGREES.

From all candidates for advanced degrees, a diploma fee of $5 is required; such fee is required to be paid to the Secretary of the Regents one month before Commencement, and no diploma shall be made out until such fee has been paid. If for any reason the degree is not conferred, the fee will be returned.

Each candidate for the degree of Doctor of Philosophy must deposit in the University library one hundred printed copies of his thesis. If the thesis is printed in a journal or as a bulletin of the University, reprints therefrom will be accepted by the library, but these must be provided with a special cover in proper thesis form. The candidate may receive his diploma before the thesis is printed, provided a written or typewritten copy of the thesis is deposited with the Librarian, and the sum of $50 with the Secretary of the Regents. The money will be returned on presentation to the library of the required number of printed copies of the thesis.

COLLEGE OF LETTERS AND SCIENCE, SCHOOL OF ECONOMICS AND POLITICAL SCIENCE, SCHOOL OF HISTORY, SCHOOL OF EDUCATION.

Resident tuition	FREE.
Non-resident tuition, per semester	$15 00
Incidental fee for all students, per semester	10 00
Additional fee for students electing studies in the College of Law, per year	25 00

COLLEGE OF MECHANICS AND ENGINEERING, AND SCHOOL OF PHARMACY.

Resident tuition	FREE.
Non-resident tuition, per semester	$20 00
Incidental fee for all students, per semester	15 00

COLLEGE OF AGRICULTURE.

Resident tuition	FREE.
Long course, non-resident tuition, per semester	$15 00
For all in long course, incidental fee, per semester	10 00
Short course, non-resident tuition, per term	15 00
For all in short course, incidental fee, per term	5 00
Dairy course, non-resident tuition, per term	15 00
For all in dairy course, incidental fee, per term	5 00
For non-residents in dairy course, lecture fee	10 00

COLLEGE OF LAW.

Tuition fee, first year	$ 75 00
Tuition fee, second year	50 00
Tuition fee, third year	25 00
Tuition fee for students graduating in one year	100 00

The fees for students graduating in two years are the same as for the first two years of the three-year course.

The fees in the College of Law are to be paid for the year at the beginning of the first semester. There is no additional fee for non-resident students in this college.

SUMMER SESSION AND WISCONSIN SUMMER SCHOOL, AND SUMMER SESSION FOR APPRENTICES AND ARTISANS.

General fee	$15 00

SUMMER SCHOOL OF LIBRARY SCIENCE.

Resident tuition	$10 00
Non-resident tuition	$15 00

SCHOOL OF MUSIC.

Persons who are members of other colleges or schools of the University may take the general courses of music without charge. Members of the School of Music and of other departments, who take spcial lessons, will pay fees as stated in the announcement of the school on a subsequent page of this catalogue.

CHADBOURNE HALL.

Room rent, heat and light, see page 51.

Board in Chadbourne Hall, payable to the matron, per week $3 75

These fees are subject to change at the opening of the college year.

LABORATORY FEES.

BIOLOGICAL LABORATORIES.—The laboratory fee for the elementary course in biology and for most of the advanced courses is $8.00 per year. The fee for vertebrate histology, for embryology, and for bacteriology is $8.00 per semester.

CHEMICAL LABORATORIES.—In these laboratories the deposit for a year's course is $20.00. The amount refunded will depend on the chemicals used and the care exercised by the student. The ordinary cost of a year's course is from $15 to $20.

GEOLOGY AND MINERALOGY.—Blowpipe analysis, per semester, $6.00; blowpipe analysis, two-fifths study, $4.00; three-fifths study, $6.00; petrography, per semester, $6.00.

PHYSICAL LABORATORIES.—The laboratory fee in the physical laboratories is $2.00 for each unit-hour (two hours per week of actual work) per semester.

PSYCHOLOGICAL LABORATORY.—The laboratory fee for the course in experimental psychology is $3.00; for other experimental work $3.00 per semester, $5.00 per year.

COLLEGE OF MECHANICS AND ENGINEERING.—The charge for laboratory work is $1.50 per unit-hour (two hours per week of actual work) per semester. There is also a charge of $1.50 per year for periodicals, supplied to the engineering reading room.

SCHOOL OF PHARMACY.—For general laboratory privileges a charge is made of $1.00 per unit-hour and semester. A separate account will be kept with the accountant of the storage room for special apparatus and material. The student will purchase coupons from the

Secretary of the Board of Regents ($5.00 at a time) and present them at the storage room. At the end of the year full credit will be given for such pieces of apparatus as are taken back in accordance with the rules of the storage room.

COLLEGE OF AGRICULTURE.—The following laboratory fees are required: Dairy school laboratory for residents $5.00, for non-residents $15; advanced dairy course, $6.00; pasteurizing course, $1.00; short course laboratory, for non-residents, $10.00; blacksmithing, $3.00; carpenter work, $3.00; long course students in bacteriology pay the same fees as students in general biology.

Long course students taking chemical work pay for gas and for apparatus at the same rate as in the general chemical laboratory.

In the department of Agricultural Physics students who take soil work are required to pay a laboratory fee of $1.00 for each unit-hour per semester.

GYMNASIUM PRACTICE AND MILITARY DRILL.

Young men in the College of Letters and Science, College of Mechanics and Engineering, and the four-year courses in agriculture and pharmacy, are required to take gymnastic exercises during the first two years of their course, and are also required to take military drill. Students required to drill must provide themselves with a uniform of color and pattern required by the Regents, which may be procured by special arrangement made with manufacturers.

Gymnasium fee	$2 00
Locker fee	1 50

Young women are required to take gymnastic exercises during the first two years of their course. A gymnasium fee of $1.00 per year is required, and $1.00 additional from those who make use of a locker. They must also provide themselves with a suitable costume, directions for which will be found on a subsequent page under the heading Physical Culture.

Students entering the four-year academic courses of the University should expect to pay the fee for general expenses ($10.00), and if not residents of the state, the tuition fee ($15) mentioned above, the gymnasium fees ($2.00 or $3.50); and laboratory fees for such courses as begin in the freshman year. In the College of Engineering and School of Pharmacy the fee for general expenses is $15.00, and the non-resident tuition fee is $20.00. Young men must be prepared to defray the cost of a uniform (about $15.00).

ROOMS AND BOARD.

Rooms, furnished and unfurnished, can be obtained in the city at reasonable rates. The cost of board in clubs is from $2.00 to $2.50 per week; in private families from $2.50 to $4.00 per week. Laundrying costs from sixty to sixty-five cents per dozen pieces. Many of the students support themselves in whole or in part. The places offering available work are eagerly sought for and cannot always be obtained at once. Those dependent upon themselves should secure some means of support before coming here.

CHADBOURNE HALL.

Chadbourne Hall (the women's dormitory) was largely rebuilt and greatly enlarged in 1896. The rooms are now arranged in suites of two, comprising a study and bed-room, intended for two occupants, or as single rooms intended for one student. The building will accommodate in this way ninety students.

The rooms are lighted by electricity and the heating apparatus is now connected with the central boiler plant, so that the danger of fire from heating is minimized. Freight and passenger elevators operated by electricity connect the several floors of the building.

An account of the women's gymnasium will be found under the caption Physical Culture on a succeeding page of the catalogue.

Students' rooms are carpeted and furnished, but occupants are expected to provide washstand furniture, towels, napkins, napkin rings, sheets, pillow cases, counterpanes, and blankets. Young women occupying this building are under the immediate charge of the Mistress of the Hall, and are required to board in the Hall. They are expected cheerfully to conform to the requirements necessary for a family of students. No deduction is made for voluntary absence, and any commutation of charges for board in cases where students leave before the close of the semester, except in case of necessity, is entirely voluntary with the matron in charge. The cost of board is $3.75 per week.

The price of rooms in Chadbourne Hall varies from $40 to $95 a year, according to location. A circular giving detailed information may be obtained by adressing the Secretary of the Regents. Persons occupying a room may retain the same for the succeeding year by application and making a deposit of ten dollars not later than May 1st. The deposit of ten dollars required from all students, new as well as old, to secure room, will be credited on the rent of the room,

if taken, but if the room is not taken it will be forfeited unless notification is received by the Secretary of the Regents prior to September 1st. Application for rooms and the payment of fees for the same should be made in all cases to the Secretary, who will assign all rooms. The balance due for rent must be paid to the Secretary, not later than the second week after the beginning of each semester. Rooms are rented to *bona fide* students of the University only. Application for rooms may be made at any time, but rooms will not be assigned to new students prior to May 1st. After that date they will be assigned in the order of application and the payment of ten dollars, and subject to the provision above made for former occupants.

If for any reason one of the occupants of a suite shall be obliged to give up her place in the suite, the remaining person must take a single room, if one is vacant, or pay the price for the full suite during the time it is occupied by her alone.

A person entering the Hall for the second semester only, shall pay the price of the room charged for the second semester, with the additional sum of ten dollars.

DEGREES.

FIRST DEGREES.

The baccalaureate degrees are conferred at graduation upon those who have successfully completed the regular courses leading to degrees, and who have conformed with all other requirements of the University. The degrees for the several courses are as follows:

Academic.*

BACHELOR OF ARTS, for the ancient classical course.

BACHELOR OF SCIENCE, for the general science course.

BACHELOR OF LETTERS, for the modern classical, the English, and the civic historical courses.

BACHELOR OF PHILOSOPHY IN PEDAGOGY, for the course for normal graduates.

Professional and Technical.

BACHELOR OF LAWS.

BACHELOR OF SCIENCE IN AGRICULTURE.

BACHELOR OF SCIENCE, CIVIL ENGINEERING COURSE.

BACHELOR OF SCIENCE, SANITARY ENGINEERING COURSE.

BACHELOR OF SCIENCE, MECHANICAL ENGINEERING COURSE.

BACHELOR OF SCIENCE, ELECTRICAL ENGINEERING COURSE.

BACHELOR OF SCIENCE, GENERAL ENGINEERING COURSE.

BACHELOR OF SCIENCE, APPLIED ELECTRO-CHEMISTRY COURSE.

BACHELOR OF SCIENCE, PHARMACY COURSE, for the four years' pharmacy course.

GRADUATE IN PHARMACY, for the pharmaceutical course.

A graduate of any one of the courses may receive the baccalaureate degree of any other course by completing the additional studies required in that course, but two baccalaureate degrees cannot be taken in one year. For a second bachelor's degree in the College of Letters and Science there are required one year's additional study and a special thesis.

*For degree conferred upon the graduates of the School of Commerce, see p. 88.

The conditions on which the bachelor's degrees are given will be found stated under the appropriate colleges and courses on subsequent pages.

HIGHER DEGREES.

The University confers the degrees of *Master of Arts, Master of Letters,* and *Master of Science* upon graduates who have previously taken the degrees of *Bachelor of Arts, Bachelor of Letters,* and *Bachelor of Science* in the College of Letters and Science. The degree of *Master of Philosophy* is conferred on those who have taken the degree of *Bachelor of Philosophy in Pedagogy.* The degree of *Doctor of Philosophy* is also granted.

The higher degrees *Civil Engineer, Mechanical Engineer,* and *Electrical Engineer* are conferred as second degrees in the College of Engineering. The degree of *Master of Pharmacy* is conferred as a second degree upon *Graduates in Pharmacy,* and the degree of *Master of Science in Pharmacy* is given as a second degree to *Bachelors of Science in Pharmacy.*

The degree of *Master of Science in Agriculture* is conferred on *Bachelors of Science in Agriculture.*

The conditions on which these higher degrees are granted will be found stated under Department of Graduate Study and also under the head of their respective colleges.

HONORS.

Honors are given at graduation for special work of high order of excellence done in any department. Such honors will be voted by the Faculty to those students whose graduation theses show exceptional excellence and who have completed with unusual success a long course of study in the department in which the thesis is presented. The thesis must show work additional to all requirements for graduation equal to two hours per week for one year. Students desiring to become candidates for special honors in any department must make application to the Faculty at the opening of the second semester through the professor in whose department the honors are sought.

DIPLOMAS AS STATE CERTIFICATES.

A law enacted by the legislature of 1901 states:

"A diploma granted upon the completion of a regular collegiate course of the University of Wisconsin, if accompanied by a certificate that the bearer has completed the course of pedagogical instruction prescribed by the University for all persons

who intend to teach, * * * upon presentation to the State Superintendent shall entitle the holder to receive from that officer a certificate which shall authorize him to teach in any public school for one year."

Sections 458 *b* and *d* of the Revised Statutes provide that after one year of successful teaching the diploma of a graduate of the University may be countersigned by the State Superintendent, and that when so countersigned the diploma shall have the force and effect given by law to the unlimited state certificate.

DEPARTMENT OF GRADUATE STUDY.

COMMITTEE ON GRADUATE STUDIES.

E. A. BIRGE, Ph. D., Sc. D., Acting President of the University. Dean of the College of Letters and Science.
C. F. SMITH, Ph. D., Professor of Greek and Classical Philology, *Chairman.*
F. E. TURNEAURE, C. E., Acting Dean of the College of Mechanics and Engineering.
W. A. HENRY, Agr. B., Dean of the College of Agriculture.
R. T. ELY, Ph. D., LL. D., Director of the School of Economics and Political Science.
F. J. TURNER, Ph. D., Director of the School of History.
W. A. SCOTT, Ph. D., Director of the School of Commerce.
EDWARD KREMERS, Ph. D., Director of the School of Pharmacy.
J. W. STEARNS, LL. D., Director of the School of Education.
J. C. FREEMAN, LL. D., Professor of English Literature.
R. A. HARPER, Ph. D., Professor of Botany.
L. KAHLENBERG, Ph. D., Professor of Physical Chemistry.
M. S. SLAUGHTER, Ph. D., Professor of Latin.
C. A. VAN VELZER, Ph. D., Professor of Mathematics.
E. VOSS, Ph. D., Professor of German Philology.

ORGANIZATION.

The Graduate Department is organized for the encouragement of research at the University.

The University aims to afford adequate means for advanced study and research, and excellent facilities have already been provided along important lines. Personal assistance is rendered by professors to graduates according to individual needs. Classes for advanced students are organized and seminaries are conducted in which original research may be carried on.

The advanced studies of the various departments lead to graduate work. The preparation of theses by members of the senior class,

and the courses of instruction leading to these, are intended to foster the spirit of investigation, and to serve as an introduction to research work. Under the opportunities for elective studies the undergraduate is enabled to concentrate work upon a leading line of study for several years, so that in his senior year he may do advanced work in certain classes designed for graduates and undergraduates.

Graduates from this University, and from other colleges and universities of recognized standing, and other advanced students suitably qualified, are permitted to become members of the graduate department.

The Regents of the University have established fellowships for the encouragement of graduate study; and in all of its departments the University furnishes abundant facilities for the publication of the results of original research. The laboratories and library facilities of the University, which are good in all lines, and are unexcelled in some directions, have already been described on preceding pages.

COURSES FOR GRADUATES.

In each of the departments of the University, graduate courses of instruction are offered, to which the courses offered for graduates and undergraduates of suitable attainments serve as an introduction. These courses are described on subsequent pages under the heading Departments of Study in the College of Letters and Science, College of Engineering, College of Agriculture, and School of Pharmacy. There is published each year a special announcement of the Department of Graduate Instruction, which may be obtained by application to the Registrar of the University.

In most departments the graduate courses change from year to year, so that a consecutive course of graduate study can be elected, extending over two or three years.

EXPENSES FOR GRADUATE INSTRUCTION.

The expenses for tuition and fees are for graduate students the same as those for undergraduates. The tuition for students not residents of Wisconsin is, per semester, $15 in the College of Letters and Science, and $20 in the College of Mechanics and Engineering and the School of Pharmacy. The general incidental fee is, per semester, $10 in the College of Letters and Science, and $15 in the College of Mechanics and Engineering and the School of Pharmacy. A diploma fee of $5 is required. Students working in the labora-

tories are required to pay a fee to cover the cost of materials and instruments used by them. A list of these charges and deposits will be found under the head Fees and Expenses.

REQUIREMENTS FOR HIGHER DEGREES.

Masters' Degrees.

The degrees of *Master of Arts, Master of Letters,* and *Master of Science* are conferred upon graduates who have previously taken the degrees of *Bachelor of Arts, Bachelor of Letters,* and *Bachelor of Science,* respectively, and who after graduation pursue an approved course of study equivalent to the work of one year of graduate study in the University and who present a satisfactory thesis upon the leading subject pursued. Students who desire to do part of their work for the master's degree *in absentia,* may accomplish by this method not more than half of the work required for the degree. At least one semester must be spent in residence at the University.

The work must consist of one major and one minor subject, must be in the general line of advanced study implied by the degree sought, and must be approved by the Committee on Graduate Studies. Two-thirds of this study must be devoted to the major subject and one-third to the minor. Study for a profession will not be accepted, but original investigation in connection with a profession, or special and scholarly study collateral to it, may be accepted in the discretion of the Faculty. A thesis showing creditable original research must be presented at least one month before the close of the academic year, and if the thesis is satisfactory an examination will be conducted by a committee of the Faculty on the major and minor subjects.

Upon the recommendation of the professors having immediate charge of the student's course of study, the Committee on Graduate Studies may excuse from the preparation of a master's thesis any graduate of the University whose bachelor's thesis gives sufficient evidence of ability to conduct original investigation such as is expected of candidates for the master's degree. Students desiring to avail themselves of this privilege must continue their graduate studies in the department in which their undergraduate major lay, and must make application for excuse from the additional thesis not later than November 1st of the academic year in which the degree is sought.

Graduates of this or of similar institutions who pursue the course in law at the University, and who, by reason of their superior train-

ing, are able to take additional studies advantageously, may receive a second degree at graduation from the College of Law on condition of having satisfactorily pursued graduate studies in the College of Letters and Science equivalent to five hours a week during two years of their course, and on conforming to the other required conditions.

The degrees of *Civil Engineer, Mechanical Engineer* and *Electrical Engineer* are conferred as second degrees upon *Bachelors of Science in Civil, Mechanical* and *Electrical Engineering* respectively, (1) who pursue advanced professional study at the University for one year and present a satisfactory project or thesis; or (2) who furnish suitable evidence of three years of professional work (of which one must be spent in a position of responsibility) and present a satisfactory thesis.

The degree of *Master of Pharmacy* will be conferred upon *Graduates in Pharmacy* who satisfactorily complete a course of one full year at the University in advanced pharmacy, or in some science or sciences especially allied to pharmacy, and who shall present a satisfactory thesis embodying the results of original investigation.

The degree of *Master of Science in Pharmacy* will be conferred upon *Bachelors of Science in Pharmacy,* under conditions similar to those required for second degrees in the College of Letters and Science.

Doctor's Degree.

The degree of *Doctor of Philosophy* will be conferred upon successful candidates after three years of graduate study, of which the last year or the first two years must be pursued at this University. This degree will not, however, be conferred simply on the ground of the completion of the prescribed length of time of study. Special attainments are requisite, particularly the power of original thought and independent investigation. The candidate will be examined upon one major and two minor subjects, which must be approved by the Committee on Graduate Studies not later than the beginning of the year in which the candidate expects to take the degree. A thesis must be presented which shall give evidence of original research and independent treatment. The applicant must announce himself as a candidate at least as early as the beginning of the last year of study, and his thesis must be placed in the hands of the Committee on Graduate Studies at least two months before the close of the academic year. The subject of the thesis must have the approval of the head

of the department in which the major subject is carried on as early as November 1st of the collegiate year in which the candidate expects to take his degree.

In case the candidate is successful, he is required to put his thesis into print and deposit one hundred copies of the same in the library of the University. If the thesis is printed in some journal, or as a bulletin of the University, reprints therefrom will be accepted by the Librarian, but these must be provided with a special cover and title-page of the approved form. The diploma may be conferred before the thesis is printed, provided a written or typewritten copy is deposited with the Librarian, and the sum of $50 with the Secretary of the Regents. The money will be refunded on presentation of the printed copies.

All candidates for this degree must have a reading knowledge of French and German at least one year before the degree is conferred.

FELLOWSHIPS.

University Fellowships.

For the purpose of promoting higher scholarship and more extended original study than the academic courses afford, the Board of Regents has established fourteen University fellowships of $400 each, of which two are especially devoted to Latin and Greek, and one to German; two are awarded to students of the School of History, and two to students of the School of Economics and Political Science. The Alumni have established one fellowship of $400.

The following are the regulations respecting these fellowships:

1. Any fellowship to which the present regulations apply may he held by any graduate of a college of recognized standing or by any one whose education is equivalent to that represented by a college degree. The Alumni Fellowship is open only to graduates of the University of Wisconsin, and no teaching is required of the holder. Those about to take such a degree are eligible as candidates, the regulations applying to the time of entrance upon the duties of the fellowship. Men and women are equally eligible.
2. Fellowships will be granted upon application only; such application, with accompanying evidence of merit, attainment, and ability, to be in the hands of the President before May 1st of the collegiate year preceding that during which the fellowship is held. This application must be made out upon a special blank which will be furnished by the Registrar.
3. All fellowships will be filled each year. Fellows may be re-elected for one additional year only.
4. Applications must be accompanied by evidence of scholarship, ability, and general worthiness — such as theses (whether prepared for this or other purposes), published writings, testimonials from instructors, outline of educational course pursued, special distinctions gained, and the like. Applications for reappointment should contain a full account of the work for the preceding year. Applications to receive attention must contain a definite

statement of the special studies which the applicant intends to pursue.

5. The fellowships will be assigned to the several departments according to the studies which the fellows intend to pursue.

6. Each fellow shall pursue his studies under the direction of the professor or professors in charge of his special studies. Assignment of University services to the fellows shall be made by the President in consultation with the head of the department to which the fellow has been assigned, and the work assigned may be equivalent to one hour of teaching daily, or the supervision of laboratory work for two hours daily.

7. At a meeting of the Faculty in the month of May (which meeting shall be duly announced as the meeting for the election of fellows), the President shall call upon the several heads of the departments in which applications have been received, to make a statement of the merits of the candidates in their departments; after all such statements have been made the members of the Faculty will cast their ballots for as many candidates as there are fellows to be elected, and those receiving the highest number of votes (provided that each receive a majority of the votes cast) shall be recommended to the Board of Regents for appointment to fellowships.

Vacancies in fellowships due to resignation or other cause may be filled as they occur, at the option of the Faculty.

Honorary Fellowships

The Regents have established honorary fellowships, equal in number to the regular fellowships, and filled in a similar way. No compensation is attached to these positions except the remission of University fees, and no teaching service is required from these fellows. Honorary fellowships are restricted to such persons as have already held academic honors, such as fellowships. No person is eligible to an honorary fellowship unless he be a graduate of at least one year's standing.

The August Uihlein Fellowship.

Mr. August Uihlein, of Milwaukee, in 1895 generously established a pharmaceutical fellowship on a financial basis of $400 per annum.

The Biblical Alliance Fellowship.

The Biblical Alliance of Wisconsin in 1902 established a fellowship in Hebrew or Hellenistic Greek of the value of $400 annually.

The Hebrew Fellowship.

The Hebrew Lectureship and Scholarship Society offers a fellowship of the value of $400 for special excellence in Hebrew studies.

The Social Settlement Fellowships.

Citizens of Milwaukee in 1901 established a University Social Settlement Fellowship in the School of Economics and Political Sci-

ence, of the value of $400. Other friends of the University in 1901 established a fellowship in the same school to be known as the Chicago Social Settlement Fellowship, of the value of $300.

GRADUATE SCHOLARSHIPS.

The Regents of the University have established two graduate scholarships of the value of $200 each; one in European history, and the other in American history. They have also established two scholarships yielding $250 each, appointments to be made from students of the School of Economics and Political Science.

The Wisconsin League of Municipalities has founded the Scholarship in Municipal Government which yields about $200.

Through the generosity of an alumnus two graduate scholarships of the value of $250 each are awarded annually in the literary department of the University. One of these is known as the *William F. Allen Graduate Scholarship,* and the other as the *J. C. Freeman Graduate Scholarship.*

A friend of the University has founded a scholarship known as the *Henrik Wergeland Graduate Scholarship* of the value of $200 annually, open to graduate students of Norwegian ancestry.

A scholarship for Japanese students amounting to $50 annually for four years has been founded by Mr. Benj. K. Miller, of Milwaukee.

In 1900 public-spirited citizens of Sheboygan established a *Graduate Scholarship in German Philology* of the annual value of $300.

The Biblical Alliance of Wisconsin contributes $1,500 annually for the encouragement of studies in the department of Hebrew and Hellenistic Greek, a part of which amount goes to graduate students.

THE COLLEGE OF LETTERS AND SCIENCE.

STAFF OF INSTRUCTION.

E. A. Birge, Ph. D., Sc. D., Acting President of the University, and Dean of the College of Letters and Science. Professor of Zoology.

T. S. Adams, Ph. D., Assistant Professor of Economics and Statistics.

W. B. Cairns, Ph. D., Assistant Professor of English.

J. M. Clements, Ph. D., Assistant Professor of Geology.

Victor Coffin, Ph. D., Assistant Professor of European History.

G. C. Comstock, Ph. B., LL. B., Professor of Astronomy.

C. A. Curtis, A. B., Professor of Military Science and Tactics.

W. W. Daniells, M. S., Sc. D., Professor of Chemistry.

L. W. Dowling, Ph. D., Assistant Professor of Mathematics.

J. C. Elsom, M. D., Professor of Physical Culture.

R. T. Ely, Ph. D., LL. D., Professor of Political Economy.

C. R. Fish, Ph. D., Assistant Professor of American History.

G. C. Fiske, Ph. D., Assistant Professor of Latin.

D. B. Frankenburger, A. M., LL. B., Professor of Rhetoric and Oratory.

J. C. Freeman, LL. D., Professor of English Literature.

Lucy M. Gay, B. L., Assistant Professor of French.

W. F. Giese, A. M., Assistant Professor of Romance Languages.

R. A. Harper, Ph. D., Professor of Botany.

H. W. Hillyer, Ph. D., Assistant Professor of Organic Chemistry.

W. H. Hobbs, Ph. D., Professor of Mineralogy and Petrology.

A. R. Hohlfeld, Ph. D., Professor of German.

F. G. Hubbard, Ph. D., Professor of the English Language.

Joseph Jastrow, Ph. D., Professor of Experimental and Comparative Psychology.

Louis Kahlenberg, Ph. D., Professor of Physical Chemistry.

Alexander Kerr, A. M., Professor of the Greek Language and Literature.

A. G. Laird, Ph. D., Assistant Professor of Ancient Languages.

H. B. Lathrop, A. B., Associate Professor of English Literature.
C. K. Leith, Ph. D., Assistant Professor of Geology.
Victor Lenher, Ph. D., Assistant Professor of General and Theoretical Chemistry.
W. S. Marshall, Ph. D., Assistant Professor of Zoology.
Abby S. Mayhew, Mistress of Chadbourne Hall and Assistant Professor of Physical Culture.
C. E. Mendenhall, Ph. D., Assistant Professor of Physics.
B. H. Meyer, Ph. D., Professor of Institutes of Commerce.
W. S. Miller, M. D., Assistant Professor of Vertebrate Anatomy.
J. C. Monaghan, A. B., Professor of Theory and Practice of Domestic and Foreign Commerce.
D. C. Munro, A. M., Professor of European History.
J. E. Olson, B. L., Professor of the Scandinavian Languages and Literature.
M. V. O'Shea, B. L., Professor of the Science and Art of Education.
E. T. Owen, Ph. D., Professor of the French Language and Literature.
F. A. Parker, Professor of Music.
J. B. Parkinson, A. M., Professor of Constitutional and International Law.
J. F. A. Pyre, Ph. D., Assistant Professor of English Literature.
P. S. Reinsch, Ph. D., LL. B., Professor of Political Science.
W. A. Scott, Ph. D., Professor of Economic History and Theory.
F. C. Sharp, Ph. D., Assistant Professor of Philosophy.
Grant Showerman, Ph. D., Assistant Professor of Latin.
E. B. Skinner, Ph. D., Assistant Professor of Mathematics.
M. S. Slaughter, Ph. D., Professor of Latin.
C. S. Slichter, M. S., Professor of Applied Mathematics.
C. F. Smith, Ph. D., Professor of Greek and Classical Philology.
B. W. Snow, Ph. D., Professor of Physics.
S. E. Sparling, Ph. D., Assistant Professor of Political Science.
J. W. Stearns, LL. D., Professor of Philosophy and Pedagogy.
Susan A. Sterling, M. L., Assistant Professor of German.
A. W. Tressler, A. B., Assistant Professor of Pedagogy.
Augustus Trowbridge, Ph. D., Assistant Professor of Mathematical Physics.
F. J. Turner, Ph. D., Professor of American History.
C. R. Van Hise, Ph. D., Professor of Geology.
C. A. Van Velzer, Ph. D., Professor of Mathematics.

*E. K. J. H. Voss, Ph. D., Professor of German Philology.
W. H. Williams, A. B., Professor of Hebrew and Hellenistic Greek.
C. E. Allen, B. S., Instructor in Botany.
Florence E. Allen, M. L., Instructor in Mathematics.
M. F. Angell, B. S., Assistant in Physics.
Arthur Beatty, Ph. D., Instructor in English.
W. J. Bishop, Student Assistant in Gymnastics.
W. G. Bleyer, M. L., Instructor in English.
B. H. Bode, Ph. D., Instructor in Philosophy.
H. E. Bradley, B. A., Student Assistant in Gymnastics.
H. G. A. Brauer, Ph. D., Instructor in French.
A. C. L. Brown, Ph. D., Instructor in English.
E. A. Bredin, Instructor in Music.
E. A. Cook, B. L., Instructor in English.
A. R. Crathorne, B. S., Instructor in Mathematics.
M. L. Daggy, Ph. B., Instructor in Rhetoric and Oratory.
R. E. N. Dodge, M. A., Instructor in English.
Jerome Dowd, M. A., Resident Lecturer in Sociology.
Abbie F. Eaton, M. L., Instructor in German.
Henry Fox, B. S., Instructor in Biology.
W. D. Frost, M. S., Instructor in Bacteriology.
S. H. Goodnight, M. A., Assistant in German.
C. H. Handschin, Ph. D., Instructor in German.
Sabena M. Herfurth, M. L., Assistant in German.
W. J. Huddle, A. B., Assistant in Chemistry.
May Hunt, M. L., Instructor in English.
E. B. Hutchins, Jr., M. S., Assistant in Quantitative Chemical Analysis.
R. H. Johnson, B. S., Assistant in Vertebrate Anatomy.
F. T. Kelly, Ph. D., Instructor in Hebrew and Hellenistic Greek.
W. H. Kelly, Ph. B., Assistant in Physics.
G. R. Laird, A. B., O. M., Instructor in Elocution.
Toyokichi Iyenaga, Ph. D., Resident Lecturer in Political Science.
Marion B. Lamont, Assistant in Elocution.
M. O. Lorenz, A. B., Assistant in Economics.
F. W. Meisnest, B. S., Instructor in German.
L. F. Miller, M. A., Assistant in Physics.
A. M. O'Dea, Instructor in Athletics and Assistant to the Director of the Gymnasium.

*On leave of absence in Europe.

H. B. North, Ph. G., Student Assistant in Chemistry.
H. E. Patten, Ph. D., Instructor in Chemistry.
W. D. Patton, Student Assistant in General Chemistry.
Otto Patzer, M. L., Instructor in French.
W. M. Persons, B. S., Instructor in Mathematics.
U. B. Phillips, Ph. D., Instructor in History.
Annie M. Pitman, A. B., Assistant in Latin.
P. F. Reiff, Ph. D., Instructor in German.
E. C. L. C. Roedder, Ph. D., Instructor in German.
W. C. Ruediger, Ph. B., Assistant in Pedagogy.
G. C. Sellery, Ph. D., Instructor in History.
A. R. Seymour, M. L., Assistant in French.
W. O. Sypherd, M. A., Instructor in English.
H. C. Taylor, M. S., Instructor in Commerce.
A. C. Tilton, Ph. D., Instructor in European History.
H. G. Timberlake, M. S., Instructor in Botany.
E. M. Terry, A. B., Assistant in Physics.
C. A. Tibbals, Jr., Student Assistant in Chemistry.
Elsbeth Veerhusen, A. B., Assistant in German.
A. S. Wheeler, A. B., Assistant in English.
G. M. Wilcox, B. A., Assistant in Physics.
G. W. Wilder, Ph. D., Instructor in Physics.
H. C. Wolff, M. S., Instructor in Mathematics.

ADMISSION TO THE UNIVERSITY.

I. EXAMINATIONS AT THE UNIVERSITY.

The regular examinations of the University are two in number, one in June and one in September. The earlier one is intended for those who wish to be examined while fresh from their preparatory studies, and for those who wish to test their qualifications at an early date in order that they may have time to make up deficiencies if necessary. The September examination immediately precedes the opening of the first semester.

For the current year the earlier examinations will be held on Thursday and Friday, June 11th and 12th, beginning at 9 o'clock A. M. The later examinations will be held on Tuesday and Wednesday, September 29th and 30th, beginning at 9 o'clock A. M. Students who are in any doubt as to their qualifications are urged to present

themselves in June. All candidates are required to be present at 9 o'clock on the first day of the examinations.

The examinations will cover the following topics:

Group I. Subjects required of all candidates.

a. GEOGRAPHY, political and physical.

b. HISTORY OF THE UNITED STATES: McLaughlin, Channing, Thomas, Johnston, Montgomery, or an equivalent. The more advanced texts of these authors are required.

c. ARITHMETIC.

d. ALGEBRA: Addition, subtraction, multiplication, division, equations of the first degree with one unknown number, simultaneous equations of the first degree, factors, highest common factor, lowest common multiple, quadratic equations, simultaneous equations above the first degree, theory of indices (positive, negative, fractional, and zero), and radicals.

GOEMETRY: Plane and solid geometry. In solid geometry special attention should be given to the geometry of the sphere.

e. ENGLISH IN GENERAL: No pupil will be accepted in English whose written work is notably deficient in point of *spelling, punctuation, paragraphing, or idiom.*

f. ENGLISH COMPOSITION: 1. The candidate will be required to write two essays of not less than two hundred words each, on subjects chosen by himself from a considerable number—perhaps ten or fifteen—set before him in the examination paper, and one of the topics chosen must be taken from the books assigned for general reading under English Literature.

2. In place of the essay on the topic drawn from the books set for general reading, the candidate will be allowed to offer an exercise book containing the first draft of essays written during his preparatory course, on topics taken from the works prescribed for general reading. These essays must be written under the eye of the teacher without consulting the books from which the subjects are taken, and without other assistance, must be kept in the care of the teacher, and sent by him to the examiner at least one week before the date of the entrance examination, with his certificate that they have been written in accordance with these requirements.

g. ENGLISH LITERATURE. The following lists include (1) a series of books for general reading, which may also be used as a basis for work in English composition; (2) a limited number of masterpieces for thorough study. In addition to the essays called for under the head of *English Composition*, there will be required such further tests as seem suited to secure a careful reading of all the books prescribed in series (1). The written statement of the teacher will be sufficient, in general, for this purpose. In the case of the books set for more thorough study, the candidate will be examined on subject-matter, form, and substance, and the examination will be of such a character as to require a thorough study of each of the works named, in order to pass it successfully.

1. For General Reading and Composition work:

1903, 1904, 1905—The *Sir Roger de Coverley Papers*, Goldsmith's *Vicar of Wakefield*, Scott's *Ivanhoe*, Shakespeare's *The Merchant of Venice* and *Julius Caesar*, Coleridge's *The Ancient Mariner*, Carlyle's *Essay on Burns*, Tennyson's *The Princess*, Lowell's *The Vision of Sir Launfal*, George Eliot's *Silas Marner*.

2. For thorough study:

1903, 1904, 1905—Shakespeare's *Macbeth*, Milton's *Lycidas*, *Comus*, *L'Allegro*, and *Il Penseroso*, Burke's *Speech on Conciliation with America*, Macaulay's essays on Milton and Addison.

h. ENGLISH GRAMMAR. There is included in the requirement for entrance a knowledge of the leading facts of English Grammar, and tests of such knowledge will be made a part of the examination.

Group II. Requirements for Admission to the Ancient Classical Course.

a. The studies enumerated in Group I.

b. LATIN: Grammar and elementary book; Caesar, four books or an equivalent amount of Nepos, Caesar (at least two books) and selections; Cicero, seven orations (selections from the letters, as given, for example, in Kelsey's edition, may be substituted for two orations); Vergil, six books; Composition, preferably in connection with Caesar and Cicero.

c. GREEK: Grammar; Lessons: Xenophon's *Anabasis*, four

books; Homer's Iliad, three books or an equivalent amount of the *Odyssey;* Greek composition.

d. ANCIENT HISTORY: West's Ancient History; or for the oriental nations and Greece: Myers or Botsford; for Rome: Allen, Botsford, Morey, or Myers, with collateral work in the school library.

e. ENGLISH HISTORY: Larned, Coman and Kendall, or Montgomery, with collateral work in the school library. An approved course for one year in mediaeval and modern history may be substituted for English history.

Students prepared to enter the modern classical course may be admitted as freshmen to the ancient classical course and graduate with the degree of *Bachelor of Arts* on the following conditions: They shall take elementary Greek five times per week during the freshman year; continue Greek four times a week during the sophomore and junior years and complete all the other requirements of the ancient classical course.

Group III. Requirements for Admission to the Modern Classical Course.

a. The studies enumerated in Group I.

b. LATIN as stated in Group II., b.

c. HISTORY as stated in Group II., d., e.

d. GERMAN: The "elementary course" of the "Report of the Committee of Twelve" (to be had at nominal cost, from D. C. Heath & Co., Boston). Applicants should be able to pronounce and translate at sight easy prose, to put into German easy English sentences, and to carry on a very simple conversation. The work to be done should comprise (1) pronunciation; (2) the memorizing of simple poems and colloquial sentences; (3) elementary grammar, as much as is contained in the ordinary "brief grammars," or in the "first part" of larger grammars like Joynes-Meissner or Thomas; (4) oral written exercises and conversational practice; (5) the reading of at least 200 pages of graduated texts, chiefly narrative prose. For suitable texts see the "Report," p. 63.

Group IV. Requirements for Admission to the Civic Historical Course.

a. The studies enumerated in Group I.

b. LATIN as stated in Group II., b.

c. HISTORY as stated in Group II., d., e.

d. One of the following:
   1. German as stated in Group III., d., or
   2. Science as stated in Group V., c., d., e.; or
   3. English literature as stated in Group VI., c; and physics as stated in Group V., c.

Group V. Requirements for Admission to the General Science ***Course, to all the Courses in Engineering, and to the*** *Four Years' Pharmacy Course.*

a. The studies named in Group I.

b. GERMAN as stated in Group III., d., or an equivalent amount of French.

c. PHYSICS: Carhart and Chute, Gage, or Avery, with laboratory work.

d. PHYSIOLOGY: Martin's *The Human Body* (briefer course), or an equivalent.

e. BOTANY: Two terms' study required, of which at least sixty hours shall be laboratory work devoted to the anatomy and physiology of plants. A knowledge of the main groups of cryptogams is required.

f. ADAPTIVE WORK, amounting to one daily recitation for two years. This may consist of various subjects. The University advises:
   1. Two years' daily work in French or Latin; or,
   2. One year's work in history, equivalent to that stated in Group II., d., e., and
      One year's work in English literature, as stated in Group VI., c.
   3. Year courses with laboratory practice in zoology, chemistry, or geology, or additional work in physics or botany, may be offered to the extent of either one or two years' work.

   Students who are to enter the College of Engineering are advised to offer chemistry, and candidates for this college may offer a year in chemistry either as adaptive work, or as a substitute for the required botany.

   If chemistry is offered, it must satisfy the following requirements: text book accompanied by laboratory experiments, such as are indicated in Newell's Experimental Chemistry, or the laboratory manuals of Hillyer, or of Lindsay and Storer, or an equivalent amount of similar laboratory work.

Group VI. Requirements for Admission to the English Course.

a. The studies named in Group I.

b. HISTORY as prescribed in Group II., d., e.

c. ENGLISH LITERATURE: A brief outline of the History of English Literature. Careful study of representative writers. For the outline history there may be substituted a study of Gayley's *Classic Myths in English Literature.* The whole to be equal to a daily recitation for one year.

d. SCIENCE as prescribed in Group V., c., d., e.

e. ADAPTIVE WORK as stated in Group V., f.

Students entering this course are advised to present either Latin, French, or German as their adaptive work. Candidates not presenting any foreign language are urged to make a thorough review of English grammar. Experience has shown that a not inconsiderable number of students fail in French and German at the University from deficient preparation in English grammar.

Courses in history and in English, in addition to those prescribed above for admission, may be offered as adaptive work.

The completion of the English course of an accredited Wisconsin high school will be accepted for admission to this course.

Real equivalents will be accepted for the requirements given above. Students desiring admission to any course must present those requirements which are essential to the work of the course.

Admission of Special Students.

Candidates under twenty-one years of age desiring to take special courses are required to present the same qualifications as candidates for one of the regular courses.

Persons twenty-one years of age, who are not candidates for a degree, and who wish to take special studies, are permitted to do so upon giving satisfactory evidence that they are prepared to take the desired studies advantageously. If they subsequently desire to become candidates for a degree, or to take a regular course, they must pass the required entrance examination.

II. ADMISSION UPON CERTIFICATE.

ACCREDITED SCHOOLS.—Any high school or academy whose course of instruction covers the branches requisite for admission to one or more of the courses of the University may be admitted to its accredited list of preparatory schools after a satisfactory examina-

tion by a committee of the Faculty. Application for such an examination may be made by an officer of the school to the President of the University, on the basis of which a committee of the Faculty will examine the course of study and the methods of instruction in the school, and on their favorable recommendation and the concurrence of the Faculty it will be entered upon the accredited list of the University. No school will be placed upon the list whose course of study is not fully equal to the four-year course of high schools recommended by the State Superintendent. The *graduates* of such an approved school will be received by the University, on presentation of a proper certificate, into any of its courses for which they have been fitted. Students of an accredited school who are not graduates must expect to be examined on the same terms as other candidates.

The University desires to keep itself fully informed regarding the work of its accredited schools by means of annual reports and frequent inspections. Every accredited school is required to report each year concerning its teachers, course of study, methods of instruction, and material equipment. Blank forms are furnished by the University for this purpose. The University sends out inspectors at its own expense and at the convenience of the members of the staff. Especial attention is called to the necessity of promptly notifying the Secretary of the Committee on Accredited Schools of changes in the dates of examinations and vacations. The list of accredited schools will be found at the end of this section.

Principals of accredited schools are requested to note the statements regarding English, German, Latin, and adaptive work under Terms of Admission; and especial attention is called to the examination of freshmen in English, as stated on pages 67-68.

Graduates of the State Normal Schools.

The certified standing of any student in the regular courses of the Normal schools of this state will be accepted for entrance to the University in place of an examination in the subjects covered by the certificate.

The University offers a course designed especially for Normal graduates and leading to the degree of Bachelor of Philosophy in Pedagogy. This course includes advanced instruction in pedagogy and those studies in languages and science, both required and elective, which will best fit the graduate of our Normal schools for the successful conduct of his chosen profession. To this course grad-

uates of the Normal schools will be admitted with the rank of junior on the presentation of their diplomas. Graduates of the Normal schools who desire admission to the other courses of the University will be admitted to such courses with the provisional grade of junior. They will be required, however, to take two years of work of rank equivalent to that of juniors and seniors in the University and will be required to make good deficiencies in the work of the freshmen and sophomore years. Full credit will be given for all work done in the Normal schools which is equivalent to that of the University courses.

Students from Other Colleges and Universities.

Students from other institutions, who have pursued standard college courses equivalent to those of the University, will be admitted to a like standing upon the presentation of proper certificates of creditable standing and honorable dismissal. Students of other colleges of good standing who have not taken such standard courses, but who have studied one year in the college proper, may be admitted to the University as special students without examination, or, upon such an examination as may be necessary to determine their attainments, they may be admitted to any course or to any class for which they are found fitted. Students coming from other institutions are required to present certificates of standing and honorable dismissal, and the University reserves the right to test the value of class records by actual examination.

No person will be admitted to the University later than November 1st of the year in which he expects to graduate.

LIST OF ACCREDITED SCHOOLS.

For all Courses.

School.	*Principal.*
Beaver Dam: Wayland Academy	E. P. Brown.
Beloit	F. E. Converse.
Cedar Rapids (Ia.)	Abbie S. Abbott.
Chicago High Schools:	
Austin	G. H. Rockwood.
Calumet	A. S. Hall.
Englewood	J. E. Armstrong.
Hyde Park	C. W. French.

Jefferson	C. A. Cook.
Lake	E. F. Stearns.
Lake View	B. F. Buck.
Marshall	L. J. Block.
McKinley, Wm.	G. M. Clayberg.
Medill	E. C. Rosseter.
North-West Division	F. P. Fisk.
South Chicago	C. I. Parker.
South Division	S. R. Smith.
Waller, Robert A.	O. S. Wescott.
Chicago: Harvard School	J. J. Schobinger. / J. C. Grant.
Chicago: Kenwood Institute	Annice B. Butts.
Chicago: Chicago Manual Training School	H. H. Belfield.
Colorado Springs (Colo.)	E. L. Mason.
Davenport (Ia.)	W. D. Wells.
Decatur (Ill.)	S. W. Ehrman.
Delafield: St. John's Military Academy	S. T. Smythe.
Denver (Colo.): District No. 1	W. H. Smiley.
Dubuque (Ia.)	F. L. Smart.
Duluth (Minn.)	C. A. Smith.
Elgin (Ill.)	E. J. Kelsey.
Evanston (Ill.): Evanston Township	H. L. Boltwood.
Evansville	H. F. Kling.
Evansville (Ind.)	R. Spear.
Faribault (Minn.): Shattuck School	James Dobbin.
Fond du Lac: Grafton Hall	B. Talbot Rogers.
Indianapolis (Ind.)	G. W. Hufford.
Indianapolis (Ind.): Manual Training High School	C. E. Emmerich.
Janesville	H. C. Buell.
School.	*Principal.*
Kenosha	W. J. Hammill.
La Crosse	W. R. Hemmenway.
La Grange (Ill.): Lyons Township	E. R. Cole.
Lake Forest (Ill.): Lake Forest Academy	J. C. Sloane.
Macon (Mo.): Blees Military Academy	J. R. Richards.
Madison	J. H. Hutchison.

Madison: Wisconsin Academy	Miss C. E. Richmond.
Marquette (Mich.)	A. A. Kienholz.
Milwaukee: East Division	A. Burch.
Milwaukee: South Division	E. Rissman.
Milwaukee: West Division	C. E. McLenegan.
Milwaukee Academy	Julius H. Pratt, Jr.
Milwaukee-Downer College	Miss E. C. Sabin.
Seminary Dept.	
Monroe	G. W. Swartz.
Morgan Park (Ill.): Morgan Pk. Academy	Wayland Chase.
Oak Park (Ill.)	J. C. Hanna.
Omaha (Nebr.)	A. M. Waterhouse.
Orchard Lake (Mich.): Mich. Mil. Acad.	James H. Harris.
Pueblo (Colo.): Dist. No. 1.	H. M. Hart.
Quincy (Ill.)	D. R. Rawlins.
Racine College	H. D. Robinson.
Rockford (Ill.)	B. D. Parker.
Rock Island (Ill.)	J. F. Darby.
Salt Lake City (Utah.)	G. A. Eaton.
San Jose (Cal.)	A. C. Schumate.
Sinsinawa: St. Clara Academy	Dominican Sisters.
Sioux City, (Ia.)	G. F. Marshall.
Spokane (Washington)	H. T. Coleman.
Waukesha, Carroll College	W. L. Rankin.

For Ancient Classical, Modern Classical, and Civic Historical Courses.

Ashland: North Wisconsin Academy	M. J. Fenenga.
Rochester: Rochester Academy	J. F. Eaton.

For Modern Classical, Civic Historical, General Science, English, Engineering, Four Years' Pharmacy, and Agricultural Courses.

School.	*Principal.*
Antigo	F. F. Showers.
Appleton: Ryan	R. W. Pringle.
Ashland	R. L. Burns.
Aurora (Ill.): East	W. F. Geiger.

Aurora (Ill.): West	Katharine Reynolds.
Baraboo	H. A. Whipple.
Bayfield	W. H. Shephard.
Beaver Dam	H. B. Hubbell.
Belvidere, (Ill.): South	Carrie Lindley.
Berlin	G. H. Landgraf.
Bessemer (Mich.)	W. Talcott.
Black River Falls	J. E. Hale.
Boone (Ia.)	Lizzie Haas.
Boscobel	M. C. Palmer.
Brodhead	Taylor Frye.
Burlington	W. H. Hickok.
Burlington (Ia.)	M. Ricker.
Charleston (Ill.)	A. H. Washburn.
Chippewa Falls	S. B. Toby.
Clinton	R. E. Loveland.
Clinton (Ia.)	J. S. McCowan.
Columbus	M. H. Jackson.
Council Bluffs (Ia.)	F. C. Ensign.
Cumberland	J. H. Ames.
Darlington	C. G. Babcock.
Decorah (Ia.)	H. C. Johnson.
De Forest: Windsor Township	E. C. Meland.
Delavan	C. W. Rittenburg.
DePere	E. T. O'Brien.
Des Moines (Ia.): North	W. E. D. Rummel.
Des Moines (Ia.): West	W. O. Riddell.
Dixon (Ill.)	C. W. Groves.
Dodgeville	De Witt Elwood.
Eau Claire	M. S. Frawley.
Edgerton	W. A. Clark.
Elkhorn	T. J. Jones.
Escanaba (Mich.)	W. M. Jolliffe.
Fond du Lac	Elizabeth A. Waters.
Fort Atkinson	J. A. Hagemann.
Freeport (Ill.)	S. E. Raines.
Grand Rapids	Kate McKercher.
Green Bay: East Side	W. O. Brown.

Green Bay: West Side	H. H. Hendrickson.
Harvey (Ill.): Thornton Township *School.*	J. E. Cable. *Principal.*
Highland Park (Ill.)	W. A. Wilson.
Hillsdale Home School	Ellen C. Loyd-Jones. Jane Lloyd-Jones.
Hinsdale (Ill.)	J. M. Frost.
Hudson	M. N. McIver.
Iron Mountain (Mich.)	J. F. Reed.
Ironwood (Mich.)	L. L. Wright.
Ishpeming (Mich.)	Mrs. Gertrude Sober.
Joliet (Ill.)	J. S. Brown.
Kaukauna	A. M. Olson.
Keokuk (Ia.)	J. Benjamin.
Lake Geneva	J. N. Foster.
Lancaster	L. L. Clarke.
Leadville (Colo.)	A. P. Troth.
Manitowoc: South Side	W. E. Luehr.
Monitowoc: North Side	P. G. W. Keller.
Marinette	H. R. Chamberlain.
Marshalltown (Ia.)	E. U. Graff.
Marshfield	J. B. Borden.
Mazomanie	F. G. Kraege.
Menasha	J. Callahan.
Mendota (Ill.): Blackstone	G. C. Griswold.
Menomonie	W. L. German.
Menominee (Mich.)	J. E. Hoyt.
Merrill	Anna E. Anderson.
Milton Junction	J. T. Healy.
Mineral Point	J. F. Bergen.
Moline (Ill.)	J. H. Heil.
Neenah	O. J. Schuster.
New Richmond	C. J. Brewer.
Oconto	C. A. H. Fortier.
Oshkosh	A. B. O'Neil.
Plymouth	A. A. Thomson.
Portage	W. G. Clough.
Poynette	C. E. Lamb.

Prairie du Chien	P. A. KOLB.
Racine	E. W. BLACKHURST.
Reedsburg	W. P. ROSEMAN.
Rensselaer (Ind.)	W. O. HIATT.
Rhinelander	F. A. LOWELL.
Richland Center	G. E. PRATT.
Ripon	V. A. SUYDAM.
River Falls	J. W. T. AMES.
Riverside (Ill.)	A. F. AMES.
Sheboygan	J. S. ROESELER.
Shullsburg	A. G. GRANT.
Sparta	F. M. JACK.
Sterling (Ill.): Sterling Township *School.*	E. T. AUSTIN. *Principal.*
Stevens Point	E. J. VERT.
Stoughton	A. W. WEBER.
Superior: Blaine	B. B. JAMES.
Superior: Nelson Dewey	M. C. POTTER.
Tomah	C. H. MAXSON.
Tuscola (Ill.)	G. F. ARPS.
Two Rivers	C. W. VANDE WALKER.
Viroqua	S. E. PEARSON.
Watertown	C. F. VIEBAHN.
Waukesha	H. L. TERRY.
Waupaca	A. N. YOUNG.
Waupun	G. F. LOOMIS.
Wausau	C. C. PARLIN.
Wauwatosa	F. M. MERICA.
Webster City (Ia.)	L. H. FORD.
West DePere	J. V. BRENNAN.
West Salem	O. H. MILLER.
Whitewater	W. W. MARTIN.
Winona (Minn.)	W. A. BARTLETT.

For Modern Classical, Civic Historical, and English Courses.

McGregor (Ia.)	JOSEPHINE HARRISON.

For Modern Classical and Civic Historical Courses.

Galena (Ill.)	J. W. CUPPLES.

For Civic Historical, General Science, English, Engineering, Four Years' Pharmacy, and Agricultural Courses.

Lodi	D. E. KISER.

For Civic Historical and English Courses.

Cherokee (Ia.)	A. V. STORM.
Kankakee (Ill.)	I. E. NEFF.
Mauston	W. E. UTENDORFER.
Morrison (Ill.)	ELLA N. ELLSWORTH.
Oregon (Ill.)	ADALAIDE M. STEELE.
Red Oak (Ia.)	J. E. PEARSON.

For General Science, English, Engineering, Four Years' Pharmacy and Agricultural Courses.

Appleton: Third Ward	W. F. WINSEY.
Arcadia	D. C. GILE.
Augusta	G. O. BANTING.
Bangor	E. A. KETCHAM.
School.	*Principal.*
Belvidere (Ill.): North	A. J. SNYDER.
Charles City (Ia.)	G. S. DICK.
Chilton	G. M. MORRISSEY.
Clintonville	E. E. CARR.
East Troy	J. WINDEN.
Elroy	G. E. BUNSA.
Evansville: Seminary	E. G. BURRITT.
Florence	W. T. DARLING.
Fox Lake	F. A. HARRISON.
Gladstone (Mich.)	J. H. MCDONALD.
Hartford	T. R. LLOYD-JONES.
Jefferson	H. L. VAN DUSEN.
Kewaunee (Ill.)	A. C. REARICK.
Kewaunee	M. MCMAHON.
Lake Mills	A. B. WEST.
Louisville (Ky.): Manual Training H. Sch.	H. G. BROWNELL.
Mason City (Ia.)	A. R. SALE.
Mayville	L. S. KEELEY.
Medford	F. W. THOMAS.
Mondovi	J. W. NESBIT.
Necedah	W. E. ELMER.
Negaunee (Mich.)	N. G. BEGLE.

Neillsville	L. W. Wood.
New Lisbon	Fred. Thomson.
New London	W. J. Hamilton.
Oconomowoc	W. Kittle.
Omro	E. E. Sheldon.
Prairie du Sac	A. L. Row.
Rice Lake	E. C. McClelland.
Sandwich (Ill.)	W. W. Woodbury.
Sauk City	J. W. Mutch.
Seymour	F. W. Axley.
Sharon	W. B. Collins.
Shawano	J. Leidenberg.
Spring Green	G. F. Snyder.
Sturgeon Bay	C. G. Stangel.
Washburn	D. E. Cameron.
Waterloo	K. L. Hatch.
West Bend	C. H. Dietz.

For the English Course.

School	*Principal.*
Algoma	B. O. Dodge.
Barron	O. E. Rice.
Black Earth	J. Dixon.
Chippewa Falls: Notre Dame School	Sister M. F. Xavier.
Colby	R. W. L. Boehm.
Deerfield	O. S. Rice.
Durand	R. B. Pease.
Fairchild	E. M. Beeman.
Fennimore	E. L. Roethe.
Galesville	W. H. Fleming.
Glenwood	A. L. Thomsen.
Horicon	P. J. Zimmers.
Juneau	D. E. McLane.
Marshall	J. B. Baldwin.
Onalaska	J. H. Jordan.
Oregon	Franklin Gould.
Osceola	P. Vander Eike.
Phillips	E. C. Gotham.
Port Washington	W. A. Vivian.
Sheboygan Falls	A. C. Kingsford.
Sun Prairie	T. T. Blakely.
Tomahawk	W. H. Jamieson.

THE UNDERGRADUATE DEPARTMENTS.

REQUIREMENTS FOR GRADUATION.

General.

The unit-hour is the standard for computing the amount of work required for graduation. This is equal to one hour of recitation or lecture per week for one semester. Two hours of laboratory work or two hours regularly prescribed military drill or physical exercise in the gymnasium are credited as one unit-hour. Students are expected to take 15 hours per week in recitations, lectures, and laboratory work, making 30 unit-hours per year, and 120 for the course. In addition two hours per week (one unit-hour per semester) of gymnastics are required during the first two years, making a total of four unit-hours. The men are required to drill two hours per week during the first two years, giving a credit of four unit-hours. The total requirements for class-room work, military drill, and the gymnasium are, therefore, 128 unit-hours for the men and 124 for the women.

Students excused from drill or gymnastics are required either to make up the work before graduation, or if the excuse is based on permanent incapacity, to make good the requirement by work in other departments.

No student will be permitted to receive a credit toward graduation of more than eighteen unit-hours in one semester in regular studies except by permission of the Faculty, obtained in advance.

Graduation in Less Than Four Years—Summer Session.

The attention of students is called to the announcement of the Summer Session of the University, as given on subsequent pages of the catalogue. Work in the summer session will be credited in the same way as work in the regular session of the University, and by attendance at one session a total amount of credit may be acquired not exceeding six unit-hours.

Students who desire to graduate in three years in one of the regular four-year courses may do so by taking 18 hours of recitations per week and by attending three summer sessions. Permission to take work to this amount will be given only to students whose standing in their studies is wholly satisfactory. No credit will be given for repetition in the summer session of studies taken in the regular session of the University, or for repeating in the University work done in the summer. Students will therefore need to select carefully their work for the summer with reference to the required and elective studies of the course in which they intend to graduate. The summer session offers exceptional opportunities for the preparation of a senior thesis. Any student who expects to shorten his course by means of the summer session should consult his class officer in selecting his studies.

Adjustment of Undergraduate and Law Courses.

The courses of the College of Letters and Science and those of the College of Law have been so adjusted to each other that it is now possible for a student to graduate from both colleges of the University in six years. Students in the College of Letters and Science will be permitted to elect studies in the College of Law during the last two years of their course; the amount to be thus elected is not to exceed a total of six hours per week for one year. This privilege will not be extended to Normal graduates attempting to graduate in two years, nor to undergraduates of other colleges who enter this University with the rank of seniors. Students who have completed this amount of work in the law school will be admitted to the middle class of the College of Law on graduation from the College of Letters and Science, thus enabling them to complete the course for the degree of *Bachelor of Law* in two additional years. Members of the College of Law will also be permitted to elect studies in the College of Letters and Science which are related to the studies of their professional course, and may receive credit for this work in their law course, to an amount not exceeding four hours per week for one year.

English for Graduation.

Course 1 in English, as described on page 132, is required of all freshmen. Eearly in the first semester the freshmen will be examined in English composition. This examination will be a practical one. The student will be required to write an essay, or more than

cne, on a familiar theme, planning his work by paragraphs and constructing both paragraphs and sentences in acordance with the simpler principles of composition. The stress will be laid on neatness of manuscript and the avoidance of errors in spelling, punctuation, and grammar. These are essentials. The examination is to ascertain the student's ability to put material with which he is familiar into clear, correct English, rather than his ability to recite rhetoric or grammatical rules. Students found deficient in English composition will be required to make up their deficiency outside the University, as they must do in the case of deficiency in other subjects; if the deficiency is not made up within one year from the time of entrance they will be dropped from the University.

On the completion of course 1, a provisional pass mark is given; if at any time, later in his course, a student is reported as deficient or careless in English composition he will be required to take additional work in that subject.

Senior Thesis.

All candidates for the baccalaureate degree are required to present a graduating thesis, the subject of which must be approved by the class officer and the professor at the head of the department under which the candidate is doing the work represented by the thesis. This approval, in writing, must be secured by the student and deposited with the Registrar not later than the middle of October of his senior year. The thesis must represent some phase of the student's work during the later years of his course, and must have the character of a scholarly dissertation on the subject. The thesis must be typewritten on paper of good quality, 8x10 inches in size, and must be bound according to specifications furnished by the Librarian of the University.

Before the thesis is accepted, it must be approved by the instructor under whom the work has been done, and by the head of the department. When accepted, the thesis becomes the property of the University, and is deposited in the University library. Theses in the College of Letters and Science must be completed and deposited in the library by June 1st.

Undergraduate Courses.

The University offers, in the College of Letters and Science, eight courses of study leading to the bachelor's degree: The *ancient classi-*

cal course, leading to the degree of *Bachelor of Arts;* the *modern classical,* the *English,* and the *civic historical* courses, leading to the degree of *Bachelor of Letters;* the *general science* and *pre-medical* courses, leading to the degree of *Bachelor of Science;* the *course for Normal graduates,* leading to the degree of *Bachelor of Philosophy in Pedagogy;* the *commercial course,* leading to a baccalaureate degree.

In the *ancient classical* and the *modern classical* courses, languages, ancient and modern, are the central studies. In the *general science* and *pre-medical* courses, science occupies the leading place; in the *English* course, the English language and literature, and in the *civic historical* course, history, economics, and political science are the main lines. The *commercial* course is mainly composed of the technical studies relating to commerce.

The *pre-medical* course is intended to give a broad and solid foundation for the professional medical course, together with collegiate culture. Students desiring a similar course of scientific study introductory to the practice of pharmacy are referred to the account of the *four years' course in pharmacy* on a subsequent page.

The attention of students is directed to the opportunity offered in each course for election during the sophomore year. Through this privilege students can elect courses which are antecedent to the major study of the junior and senior years. Since it is necessary for students to elect their major study at the opening of the junior year, it will be wise for sophomores to consult with their class officers regarding this study.

Students who desire to specialize in a department which regularly offers no sophomore study in the course that they have entered may avail themselves of this means of securing the special instruction which they desire. This arrangement may be employed, for example, by students in the *general science* course, who desire to study the history, English, or languages offered in the sophomore year of other courses and to continue the studies of the selected department during the junior and senior years. Similar combinations can be made by students in other courses.

Group Students.

Students who desire to extend the prosecution of a major study beyond the amount which would naturally come in the courses as described, may be accepted as group students in any department at the opening of the sophomore year. In this case they may substitute studies assigned by the head of the department to the amount

of five hours in the place of studies required during the sophomore year. In this manner, provision may be made for special study in those departments whose work does not ordinarily begin in the sophomore year, such as philosophy, pedagogy, geology, astronomy, and bacteriology, and also for extending the courses in other departments. Students may also enter the group system at the opening of the junior year.

Students who avail themselves of this privilege must complete before graduation at least ten unit-hours of science as a continuous course in one subject and twenty-four unit-hours of language study in two languages besides English. The degree given will be that of the student's course with the name of the department in which the major study lies, but a student of the ancient classical course will not receive the degree of *Bachelor of Arts* unless he completes the Latin and Greek of the sophomore year.

Requirements for the Junior and Senior Years.

In all courses except that of the School of Commerce the requirements for the two upper years are the same, viz.:

Junior and Senior Years: The student must elect a major study from one department to the amount of five hours per week for two years. This amount, however, may include the senior thesis, for which a credit of two hours per week is given during the senior year. All required studies which have been postponed from the sophomore year must be completed, and courses must be elected sufficient to complete 120 unit-hours of class and laboratory work, besides the required drill and gymnastics.

The major study may be elected by a student from any course or from any department which he is prepared to enter—in a language, or science, in philosophy, or history, etc. If the major is selected from the departments of ancient languages a smaller amount is permitted in consideration of the large amount of time devoted to these subjects in the freshman and sophomore years. Besides the thesis, the total amount in Greek or Latin, or in both languages together, need be only five hours for one year.

REQUIREMENTS FOR THE DEGREE OF BACHELOR OF ARTS.

Ancient Classical Course.

Freshman Year: Greek *5; Latin 4; mathematics 3; English 3; military drill 2; gymnastics 2; 34 unit-hours for the year, of which 30 are in the class room.

Sophomore Year: Greek 3; Latin 3; modern language 4; science 5; history 2 or 3; elective 2-5; military drill 2; gymnastics 2: 34 unit-hours required for the year, of which 30 are in class room and laboratory.

During the sophomore year the student must take military drill and gymnastics and must elect two of the three languages offered. From the remainder of the list he must choose enough to make a total of 15 hours per week in regular class exercises, completing in the junior and senior years studies postponed from sophomore year.

Junior and Senior Years: See page 85.

REQUIREMENTS FOR THE DEGREE OF BACHELOR OF LETTERS.

1. Modern Classical Course.

Freshman Year: German 5; Latin 4; mathematics 3; English 3; military drill 2; gymnastics 2: 34 unit-hours for the year, of which 30 are in class exercises.

Sophomore Year: German 3; Latin 3; French 4; science 5; history 2 or 3; elective 2-5; military drill 2; gymnastics 2: 34 unit-hours for the year, of which 30 are in class room and laboratory.

During the sophomore year a student must take military drill and gymnastics and must take two of the three languages offered. From the remainder of the list he must choose enough to make a total of 15 hours per week in regular exercises, completing in the junior and senior years studies postponed from sophomore year.

Junior and Senior Years: See page 85.

2. Civic Historical Course.

Freshman Year: Latin or German 4; mathematics 3; history 5; English 3; military drill 2; gymnastics 2: 34 unit-hours for the year, of which 30 are in class exercises.

Sophomore Year: German 4 (if not taken in freshman year); French 4; history 3; economics and political science 3; science 5; elective 3-5; military drill 2; gymnastics 2: 34 unit-hours, of which 30 are in class room and laboratory.

During the sophomore year the student must take military drill and gymnastics, and from the remainder he must elect enough to make a total of 15 hours per week in regular class exercises, com-

*The figures denote the number of recitations per week.

pleting in the junior and senior years studies postponed from the sophomore year.

Junior and Senior Years: See page 85.

3. English Course.

Freshman Year: German 4; mathematics 3; history 5; English 3; military drill 2; gymnastics 2: 34 unit-hours for the year, of which 30 are in class exercises.

Sophomore Year: Required study, German 4; foreign language besides German 4; science 5; Anglo-Saxon 3; English literature 5; elective 3-5; military drill 2; gymnastics 2.

The student must take military drill and gymnastics and elect 11 hours from the work enumerated above, completing in the junior and senior years studies postponed from the sophomore year.

Junior and Senior Years: See page 85.

REQUIREMENTS FOR THE DEGREE OF BACHELOR OF SCIENCE.

1. General Science Course.

Freshman Year: Biology 5; German 4; mathematics 3; English 3; military drill 2; gymnastics 2: 34 unit-hours for the year, 30 of which are in class exercises.

Sophomore Year: German 3; French 4; physics 5; chemistry 5; elective 3-5; military drill 2; gymnastics 2: 34 unit-hours for the year, of which 30 are in class room and laboratory.

During the sophomore year the student must take military drill and gymnastics and elect 15 hours per week in regular class exercises, completing in junior and senior years studies postponed from sophomore year.

Junior and Senior Years: See page 85.

2. Pre-Medical Course.

The required studies of the four years' pre-medical course, leading to the degree of *Bachelor of Science*, are the same as those of the general science course. The students in the pre-medical course are required to turn their scientific work and their elections in the direction of those sciences which are preliminary to the study of medicine.

3. Pre-Engineering Course.

The required studies of the pre-engineering course, leading to the degree of *Bachelor of Science*, are the same as those of the general science course. Students taking this course who expect to complete their work in engineering in two subsequent years, are required to include among their electives, in the junior and senior years, those portions of the engineering course which they propose to take, and which they have not had, as are given in the freshman and sophomore years in the College of Engineering in that particular course.

4. Engineering and Agricultural Courses and Four Years' Pharmacy Course.

For the details of these courses, see under headings College of Engineering, College of Agriculture, and School of Pharmacy, on later pages.

REQUIREMENTS FOR A DEGREE IN THE SCHOOL OF COMMERCE.

Students who have completed the regular four years' course of the School of Commerce described on page 188, and graduates who have completed the technical courses peculiar to this school, will receive some one of the baccalaureate degrees now conferred by the University. The determination of this degree will be made before the graduation of the first regular class. The graduates of the present year will be given the degree of the course from which they were transferred.

REQUIREMENTS FOR THE DEGREE OF BACHELOR OF PHILOSOPHY IN PEDAGOGY.

Course for Normal Graduates.

Graduates of the advanced courses of the Normal schools of the state are admitted to advanced standing in the various courses of the University on conditions which may be found on page 72 of this catalogue. The following special course for Normal graduates has been arranged, leading in two years to the degree of *Bachelor of Philosophy in Pedagogy*. The course contains a minimum required amount of advanced studies in philosophy and pedagogy, with opportunity for further elections in those subjects. It requires also

a continuous study of foreign language during the two years of the course. In other directions the student may elect his studies. It is expected that the Normal graduate will give especial attention to fitting himself for teaching in one or two of the main lines of instruction, and the requirements and electives have been so arranged as to permit him to attain this end. He may devote himself especially to science, to literature, to history, or to any practical combination of these studies. He will be required, however, to make one of these lines of study his major work, and will not be permitted to elect a large number of short, scattered courses of instruction, since it is the especial design of this course to enlarge and complete his knowledge in certain definite directions.

The attention of the student is called to the necessity of directing his work from the first to the preparation of a satisfactory graduation thesis. In most cases the thesis will probably be written on some topic suggested by pedagogy or philosophy. However, the student may arrange for his thesis in any other department, but in such case it will be necessary for him to plan his course from the beginning, so as to satisfy the requirements for a thesis.

Junior Year: Latin, French, or German 4; philosophy 3; advanced pedagogy 3; language, history, English, advanced mathematics, or science 5; electives 3 to 5: 18 hours per week required.

Senior Year: Continuation of Latin, French, or German 4; philosophy and advanced pedagogy 5; electives from language, science, history, economics, mathematics, or English 7; thesis 2: 18 hours per week required.

DEPARTMENTS OF INSTRUCTION.

Some of the courses of instruction described on the following pages are elementary courses for undergraduates, others are advanced courses for undergraduates and graduates, while still others in each department are designed especially for graduates.

PHILOSOPHY.

PROFESSOR STEARNS, PROFESSOR JASTROW, ASSISTANT PROFESSOR SHARP, DR. BODE, AND MR. RUGER.

Students who contemplate devoting special attention to philosophy may begin the subject in the sophomore or in the junior year. The courses best adapted to serve as introductory are: 1, 3, 11, 12, 21, 31, 32, and 41. Students may begin the work with any one of these.

Special seminaries will be formed to meet the need of graduate students and of undergraduates who are specializing in philosophy.

1. General Psychology. Lectures, based on James' *Outlines of Psychology. First semester; three times a week. Tu., Th., at* 8. On *Fri.* the class will be divided for recitation work; *hours to be assigned. Repeated in the second semester.* Assistant Professor SHARP and Dr. BODE.
2. Advanced Analytic Psychology. *Second semester; Tu., Th., at* 9. Assistant Professor SHARP.
3. Introduction to Psychology. James' *Outlines of Psychology,* lectures and readings. *First semester; Tu., Th., at* 9, *and at one other hour to be arranged.* Professor JASTROW.
4. Experimental Psychology. (a) Lectures and demonstrations in experimental psychology. *Second semester; M., W., F., at* 9. (b) Laboratory practice course, parallel with the lectures. The hours for laboratory work will be arranged on consultation; (a) and (b) together count as a full study.* *Second semester; four hours a week.* Professor JASTROW.

*Omitted in 1904 owing to the absence of Professor Jastrow.

5. Research in Psychology. *Throughout the year; hours to be arranged on consultation.* Professor JASTROW.
6. Comparative Psychology. Lectures and assigned readings on animal psychology and mental development in man. *First semester; Tu., Th., at* 10. (Omitted in 1903-1904.) Professor JASTROW.
7. Abnormal Psychology. Lectures and assigned readings covering the main forms of unusual and abnormal mental phenomena.* *Second semester; Tu., Th., at* 9. Professor JASTROW.
8. Anthropology. Lectures and readings. Tylor's *Anthropology. First semester; Tu., Th., at* 10. Professor JASTROW.
11. Logic, Deductive and Inductive. *First semester; M., W., F., at* 11. Dr. BODE.
12. Applied Logic. Course 11 is not required as a preliminary. *Second semester; M., W., F., at* 11. Dr. BODE.
21. History of Greek Philosophy. *First semester; M., W., F., at* 8. Professor STEARNS.
22. History of Modern Philosophy. *Second semester; M., W., F., at* 10. Dr. BODE.
23. Introduction to Modern Philosophy. *Second semester; M., W., F., at* 8. Professor STEARNS.
24. The Philosophy of Modern Science. Discussion of some of the problems in the philosophy of nature. *First semester; Tu., Th., at* 11. Dr. BODE.
25. The Theory of Evolution and some of its recent modifications. *Second semester; Tu., Th., at* 11. Dr. BODE.
26. The Theory of Cognition. A study of the nature, extent, and validity of human knowledge. Locke, *Essay on the Human Understanding;* Berkeley, *Principles of Human Knowledge;* Hume, *Treatise of Human Nature,* Book 1. *First semester; three times a week.* Dr. BODE.
27. The Theory of Cognition. Kant, *Critique of Pure Reason. Second semester; three times a week.* Dr. BODE.
28. Lotze's Metaphysics. *First semester; twice a week, hours to be determined.* Assistant Professor SHARP.
29. Contemporary Theories of Metaphysics. *Second semester; twice a week, hours to be determined.* Assistant Professor SHARP.
30. Metaphysical Seminary. *Throughout the year; alternate weeks; W.,* 4 *to* 6.

*Omitted in 1904 owing to the absence of Professor Jastrow.

31. Elementary Ethics. Lectures and readings. *Second semester; Tu., and Th., at* 8; *F., at an hour to be determined.* Assistant Professor SHARP.
32 Problems in Applied Ethics. Moral rights in their relation to legal rights. Course 31 is not required as a preliminary. *First semester; Tu., Th., at* 12. Assistant Professor SHARP.
33. Advanced Systematic Ethics. Open only to students who have taken course 31. *First semester; Tu., Th., at* 9. Assistant Professor SHARP.
34. Ethical Seminary. *Throughout the year; alternate weeks; W.,* 4 *to* 6.
36. Aesthetics. (a) Philosophy of Art and Art Criticism. *First semester, Tu., Th., at* 8. (b) History of Art. *Second semester; Tu., Th., at* 8. Professor STEARNS.

PEDAGOGY.

PROFESSOR STEARNS, PROFESSOR O'SHEA, AND ASSISTANT PROFESSOR TRESSLER.

I. History and Philosophy of Education.

1. History of Educational Theories and Institutions, Greek, Roman, and Modern. Lectures, readings and essays. *First semester; M., W., F., at* 9. Professor STEARNS.
2. Modern Educational Systems. A comparative study of education in England, France, and Germany, for graduate students. *First semester; twice a week, at* 9. Professor STEARNS.
3. The Herbartian Pedagogy. Herbart's *Science of Education;* Rein's *Pedagogics;* Lang's *Apperception. Second semester; twice a week at* 9. Alternates with course 6. (Omitted in 1902-1903.) Professor STEARNS.
4. School of Supervision. The making and administration of courses of study; examination promotions; inspections, etc. *Second semester; Tu., Th., at* 8. Assistant Professor TRESSLER.
5. The Philosophy of Education. Lectures, readings, and discussions on the nature, forms and elements of education. *Second semester; M., W., at* 9. Professor STEARNS.
6. History of the High School Branches. Readings and discussions. *Second semester; Tu., Th., at* 9. Alternates with course 3. Professor STEARNS.

7. Seminary in Pedagogy, for the discussion of current educational problems. Open to those who have done one year's work in pedagogy. *Once a week throughout the year.* Professors STEARNS and O'SHEA.

15. Modern Educational Movements. *First semester; M., W., at* 12. Professor O'SHEA.

16. Educational Classics. Readings, with critical discussion, from Plato, Aristotle, Quintilian, Rousseau, Locke, Mill, Spencer, George Eliot. *Second semester; M., W., at* 12. Professor O'SHEA.

II. Science and Art of Education.

11. Mental Development. The most important of the newer problems relating to the development of mind in the individual, with educational interpretations. *First semester; M., W., F., at* 10. *Repeated in the second semester; M., W., F., at* 11. Professor O'SHEA.

13. Principles of Teaching and Management, with special reference to the High School. *First semester; M., W., F., at* 11. *Repeated in the second semester; M., W., F., at* 10. Professor O'SHEA.

14a. Genetic Psychology. A study of the genesis of intellectual faculty in the race and in the individual. *First semester; hours to be arranged.* Professor O'SHEA.

14b. Genetic Psychology. A study of the genesis of feeling in the race and in the individual, with special reference to the ethical and social emotions. *Second semester; hours to be arranged.* Professor O'SHEA.

17. The Play Instinct. A detailed study of the psychology and modes of manifestation of the play impulse in animals and in human life, with educational interpretations. *Second semester; F., at* 12. Professor O'SHEA.

20. Seminary for the investigation and discussion of educational questions of current interest. Open to those only who have completed preliminary courses in education. *First semester; one hour a week.* Professor O'SHEA.

21. Seminary work similar to course 20. *Second semester.* Professor O'SHEA.

31. Moral Education. Lectures on the conditions of moral progress and on methods of moral education. *Second semester; Th., at* 10. Assistant Professor SHARP.

Students desiring the University Teachers' Certificate must conform to the following requirements: Philosophy 1 or 3, and pedagogy 1 or 13, must be taken. The remaining four-fifths must be made up by electives from the following: Philosophy 6, 11; pedagogy 4, 5, 11, 15, 16, 31; and the teachers' course in those subjects that the student is preparing to teach. These electives are subject to the following conditions: (a) The maximum number of credits allowed for the teachers' courses is two-fifths; the maximum in philosophy is five-fifths, which includes the three-fifths required above.

ECONOMICS, PUBLIC FINANCE, AND STATISTICS.

PROFESSOR ELY, PROFESSOR SCOTT, PROFESSOR MEYER, ASSISTANT PROFESSOR ADAMS, AND MR. LORENZ.

1. The Elements of Economic Science. Required of sophomores in the civic-historical course and in the School of Commerce, and of all students beginning the subject of economics. *Repeated each semseter; M., W., F., at* 8 *and* 9. Mr. LORENZ.
2. History of Economic Thought. Professor ELY.
4. Modern Socialism. Text-book work, lectures and class reports. *First semester; Tu., Th., at* 9. Assistant Professor ADAMS.
5. Economic Problems. *Second semester; M., W., F., at* 9. Assistant Professor ADAMS.

6a. Agricultural Economics. This course is designed primarily for the students of the short course in the College of Agriculture, though any student may be admitted. Lectures, followed by class discussion. *M., W., at* 10, December and January. Dr. TAYLOR.

6b. General Course in Agricultural Economics. This course offers also an historical and comparative study of agriculture. *First semester; three times a week.* Dr. TAYLOR.

7. The Elements of Money and Banking. *First semester; M., W., F., at* 8. Professor SCOTT.
11. Insurance. *First semester; Tu. and Th., at* 11. Professor MEYER.
12. The Economic Functions of the State. This course has special reference to pharmacy. *One lecture a week.* Professor MEYER.
13. Labor Legislation. *First semester; M., W., F., at* 10. Assistant Professor ADAMS.
15. Economic Theory. *Second semester; M., F., at* 3, and *Th., at* 4. (Omitted in 1903-1904.) Assistant Professor ADAMS.
16. The Classical Economists. *First semester; Tu., Th., at* 12. (Omitted in 1903-1904.) Professor SCOTT.

17. Economic Thought Since John Stuart Mill. *Second semester; Tu., Th., at* 12. (Omitted in 1903-1904.) Professor SCOTT.
18. The Distribution of Wealth. Part I. *First semester; Tu., W., from* 3 *to* 5, *and Th., at* 3. Open to graduate students and undergraduates who have had suitable preparation. (Omitted in 1903-1904.) Professor ELY.
19. Distribution of Wealth. Part II. *First semester; Tu., W., from* 3 *to* 5, *and Th., at* 3. May be taken by those who have not had Part I, Course 18. Professor ELY.
21. Theories of Value. *First semester; Tu., Th., at* 12. Professor SCOTT.
22. Theories of Production and Consumption. *Second semester; Tu., Th., at* 12. Professor SCOTT.
23. Theories of Rent, Wages and Profits. *Throughout the year; Tu., Th., at* 12. (Omitted in 1903-1904.) Professor SCOTT.
25. Elements of Public Finance. An introductory course. *First semester; M., W., F., at* 9. Assistant Professor ADAMS.
26. Public Finance. Open to graduates and advanced students. *Second semester; Tu., W., from* 3 *to* 5, *and Th., at* 3. Professor ELY.
27. American Public Finance. Part I. A critical and historical discussion of the finances of the federal government. *First half of second semester; Tu., W., from* 3 *to* 5, *and Th., at* 3. (Omitted in 1903-1904.) Professor ELY.
28. American Public Finance. Part II. The finances of the American commonwealths and local political units. Open to graduates and advanced students. *Second half of second semester; Tu., W., from* 3 *to* 5, *and Th., at* 3. (Omitted in 1903-1904.) Professor ELY.
31. Economic Statistics. *Second semester; M., W., F., at* 11. Assistant Professor ADAMS.
32. Government Statistics. *Second semester; Tu., Th., at* 11. (Omitted in 1903-1904.) Assistant Professor ADAMS.
33. Social Statistics. *First semester; M., W., F., at* 11. Assistant Professor ADAMS.
34. Laboratory Work in Statistics. The statistical method will be applied to the treatment of selected economic and social problems. Special attention will be given to the use of the graphic method. This course is essential for students taking thesis work in statistics. *Two-fifths credit.* Assistant Professor ADAMS and Mr. LORENZ.

Economic Seminaries.

37a. Senior Seminary. Seniors who write theses in economics meet for discussion of their topics and presentation of reports of progress. (Hours to be determined later.)

37b. Economic Seminary. This is designed primarily for advanced students who wish to carry on special investigations under the guidance which the department affords. A subordinate feature of the seminary work is a review of recent books and important articles published in the periodicals. *Tuesday evening throughout the year from* 7:30 *to* 9:30. Professor ELY, Professor MEYER, Assistant Professor ADAMS, Mr. LORENZ, and Mr. DOWD.

The Arrangement and Selection of Courses.

Students taking economics, public finance and statistics should consult with the Director and other members of the staff with reference to their choice of classes and lectures. The studies are arranged in the three groups indicated, and within each group there is a division into elementary and advanced classes. Some studies are under no circumstances allowed to count for an advanced degree, and others may be accepted under certain conditions, while still others are primarily graduate studies. The groupings are so varied that it is necessary to determine them in reference to individual cases.

Courses 18 and 19 are given in alternate years; course 26 is given in alternate years with courses 27 and 28; 16 and 17 together constitute a continuous course throughout one year; so also do 21 and 22, and 31 and 33. Courses 16 and 17, 21 and 22, and course 23, are given each once in three years.

The courses in sociology may be counted as economics in making up an undergraduate major in economics. The following courses under the head of Economic History, Geography, and Commerce: 2a, Commercial Policies; 15, Transportation and Communication; 15a, Foreign Railway Systems; 21, Corporation, Finance and Securities.

ECONOMIC HISTORY, GEOGRAPHY AND COMMERCE.

PROFESSORS SCOTT, MEYER, MONAGHAN, KREMERS, AND DR. TAYLOR.

1. The Economic History of England.

Required of freshmen in the School of Commerce. Two-fifths credit. *Lectures on Tu., Th., at* 8. In addition the class

meets in small divisions once a week for quiz purposes. Dr. TAYLOR.

2a. The History of Commerce. The development of the world's commerce from ancient times to the Napoleonic era. *Lectures and assigned readings. First semester; Tu., Th., at* 9. Professor MEYER.

2b. Commercial Policies. The work of this course will center in a study of commercial treaties and tariff history since the Napoleonic era. Lectures, assigned readings and topics. *Second semester; M., W., F., at* 10. Professor MEYER.

3. Currency History. A systematic presentation of the currency history of England, France, Germany and the United States. An elementary knowledge of money and banking is needed in preparation for this course. *Second semester; M., W., F., at* 8. Professor SCOTT.

10a. Commercial Geography. Introductory Course. A general survey of the physiography, resources, industries and commerce of the chief countries of the world. Adams' Commercial Geography, supplemented by lectures and topical reports. *Repeated each semester; M., Tu., W., Th., at* 12. Dr. TAYLOR.

10b. Agricultural Industries. *Second semester; Tu., Th., at* 10. Dr. TAYLOR.

10c. The Commercial Geography of Europe. A study of the natural resources and industries of the chief European countries. *First semester; Tu., Th., at* 9. Professor MONAGHAN.

11. Accounting and Auditing. *Second semester; W., F., at* 8. Professor MONAGHAN, assisted by special lecturers.

15. Transportation and Communication. *Throughout the year; Tu., Th., at* 10. May be elected by semesters. Professor MEYER.

15a. Foreign Railway Systems. Open to students who have had course 15 or its equivalent. *First semester; twice a week.*

18b. Materials of Commerce. Chemical. A study of the history and technique of chemical industries. Manufacturing establishments where chemical processes are in operation will be visited as far as possible. *One lecture per week with two laboratory periods.* Professor KREMERS.

21. Corporation, Finance and Securities. *Second semester; Tu., Th., at* 8. Professor MEYER.

22. Business Organization and Management. *First semester; Tu., Th., at* 10. Assistant Professor SPARLING.

23. Consular Service.
    a. Foreign Consular Service. *First semester; M., W., F., at* 9. Professor MONAGHAN.
    b. The Consular Service of the United States. *Second semester; M., W., F., at* 9. Professor MONAGHAN.
30. Seminaries. The seniors of the School of Commerce who are writing theses will be grouped according to the subjects they are investigating, and organized into seminaries under the direction of Professors SCOTT, SPARLING, MONAGHAN and MEYER. Other students may be admitted to these seminaries by special permission of the instructors in charge.

SOCIOLOGY.

PROFESSOR ELY, PROFESSOR MEYER, ASSISTANT PROFESSOR SHARP, MR. DOWD, AND SPECIAL LECTURERS.

1. The Elements of Sociology. *First semester; M., W., F., at* 10. Mr. DOWD.
2. Modern Sociological Thought. A critical discussion of the works of the principal sociological writers from Comte to the present time. *First semester; M., W., F., at* 8. Mr. DOWD.
3. The Psychological Sociololgist. This course deals with that group of sociologists who approach sociology from a psychological point of view. *First semester; Tu., Th., at* 8. (Omitted in 1903-1904.) Mr. DOWD.
4. Charities and Correction. The course will include lectures by specialists and excursions to state and local institutions. This course should precede courses 5 and 6. *First semester; M., W., F., at* 11. Mr. DOWD.
5. Public and Private Charity. A comparative study of poor relief in the United States, England and the principal continental countries. *Second semester; M., W., F., at* 11. (Omitted in 1904.) Mr. DOWD.
6. Charity Organization. A study of poverty in American cities with special reference to the work of charity organization societies. *Second semester; Tu., Th., at* 9. (Omitted in 1904.) Mr. DOWD.
7. Social Ethics. This course treats the philosophy of legal institutions with special emphasis on the ethical point of view. It is accepted as a study in the political science group. *First semester; Tu., Th., at* 12. Assistant Professor SHARP.

8. Seminary in Sociology. Designed particularly for graduate students and others of suitable preparation. Topics in theoretical and practical sociology will be selected with reference to the needs and interests of the students. *First semester; 2 hours.* Mr. DOWD.

9. Field Work. Students are encouraged to study charitable and correctional institutions in Madison and vicinity and opportunity is afforded for continuous work during the summer months. During the past years students from the University have engaged in field work, and several of these students have taken up work of this kind as a career. It is believed that this method of continuous study, followed by field work, yields the best results. It is the aim of this department to furnish secretaries of charity organization societies, and other trained workers.

POLITICAL SCIENCE.

PROFESSOR PARKINSON, PROFESSOR REINSCH, ASSISTANT PROFESSOR SPARLING, DR. IYENAGA, AND MR. BARNETT.

Introductory Courses.

1. Elements of Political Science. This course will be made as far as possible a teacher's course in civics. *First semester; M., W., F., at* 8. *Repeated in the second semester; M., W., F., at* 9. Assistant Professor SPARLING.
2. Elementary Law. The nature and sources of law, and the methods of its application. *First semester; M., W., F., at* 8. Professor REINSCH and Mr. BARNETT.
3. Elements of Administration. The theory of administration, and a survey of the administrative systems of the chief states of modern Europe, and of the United States. *First semester; Tu., Th., at* 8. An additional hour will be arranged for those who desire to take this as a three-fifths course. Assistant Professor SPARLING.
4. The Constitution of the United States. An outline course of lectures designed, primarily, for those who cannot give more time to this subject, but which may be taken with profit in connection with any of the longer courses in constitutional law. *Second semester; F., at* 10. Professor PARKINSON.

5a. Commercial Law. The law of real and personal property, contracts, sales, torts, and procedure. Required of juniors in the School of Commerce. *Second semester; M., W., F., at* 8. Professor REINSCH and Mr. BARNETT.

5b. The law of corporations, partnership, agency and bankruptcy. Required of seniors in the School of Commerce. *First semester; two hours per week.* Dean BRYANT, Professor SMITH, and Assistant Professor GILMORE.

5c. The law of negotiable paper, bailments, carriers, insurance and patents. Required of seniors in the School of Commerce. *Second semester; two hours per week.* Dean BRYANT and Assistant Professor GILMORE.

6. Administrative Problems.—A survey of the primary administrative activities of the chief states of Europe and the United States. *Second semester; Tu., Th., at* 8. An additional hour will be arranged for those who desire to take this as a three-fifths study. Assistant Professor SPARLING.

Advanced Courses.

8. Roman Law. a. History of the development of Roman Law from the Twelve Tables to the *Corpus Juris* of Justinian. b. Institutes of Roman Law. These divisions are given alternately. *First semester; M., W., at* 12. Professor REINSCH.

10. History of English and American Law. *Second semester; M., W., at* 12. Professor REINSCH.

11. Jurisprudence. Analysis of the main concepts of the science of law on the basis of the juristic classics. Open to students who have had an elementary course in law. *Second semester; Tu., Th., at* 12. (Omitted in 1904.) Professor REINSCH.

12. Constitutional Law. A short course of lectures on the English constitution, followed by a study of the constitution of the United States. *Throughout the year; M., W., F., at* 9. Professor PARKINSON.

13. Constitutional Law. Designed to follow, or at least to supplement, course 12, with emphasis upon the study of cases; may be taken independently by those of suitable preparation. Open only to graduates and other advanced students. *Throughout the year; Tu., Th., at* 9. Professor PARKINSON.

14. Seminary in Constitutional Law. A comparative study of the essential features of the leading constitutions of the world.

Open to graduates, and to seniors who have had courses 12 and 13 or their equivalent. *Second semester; M., W., at* 10. (Omitted in 1903-1904.) Professor PARKINSON.

15. Municipal Government in Europe and the United States. *Second semester; M., W., F., at* 8. Assistant Professor SPARLING.

16. State and Federal Administration. A study of the local and central administration systems of the United States. *Second semester; Tu., Th., at* 9. An additional hour will be arranged for those who desire to take this as a three-fifths course. Assistant Professor SPARLING.

17. Comparative Administrative Law. This course has in view the needs of the legal profession. *First semester; Tu., Th., at* 11. Assistant Professor SPARLING.

18. International Law. *First semester; M., W., F., at* 10. Professor PARKINSON.

19. Seminary in International Law. Emphasis will be placed upon diplomatic relations, treaties, the rights and obligations of neutrals, and the methods of settling international disputes without resort to war. Open to graduates, and also to others who have had course 18. *Second semester; M., W., at* 10. Professor PARKINSON.

20. Contemporary International Politics. *Second semester; M., W., F., at* 10. In connection with this course a series of public lectures on problems of international politics will be given. Professor REINSCH and Dr. IYENAGA.

21. Colonial Politics. A study of the principal systems of colonial government. *First semester; M., W., F., at* 10. Professor REINSCH.

22. Party Government. Special attention will be given to party organization and the methods of legislative bodies. *Second semester; Tu., Th., at* 10. Assistant Professor SPARLING.

23. Federal Services. A study of the organization and functions of the different branches of our public service. *First semester; Tu., Th., at* 9. (Omitted in 1903-1904.) Assistant Professor SPARLING.

24. History of Political Thought. The development of political philosophy from the Greeks to the present, and its connection with political history. *First semester; M., W., F., at* 11. Professor REINSCH.

25. Philosophy of the State. Open only to advanced students. *Second semester; M., W., F., at* 11. Professor REINSCH.
26. Seminary in Administration. The governor's administrative position will be studied from the sources, supplemented with readings from secondary authorities. Open to graduates. *Two hours a week throughout the year; hours and days to be arranged.* Assistant Professor SPARLING.
27. Seminary in Politics. For 1903-1904: Parliamentary institutions of the present time. Open only to graduate students. *Throughout the year; W.,* 7:30 *to* 9:30. Professor REINSCH.

SPECIAL TRAINING COURSES IN THE SCHOOL OF ECONOMICS AND POLITICAL SCIENCE.

In order to offer opportunity for careful and systematic training in practical pursuits, the studies offered by the school, together with a number of allied subjects, have been arranged so as to form four special courses in economics and political science, viz., a course in Statistics; a course in Practical Sociology; a course in Preparation for Public Service; and a course in Preparation for Journalism.

The course in Statistics will give special training in the use and collection of statistical material, with a view of fitting the student for practical statistical work in connecion with public administration or with the business of railway and insurance companies.

The course in Practical Sociology consists of studies in modern social and economic problems, social theory, and practical charity and reform. The class work of the student is to be supplemented by the direct study of social conditions, and reformatory and charitable institutions. The course is primarily intended as a preparation for pastoral work, and the activities connected with organized charity and other ameliorative agencies.

The course in Public Service covers the subjects of politics, administration, diplomacy and modern history. A thorough knowledge of the mechanism and workings of contemporary government is becoming increasingly important with the constantly expanding sphere of political activities. To the training in the general principles of politics and methods of government, there will be added in this course specific instruction in the work of the various governmental departments, and the students will be kept informed concerning the various openings for a career in the public service, as well as the requirements and examinations that form a condition for entering thereupon.

The course in Preparation for Journalism (given jointly with the School of History) does not aim to offer technical instruction in the methods of practical journalism, but to provide a fund of information on social, economic, political, and historical questions, which is indispensable in journalistic work of a high grade.

The special training courses of the school cover a period of three years, beginning with the junior year. At the end of the second year the bachelor's degree is conferred. At the end of the third year the master's degree. No thesis is required with the latter. Any students in the above courses will be under the special supervision and advice of that member of the instructional force under whom the major part of their work is done. The faculty of the school will keep in close touch with men of experience and representative position in the branches to which these courses relate, and will make use of their aid and suggestions to render the instruction most helpful to the students.

Upon the completion of the course of three years the graduate will receive a certificate, stating that he has taken a special course, and indicating to what group of studies he has devoted his attention. No rigid uniformity is required of the students in the matter of selection of their studies. They must, however, select at least ten-fifths a semester from the work recommended by the school (in the case of the course in preparation for Journalism, jointly with the Shool of History), and this work must be taken in the sequence indicated, unless exceptions are made for special cause. Some studies which are absolutely indispensable in a certain course are italicized, and others will be indicated by the special adviser of the student, according to the work for which the latter is preparing. Beyond this the students are left free to take electives in other departments.

Admission.—Students who have completed the sophomore year in any college or university of approved standing are admitted to the special courses of the school, but all such students will be subject to the same conditions as students entering other courses in the junior year. The graduates of any such college or university may arrange to complete any one of the courses in two years. It is presumed that students entering the school have studied ancient, mediæval and modern history, as well as the elements of economics and political science. In the absence of such preparation students will be expected to make up their deficiency during the junior year. The language requirements will be adapted to individual needs, but the minimum requirement will be that of some one of the existing

courses in the University, the students being allowed to make choice among the courses for this minimum of language work. Students, however, will be encouraged to do more than this minimum.

The Course in Statistics.

JUNIOR.

Economic Statistics, 3-II*; *Social Statistics*, 3-I; *Analytical Geometry and Calculus*, 3; Commercial Geography, 4; Agricultural Industries, 2-II; Economic Problems, 3-II; Money and Banking, 3-I; Elements of Administration, 2-I.

SENIOR.

Railway and Insurance Statistics, 2-I; *Government Statistics*, 2-II; *Theory of Probabilities*, 2-II; Expert Accounting, 2-II; Insurance, 2-I; Railways, 2-II; Social and Economic Legislation, 3; State and Federal Administration, 2-II; Markets and Securities, 2-II.

GRADUATE.

Distribution of Wealth, 5-I; Public Finance, 5-II; Economic Seminary; Seminary Administration, 2; *Laboratory Work in Statistics*, 2; Railway Economics, 2-I; Public Accounting, 2-II.

The Course in Practical Sociology.

JUNIOR.

Charities and Correction, 3-I; Field Work; *Elements of Sociology*, 3-I; History of Education, 3-I; Municipal Government, 3-II; Physiology, 3-I, 2-II; *Psychology*, 3-I; *Ethics*, 3-II; *Moral Education*, 1-II.

SENIOR.

Social Ethics, 2-I; *Social Statistics*, 3-I; Psychology and Sociology, 3-I; Modern Sociological Thought, 3-II; Field Work in Charities; *Charity Organization*, 2-II; Communicable Diseases, 1; Biology of Water Supplies, 5-I; American History, 2.

GRADUATE.

Seminary in Sociology, 2; Advanced Ethics, 3-I; Anthropology, 2-I; Abnormal Psychology, alternating with Comparative Psychology, 2-II; Distribution of Wealth, 5-I; History of Political Thought, 2-I; Labor Legislation, 3-I; Economic and Social History, 3; Laboratory Work in Statistics, 2.

*The first numeral following the name of the course indicates the number of hours per week, the Roman numeral the semester.

The Course in Preparation for Public Service.

JUNIOR.

Elements of Administration, 2-I; *State and Federal Administration*, 2-II; Constitutional Law, 3; American History, 2; Elements of Finance, 3-I; Colonial Politics, 2-I; Elementary Law, 3-I; Advanced English, 3; Social and Economic Statistics, 3.

SENIOR.

Federal Services, 2-I (a study of the organization of the various departments of the federal government with methods of work and conditions of entry); International Law, 3-II; Diplomacy, 3-II; Municipal Government, 3-II; Nineteenth Century History, 3; Administrative Law, 2-I; Contemporary Politics, 2; Political Thought, 3; English Constitutional History, 2; Social and Economic History, 3.

GRADUATE.

Seminary in Administration, 2; Administrative Services (relating to state and municipal services), 2-II; Public Finance, 5-II; Seminary in Political Philosophy, 2; American Constitution and Political History, 3; Seminary in Modern European History, 2; Seminary in Public Law, 2; Social Ethics, 2-I; Roman Law, 2-II; Municipal and Sanitary Engineering, 2-I.

In order to adapt the course to the special needs in individual cases, the students will be advised to devote a part of the senior and graduate year to more special preparation for some branch of the public service, and will be encouraged to take a group of electives with that end in view. Every student is, moreover, required to take as part of his senior and graduate work one of the following groups of obligatory studies, or one of other groups hereafter to be arranged, intended to form the basis of more special preparation.

(*a*) *Financial:* Public Finance, 5-II, *first half of semester;* American Federal Finance, 5-II, *second half of semester;* Public Accounting, 2-II; Money and Banking, 3.

(*b*) *Internal Governments:* Agricultural Industries, 2-II; Social and Economic Legislation, 3; Social and Economic Statistics, 3; American Social and Economic History, 3.

(*c*) *State and Municipal Governments:* Municipal Government, 3-II; Public Securities, 2; Municipal and Sanitary Engineering, 2-I; Public Accounting, 2-II; American State and Municipal Finance, 3-II.

(*d*) *Diplomacy:* Diplomacy, 3-II; International Law, 3-I; Contemporary Politics, 2; Nineteenth Century History, 2; Advanced

French and a thorough study of another European language (German, Spanish, Italian, Russian or Norse).

The Course in Preparation for Journalism.

(Given jointly with the School of History.)

JUNIOR.

Economic Problems, 3-II; *American History*, 2; Constitutional Law, 3; Modern Systems of Education, 2-I; *Agricultural Industries*, 2-II; Municipal Government, 3-II; Moral Progress and Moral Education, 1-II; Advanced English, 3; General Survey of English Literature (with special reference to the great prose writers of the eighteenth and ninteenth centuries), 3; American Literature, 2.

SENIOR.

English Constitutional History, 2; *Nineteenth Century History*, 2; Political Thought, 2-I; Contemporary Politics, 2; History of the West, alternating with Economic and Social History, 3; Colonial Politics, 2-I; Social Ethics, 2-II; *Press Laws*, 1; State and Federal Administration, 2-II; Interntaional Law, 3-I; Advanced English, 2; English Literature (Courses 32, 33, 36, 39, and 43).

GRADUATE.

Advanced English, 2; Seminary in American History, 2; *Distribution of Wealth*, 5-I; Public Finance, 5-II; Modern Sociological Thought, 2-II; Seminary in Political Philosophy, 2; Seminary in Economics; Diplomacy, 3-II; History of Institutions, 2.

Seminary work in some line will be required.

HISTORY.

PROFESSOR TURNER, PROFESSOR MUNRO, ASSISTANT PROFESSOR COFFIN, ASSISTANT PROFESSOR FISH, DR. TILTON, DR. SELLERY, AND DR. PHILLIPS.

Arrangement of Courses.

The courses in History are divided into three groups. Courses 1 to 5 are planned so as to afford an introductory survey of the general field of history. They cannot be counted toward advanced degrees, and graduates are required to have completed them, or a substantial equivalent, before entering on their graduate studies. Courses 6 to 16, and 18 to 21, are designed to continue the studies begun in the preliminary courses in the direction of greater specialization in

ancient history (course 14), mediaeval history (courses 6, 15, 16), modern European history (courses 8, 9, 10a, 10b, 20), English history (course 7) and American history (courses 11, 12, 18a, 18b, 19a, 19b). They are open to undergraduates who have taken the prerequisite courses, and are also suited to the needs of graduate students. The remaining courses—except course 17, which is a special course for those preparing to teach history in secondary schools—are open only to graduates; they are designed to afford training in original research in representative fields of history.

Students planning to specialize in history are advised to complete 2, 3, 4, and 5 by the close of the sophomore year. Courses 2 and 3 cannot be counted as part of the prescribed major.

INTRODUCTORY COURSES.

1. Ancient History. A brief outline of primitive and Oriental history and a more particular study of the history of Greece and Rome. Especially recommended to all who expect to teach history, or to take a history major. *Throughout the year; Tu., Th., F., at* 11. Elective by semesters. (Omitted in 1903-1904.) *First semester,* Professor MUNRO and Dr. TILTON; *second semester* (Roman History), Professor MUNRO.
2. English History. A general survey required of freshmen in the English and civic-historical courses. Elective to upper classmen, who will be given special sections for more advanced work. Recommended to those who expect to teach history. The class meets in divisions. *Throughout the year; Tu., and Th., at* 8, 9 *and* 10. Dr. TILTON, Dr. SELLERY, and Dr. PHILLIPS.
3. Mediaeval History. A general survey of the history of continental Europe from the barbarian invasions to the close of the fifteenth century. *Throughout the year; M., W., at* 11, *for lectures, and a third hour in sections.* Required of freshmen in the civic-historical and English courses; elective to more advanced students, who will be given a special section. Professor MUNRO, assisted by Dr. TILTON and Dr. SELLERY.
4. Modern European History. A general survey extending from the close of the fifteenth century to the present day. *Throughout the year; Tu., Th., at* 11, *and a third hour in sections.* Required of sophomores in the civic-historical course and in the School of Commerce; open to other students who have had

course 3. Assistant Professor COFFIN, assisted by Dr. SELLERY and Dr. PHILLIPS.

5. American History. A general survey, with emphasis on political history. This course or an equivalent must precede all other courses in American history. Courses 5a and 5b may be elected by separate semesters, but are not open to first year students. During the year 1902-1903 the course has been given as a two-fifths study with an optional third hour. In 1903-1904 it will be given as a three-fifths study.

a. To the close of the War of 1812. *First semester, M., W., F., at* 11. Professor TURNER and Assistant Professor FISH.

b. From the close of the War of 1812 to the present time. *Second semester; M., W., F., at* 11. Professor TURNER and Assistant Professor FISH.

c. A general course, required of freshmen in the School of Commerce. *Repeated each semester; M., Tu., W., Th., at* 12. Dr. PHILLIPS.

ADVANCED COURSES.

6. Mediaeval Civilization. Designed to supplement course 3 by a more special study of the social and intellectual life of the Middle Ages. *Second semester; Tu., Th., at* 11. Professor MUNRO.

7. Constitutional History of England. A study of the growth of English institutions. *Throughout the year; Tu., Th., at* 12. Open to juniors and seniors who have had course 2. *First semester*; Dr. TILTON; *second semester*, Assistant Professor COFFIN.

8. The French Revolutionary and Napoleonic Periods, 1789-1814. Open to those who have had course 4 or its equivalent. *First semester; M., W., F., at* 10. Assistant Professor COFFIN.

9. History of Europe in the Nineteenth Century, 1815-1900. Open to those who have had course 4 or its equivalent. *Second semester; M., W., F., at* 10. Assistant Professor COFFIN.

10a. Period of the Renaissance. An investigation of the chief political problems in the epoch of the foundation of the great European states, 1300-1500. Open to juniors and seniors who have had course 3, or an equivalent. *First semester; Tu., Th., at* 11. Dr. SELLERY.

10b. Age of Louis XIV. A study of the development of the absolute monarchy in continental Europe. Open to juniors and

seniors who have had course 3 or 4, or an equivalent. *Second semester; Tu., Th., at* 11. Dr. SELLERY.

11. History of the West. Particular attention is paid to the advance of settlement across the continent, and to the results of this movement. *Throughout the year; M., W., F., at* 12. Professor TURNER.

12. Economic and Social History of the United States. For 1902-1903, the topics of immigration, interstate migration, distribution of population, transportation and internal improvements are emphasized. *Throughout the year; M., W., F., at* 12. (Omitted in 1903-1904.) Professor TURNER.

14. Roman Imperial Institutions. *First semester, Tu., Th., at* 11. Open to graduate students and seniors of suitable preparation. Professor MUNRO.

15. Feudal Institutions. *Tu., Th., at* 11, *and F., at* 3. Open to graduate students and seniors of suitable preparation. (Omitted in 1903-1904.) Professor MUNRO.

16 Constitutional History of the Middle Ages. A comparative study of the governments in Germany, France and England, especially during the twelfth and thirteenth centuries. Open to graduate students and seniors of suitable preparation. (Omitted in 1903-1904.) *Throughout the year; Tu., Th., at* 11. Professor MUNRO.

17. Methods of History Teaching, with special reference to the work of secondary schools. For seniors of suitable preparation. *Second semester; F., at* 3. Professors TURNER and MUNRO.

18a. History of the American Colonies to 1783. *Throughout the year; M., W., at* 2. (Omitted in 1903-1904.) Assistant Professor FISH.

18b. History of New England. *Second semester; M., W., F., at* 2. Assistant Professor FISH.

19a. Diplomatic History of the United States. An historical survey of our foreign relations from the Revolution to the present time. *Throughout the year; Tu., Th., at* 10. (Omitted in 1903-1904.) Assistant Professor FISH.

19b. Development of Party Organization in the United States. Seminary method. Open to graduates, seniors, and by special permission to juniors of suitable preparation. *Second semester; two hours a week.* Assistant Professor FISH.

20. The Political Development of Modern Germany. This course will begin with the sixteenth century, and will come to the estab-

lishment of the present Imperial federation in 1871. Lectures and selected readings. Open to those who have had course 4. *First semester; Tu., Th., at* 10. Assistant Professor COFFIN.

Courses Open Only to Graduates.

30. Historical Bibliography. An account of the present state of the materials for historical research, and an examination of the bibliographical tools most essential to the especial study of history. *First semester; W., at* 10. Professor MUNRO.
31. Historical Criticism. An introductory survey of the principal problems of historical method, accompanied by practical exercises. *Second semester; W., at* 10. Given in alternate years. (Omitted in 1903-1904.) Professor MUNRO.
32. Palaeography and Diplomatics. (a) Elements of palaeography, with practical exercises in the reading of manuscript facsimiles; (b) elementary exercises in diplomatics. The first part of the course is identical with the first part of course 18 in Latin and is arranged for the benefit of advanced students of language as well as for students of history. *Second semester; Tu.,* 9 *to* 11. Given in alternate years. (Omitted in 1902-1903.) Professor MUNRO.
33. Seminary in Mediaeval History. In 1902-1903 the Crusades are studied by special topics, illustrating their causes, the relations with the Greek emperors, and the social and political institutions in the Latin Kingdom of Jerusalem. *Th.,* 4 *to* 6. Professor MUNRO.
34. Seminary in Modern European History. The work will center about the diplomatic revolution of 1756. *Throughout the year; S.,* 11 *to* 1. Assistant Professor COFFIN.
35. Seminary in American History. In 1902-1903 the work is on the diplomatic history of the Mississippi Valley and the constitutional history of the Louisiana Purchase. For 1903-1904 the seminary will study the history of Monroe's administration. *Throughout the year; three hours a week in two sessions.* Professor TURNER.
36. Historical Conference. A fortnightly meeting of the instructors and graduate students of the school for conference and consideration of papers. A considerable portion of the time of the conference is devoted to a co-operative study of the work of important historians, so planned as to give in successive

years a general view of modern historiography. *Throughout the year; alternate Fridays, 4 to 6.*

Special Lectures.

Besides the regular courses of class instruction described above, two series of lectures are given each year by scholars from without the University. In 1902-1903 the following are given: Transcontinental Exploration, with especial reference to Lewis and Clark. Four lectures by Reuben Gold Thwaites, Secretary of the State Historical Society of Wisconsin.

Intellectual Leaders of the Middle Ages. Seven lectures by Professor James Harvey Robinson, of Columbia University.

Summer Courses.

Elementary and advanced courses in History are offered each year in the Summer Session of the University. For a fuller description see the Summer Session circular.

GREEK.

PROFESSOR SMITH, PROFESSOR KERR, ASSISTANT PROFESSOR LAIRD, AND MISS MCCLERNAN.

Two years are allowed for the completion of the course in Elementary Greek—five hours the first year, three hours the second, the two years giving eight hours' credit toward the degree. But any of the beginners' class who can make more rapid progress may be promoted at any time, on the recommendation of the instructor, to the more advanced section, thus accomplishing the work as heretofore in a single year.

All who give two years to elementary Greek would naturally spend their last two years in completing the required freshman and sophomore Greek, but any whose record in elementary Greek had been very good might carry both freshman and sophomore Greek in one year, thus leaving themselves free during the senior year for an elective in Greek or in some other study.

Students of other courses than the ancient classical have the privilege of taking the first year of elementary Greek as an elective, which would count as five-fifths toward any degree.

Elementary Courses.

Elementary Greek. a. White's *Beginner's Greek Book,* Xenophon's *Anabasis* begun. *Full study throughout the year; M., Tu., W., Th., at* 12; *S., at* 11. Miss McClernan. b. Xenophon's *Anabasis* completed, Homer's *Odyssey* i-iv, Greek Composition. *Three times a week throughout the year; hours to be determined on consultation.* Professor Smith or Assistant Professor Laird.

Required Courses.

1. Lysias, Xenophon's *Hellenics,* Goodwin's *Grammar. First semester; M., W., Th., F., at* 8. Assistant Professor Laird.
   Homer's *Odyssey* V.—XII. *Second semester; M., W., Th., F., at* 8. Professor Kerr and Assistant Professor Laird.
   Greek Composition. *Throughout the year; Tu., at* 8. Assistant Professor Laird.
   Course 1 is required of ancient classical freshmen.
2. The *Philippics* of Demosthenes, Euripides (the *Bacchae*), Goodwin's *Moods and Tenses. First semester; M., W., F., at* 10. Professor Kerr.
   Plato's *Apology* and *Crito,* Thucydides VII., Jebb's *Primer of Greek Literature. Second semester; M., W., F., at* 10. Professor Smith.
   Course 2 is required of ancient classical sophomores.

Elective Courses.

2a. *Herodotus,* one book, Xenophon's *Memorabilia,* or selected dialogues of Lucian. *Throughout the year; M., F., at* 11. Elective for sophomores, but open also to freshmen of suitable preparation. Professor Smith or Assistant Professor Laird.

3. Greek Prose Composition. *Once a week throughout the year.* This course will be required of those who expect to get recommendations to teach. Professor Smith or Assistant Professor Laird.

5. Greek Lyric Poets, study of meters. *First semester; M., W., F., at* 9. Professor Smith.
   Thucydides; Demosthenes. *Second semester; M., W., F., at* 9. Open to juniors and seniors. Professor Smith.

6. Greek Dramatic Poets. Aeschylus (two plays), Sophocles (two plays), study of meters. *First semester; M., W., F., at* 9. (Omitted in 1903-1904.) Professor SMITH.

Aristophanes (two plays), Aristotle's Poetics, discussion of the Greek drama. Open to juniors and seniors. *Second semester; M., W., F., at* 9. Professor SMITH.

7. Greek Orators. Open to juniors and seniors. *Tu., Th., at* 9. Assistant Professor LAIRD.

8. Plato. The Republic. Books I, II, III, and X, with selections from other parts of the dialogue. This course is intended as an introduction to the study of Greek philosophy. Open to juniors and seniors. *Throughout the year; Tu., Th., at* 10. Professor KERR.

10. Advanced Greek Composition. Open to juniors, seniors, and graduates. *First semester; once a week.* Professor SMITH or Assistant Professor LAIRD.

11. Modern Greek Language and Literature. A study of the changes in form and structure which the language has undergone since the classical period. Elective for juniors and seniors. *Throughout the year; Tu., Th., at* 10. Professor KERR.

14. Lectures on the life of the ancient Greeks and Romans, illustrated by lantern slides. Designed especially for students of history and literature; knowledge of Greek and Latin not required. *Throughout the year; Tu., Th., at* 9. *First semester,* Greek Life. Assistant Professor SHOWERMAN.

15. Classical Archaeology. Lectures on the remains of ancient Greece and Rome, with especial reference to the history of classical art, illustrated by lantern slides. Designed primarily for students of the ancient classics and ancient history. *Throughout the year; Tu., Th., at* 9. *First semester,* Greek. (Omitted in 1903-1904.) Assistant Professor SHOWERMAN.

Graduate Courses.

The object of the graduate courses in Greek is to secure, on the part of advanced students, wide reading in Greek authors, acquaintance with the latest results of philological investigation through constant reading of critical journals, the forming of habits and learning of methods of research. In pursuance of the last named purpose especially, the Greek Seminary meets to hear and to discuss carefully prepared papers, the members leading in turn. It is to be under-

stood that the preparation for each lead will require the greater portion of a student's time for at least two weeks. The work will be occasionally varied and relieved by extempore exercises in reading and writing Greek. The work of the seminary will be supplemented by courses of lectures.

20. Thucydides. The whole of the author is read privately by the members of the class. *Throughout the year, S.*, 9-11. (Omitted in 1903-1904.) Professor SMITH.

21. Greek Drama. Sophocles. The whole author is read privately by the members of the class. As supplementary to this course the scenic antiquities will be studied, Haigh's *Attic Theater* being used as a basis. *Throughout the year, S.*, 9-11. (Omitted in 1903-1904.) Professor SMITH.

22. Lyric Poetry. Especial attention is given to Pindar, the whole being read privately. *Throughout the year, S.*, 9-11. (Omitted in 1903-1904.) Professor SMITH.

23. Greek Dialects. A study of dialect sounds and forms based on the inscriptions. Cauer's *Delectus Inscriptionum Graecarum* will in the main be followed. *Two hours a week for a portion of the year, as part of the regular seminary work.* (Omitted in 1903-1904.) Professor LAIRD.

24. Greek Literature. Lectures, with selections from Greek authors, read by the class.

a. Lyric Poetry. *First semester; twice a week.*

b. Drama and History. *Second semester; twice a week.* Professor SMITH.

25. Greek Orators. Antiphon, Andocides, Lysias and Isaeus. The whole of these authors will be read by the class. Courses 24-25, taken together, count as a full study. *Throughout the year; W.*, 4:30 *to* 6. Assistant Professor LAIRD.

26. Journal Club. Reports on and discussions of current philological literature. *One hour a week throughout the year.* Professor SMITH and Assistant Professor LAIRD.

Courses 19-24 are conducted mainly on the seminary plan. Courses 19-25 are open to graduates, and, by special permission, to others who have had the junior three-hour elective or its equivalent.

26. Comparative Greek Grammar. (See Comparative Philology 3.)

Comparative Philology.

1. Lectures on the principles of the life and growth of language. Open to juniors and seniors. A knowledge of Greek and Latin

is not required. *Second semester; F.*, 9. Assistant Professor LAIRD.

2. Latin Grammar. History of the sounds and forms. *Second semester; Tu., Th., at* 8. Assistant Professor LAIRD.
3. Greek Grammar. History of the sounds and forms. *Throughout the year; Tu., Th., at* 5. Assistant Professor LAIRD.
4. Elementary Sanskrit. Perry's *Sanskrit Primer.* Selections from Lanman's *Reader. Throughout the year; M., W.*, 10. Assistant Professor LAIRD.
5. Advanced Sanskrit. Selections from the *Rig-Veda.* Wackernagel's *Altindische Grammatik. Throughout the year; M., W.*, 11. Assistant Professor LAIRD.

(Courses 3 and 5 are intended primarily for graduates, but are open, by permission, to juniors and seniors.)

LATIN.

PROFESSOR SLAUGHTER, ASSISTANT PROFESSORS FISKE AND SHOWERMAN, MISS PITMAN, AND MR. SCHOLZ.

Introductory Courses.

a. Cicero and Vergil. Cicero's *Orations* (3), Vergil's *Aeneid* (six books), Latin Grammar and Composition. This course is offered for the benefit of students whose preparation in Latin has for any reason been deficient. *Throughout the year; M., Tu., W., Th., F., at* 8. Mr. SCHOLZ.

1. (a) Livy, Cicero, Terence. Livy (two books), Cicero *de Senectute,* Terence (two plays), Latin Composition. Required of freshmen of ancient classical and modern classical courses. *Throughout the year; M., Tu., Th., F., three divisions. M. C. at* 10, *A. C. at* 11. Assistant Professor SHOWERMAN and Miss PITMAN.

   (b) Livy, Cicero, Tacitus. A course in Roman history designed for students in the civic historical course. *Throughout the year; M., T., W., F., at* 8. Assistant Profesor FISKE.
2. Rapid reading of easy prose authors. Elective for freshmen. Two divisions. *Throughout the year; W., at* 10 *and* 11.
3. Horace. The Odes, Satires, and Epistles of Horace. A rapid survey of Roman literature. Required of sophomores of ancient classical and modern classical courses. *Throughout the year; M., W., F., at* 9. Professor SLAUGHTER and Assistant Professor FISKE.

4. Exercises in writing Latin. Elective to students who have had course 1. *Throughout the year; Th., at* 3. Assistant Professor FISKE.

5. Catullus, the Elegiac Poets and Martial. Elective for those who have had or are taking course 3. *Throughout the year; Tu., Th., at* 9. Miss PITMAN.

Advanced Courses.

6. Roman Satire from Ennius to Juvenal, with lectures on the origin and development of satire. *Throughout the year; Tu., and Th., at* 10. Assistant Professor FISKE.

7. (a) Tacitus and Pliny. (b) Teachers' Course in Caesar. *Throughout the year; Tu. and Th., at* 10. (Given in 1903-1904.) Assistant Professor FISKE.

8. Literature of the late Empire. A reading course in pagan and Christian authors, with lectures on the religion, literature and art of the period. The *Cupid and Psyche* of Apuleius, the *Octavius* of Minucius Felix and selections from other authors will be read. *Throughout the year; W., F., at* 8. Assistant Professor SHOWERMAN.

9. Roman Drama. Selected plays from Plautus, Terence and Seneca. *Throughout the year; W., F., at* 8.. (Given in 1903-1904.) Assistant Professor SHOWERMAN.

10. (a) Lucretius, (b) Vergil and the Roman Epic. *Throughout the year; M., W., F., at* 10. Professor SLAUGHTER.

11. Advanced Course in Latin Composition. Must be preceded by course 4. *Throughout the year; Tu., at* 3.

12. Lectures on the life of the ancient Greeks and Romans, illustrated by lantern slides. Designed especially for students of history and literature. A knowledge of Greek and Latin is not required. (See Greek, course 14.) *Throughout the year; Tu., Th., at* 9. *Second semester:* Roman Life. Assistant Professor SHOWERMAN.

13a. Roman Literary Criticism. Selections from Cicero, Horace and Quintilian will be read. The course will be continued in the second semester by reading selections from the fragments of early Latin prose and verse. *Throughout the year; W., F., at* 9.

13b. Roman Philosophy. Selections from the philosophical works of Cicero and Seneca will be read. *Throughout the year; W., F., at* 9.

14. Research work for seniors electing theses in Latin. No instructor will accept more than six students. The following subjects were offered for 1902-1903:
    (a) Roman Satire, in connection with course 6.
    (b) Literature of the late Empire, in connection with course 8.
    (c) Lucretius, in connection with course 10.

Graduate Courses.

15. Religion and Worship of the Greeks and Romans. Lectures and topics. *Throughout the year; M. and W., at* 9. Assistant Professor FISKE.
16. Classical Archaeology. Lectures on the remains of Ancient Greece and Rome, with special reference to the history of classical art, illustrated by lantern slides. Designed primarily for students of the ancient classics and ancient history. (See Greek, course 15.) *Throughout the year; Tu., Th., at* 9. (Omitted in 1903-1904.) Assistant Professor SHOWERMAN.
17. Roman Literature. Lectures and readings. The course covers a period of two years.
    (a) The literature of the Republic.
    (b) The literature of the Empire. *Throughout the year; Tu., and Th., at* 11.
18. Latin Epigraphy and Palaeography. Lectures. Reading of inscriptions and fac-similes of ancient manuscripts. *Weekly throughout the year.* (Omitted in 1903-1904.) Professor SLAUGHTER.
20. Latin Grammar. History of the sounds and forms. *Second semester; Tu., Th., at* 11. Assistant Professor LAIRD.
21. Latin Syntax. A brief course of lectures on Latin syntax, illustrative of the historical method. *First semester; Tu. and Th., at* 8. Professor SLAUGHTER.
22. Seminary. The seminary is intended for graduate students, but will be open to others of suitable preparation with the consent of the director. To accommodate those who are studying for the doctor's degree, the work is arranged to cover three years; (a) The Roman Drama. The critical work of the seminary will be based upon the *Miles Gloriosus* of Plautus; (b) Lucretius, Bk. III.; (c) Horace, critical and exegetical study of the Odes. *Throughout the year; Tu., and Th., at* 9. Professor SLAUGHTER.

HEBREW AND HELLENISTIC GREEK.

PROFESSOR WILLIAMS, DR. KELLY, MR. KNIGHT, AND MR. WOLFENSON.

The courses in Hebrew, Arabic, Assyrian and Hellenistic Greek are open as electives to students in any department of the University who are prepared to carry them on with profit. The purposes for which they are pursued are (a) as a means to liberal culture; (b) as furnishing necessary data to a study of phonetics, philosophy of language, and comparative philology; (c) as an important department of history, archaeology, and art; and (d) as preparatory to studies in ethics and theology.

Hebrew, Arabic and Assyrian.

1. The General Principles of the Hebrew Language. Reading of selections from Genesis. *Four times a week throughout the year.* Mr. WOLFENSON.
2. This course is the same as course 1, but begins in the second semester of each year as a two-fifths study, and continues as a two-fifths study during the first semester of the following year. Mr. WOLFENSON.
3. Historical Hebrew. The books of Samuel, with a review of the verb. *Twice a week; first semester.* Dr. KELLY.
4. Deuteronomy and a General Review of Etymology. *Twice a week; second semester.* Dr. KELLY.
5. Minor Prophets. Critical translation of the Hebrew text with close attention to vocabularies and syntax. *Twice a week throughout the year.* Dr. KELLY.
6. Job, or Books I and II of the Psalms (as students may elect), and a study of the form and characteristics of Hebrew poetry. *Twice a week throughout the year.* Dr. KELLY.

   Courses 5 and 6 will be given in alternate years.
7. Exercises in writing Hebrew. *Once a week throughout the year.* Dr. KELLY.
8. Advanced Hebrew Grammar, with selected passages for reading. *Twice a week throughout the year.* DR. KELLY.
9. Hebrew Seminary. In successive years Isaiah I.-XXXIX., XL.-LXVI., and the third and fourth books of the Psalms will form the center of the work. *Once a week (two hours) throughout the year.* Professor WILLIAMS and Dr. KELLY.
10. Arabic. *First semester.* Easy reading and principles of the language. *Second semester*: Reading of selections and some of the shorter suras of the Quran. *Twice a week.* DR. KELLY.

11. Advanced Arabic: The Quran. *Once a week throughout the year.* Dr. KELLY.

12a. Elementary Assyrian. A study of selected texts and of (a) the grammatical principles of the language, and (b) the use of the material for lexicographical purposes. *Twice a week throughout the year.* Dr. KELLY.

12b. Biblical Aramaic, ten weeks; Syriac, the remainder of the year. *Twice a week.* Alternates with 12a. Dr. KELLY.

Hellenistic Greek.

15. Selected chapters from the Gospels, and the general principles of Hellenistic Greek. For students who have not studied classical Greek. *Four times a week throughout the year.* Mr. KNIGHT.

16. This course is the same as course 15, but begins as a two-fifths study in the second semester of each year, and continues as a two-fifths study during the first semester of the following year. Professor WILLIAMS and Mr. KNIGHT.

17. Mathew and Mark. *Twice a week throughout the year.* Professor WILLIAMS.

18. Luke and Acts. Historical study with careful attention to syntax. *Twice a week throughout the year.* Professor WILLIAMS.

19. John. Critical study and textual criticism. *Twice a week throughout the year.* Professor WILLIAMS.

20. Hellenistic Greek Seminary. In successive years the Epistle of Paul to the Romans, the second gospel, and the fourth gospel will form the center of the work. *Once a week (two hours) throughout the year.*

21. Advanced Hellenistic Greek Grammar. *Twice a week throughout the year.* Professor WILLIAMS.

Hebrew History, Historical Geography.

22. History of the Hebrew People and a General Survey of Hebrew Literature. *Once a week throughout the year.* Professor WILLIAMS.

23. Historical Geography of Palestine; Hebrew Archaeology; Recent Discoveries. *Once a week throughout the year.* Dr. KELLY.

FRENCH.

PROFESSOR OWEN, ASSISTANT PROFESSOR GIESE, ASSISTANT PROFESSOR GAY, MR. PATZER, DR. BRAUER, AND MR. SEYMOUR.

Elementary.

1. General Elementary Course. Otto's *French Conversation Grammar; Roman d'un Jeune Homme Pauvre* and *La Petite Fadette* (the former read mainly and the latter altogether independently of the class-room); *Le Cid, Le Misanthrope, Athalie. Four times a week throughout the year.*
   Section 1. *Tu., W., Th., F., at* 8. MR. SEYMOUR.
   Section 2. *M., Tu., W., Th, at* 10. MR. SEYMOUR.
   Section 3. *M., Tu., W., Th., at* 10. Mr. PATZER.
   Section 4. *Tu., W., Th., F., at* 11. Assistant Professor GAY.
   Section 5. *M., Tu., Th., F., at* 11. Dr. BRAUER.
   Section 6. *Tu., W., Th., F., at* 12. Dr. BRAUER.
2. Special Elementary Course for Classical Students. Like course 1 but with supplementary work. *Throughout the year; Tu., W., Th., F., at* 8. Assistant Professor GAY.
3. Special Elementary Course for Engineers. A modification of course 1 to meet the requirements of the College of Mechanics and Engineering. *Throughout the year; M., T., W., Th., at* 8. Mr. PATZER. *M., Tu., W., Th., at* 9. Dr. BRAUER.
   As many students desire a reading knowledge of French only, the effort of the above elementary courses is concentrated upon reading. Students are expected at the end of an elementary course to read with sufficient ease and accuracy to make a practical use of French text-books in the prosecution of their studies.
4. Special Elementary Course for Students in Commerce. Chardenal's *Complete French Course*, Super's *French Reader, Gil Blas, Colomba, Le Roi des Montagnes. Throughout the year; M., Tu., W., Th., at* 9. Mr. PATZER.

Reading Courses.

5. Advanced reading and syntax. Reading in class of parts of *Cinq-Mars, Ursule Mirouet;* reading independently for examination of the *Histoire de Charles XII.* and other easy French to be assigned. *Throughout the year; M., W., F., at* 11. Professor OWEN.

6. Continuation of Course 5. Reading of *Travailleurs de la Mer*, etc. *Twice a week throughout the year.* Professor OWEN.
The method pursued in these courses will approximate to that of the seminary. Special seminary courses will be furnished whenever this seems desirable.
7. Scientific French Reading for Engineers. Continuation of course 3. Herdler's *Scientific Reader*, Luquiens' *Popular Science*, and other scientific prose. *First semester; M., W., F., at* 2. Dr. BRAUER.

Writing and Speaking Courses.

10. Composition. Open to students who have finished courses 1, 2, 3, or 4, or an equivalent. *Throughout the year; Tu., Th., at* 9. Assistant Professor GAY.
11. Continuation of Course 10. *Throughout the year; Tu., Th., at* 10. Assistant Professor GAY.
15. Conversation. This course is open only to students who have finished courses 1, 2, 3, or 4, or an equivalent. *Twice a week throughout the year.* Section 1. *Tu., Th., at* 12; Section 2. *Tu., Th., at* 10. Assistant Professor GIESE.
17. Conversation, Composition and Reading. A practical course for sophomore students in commerce. *Throughout the year; Tu., Th., at* 11. Mr. PATZER.
18. Commercial Correspondence. For junior students in commerce. *Twice a week throughout the year.* Mr. PATZER.
19. Commercial Correspondence (continued); for senior students in commerce. Mr. PATZER.

Literature.

20. History of French Literature from the Renaissance to the present time. Lectures, with collateral reading. This course is conducted in English. It is open to students who read French with facility. *Throughout the year; M., W., F., at* 12. Assistant Professor GIESE.

Philology.

25. Lectures on Thought and Language. *Once a week; first semester.* At present embodied in course 5. Professor OWEN.

For other courses see below.

Graduate Courses.

These courses are also open to properly qualified undergraduates.

30. Principles of Language; especially the correspondence of thought and sentence, as illustrated in the Romance languages. *Once a week; first semester.* Professor OWEN.
31. Voltaire and the Eighteenth Century. Lectures, reports and collateral reading. This course is conducted entirely in French. *Twice a week throughout the year.* Assistant Professor GIESE.
32. Literature of the Seventeenth Century. Lectures, reports and collateral reading. This course is conducted entirely in French. *Twice a week throughout the year.* Assistant Professor GIESE.
34. The Carlovingian Cycle, with readings from *La Chanson de Roland,* ed. G. Paris, and *Le Voyage de Charlemagne,* ed. Koschwitz. *Throughout the year; M., W., at* 10. Assistant Professor GAY.
35. The Arthurian Cycle, with a special study of Chrestien de Troyes. *Throughout the year; W.,* 4 *to* 6. Assistant Professor GAY.
36. The Picard and Norman dialects, with special reference to the history of the French element in English *Aucassin et Nicolete,* ed. Suchier; *Les Lais de Marie de France,* ed. Warnke. *Throughout the year; W., at* 11. Assistant Professor GAY.
37. Seminary in the Old French Theatre. *First semester; M., at* 2:30. Assistant Professor GAY.
38. Provencal. *Second semester; twice a week.* Assistant Professor GAY.

Courses 34 to 36 may be taken successively, or two may be taken conjointly, with assigned readings sufficient to make a major for a second degree.

SPANISH.

ASSISTANT PROFESSOR GIESE AND PROFESSOR OWEN.

1. Elementary. Translations into English of the Spanish exercises in Sauer's *Conversation Grammar;* Knapp's *Spanish Readings* and Marsh's *Dona Perfecta.* Alternates with Italian. *Three times a week throughout the year.* Professor OWEN.

2. Advanced. Reading of selections from Cervantes (*Don Quijote*), from Calderon (*El Magico Prodigioso*), and from modern poets. *Twice a week throughout the year.* Assistant Professor GIESE.
3. Elementary. For students in commerce. Giese's *First Spanish Book and Reader. Throughout the year; M., T., W., F., at* 9. Assistant Professor GIESE.
4. Conversation, Composition and Reading. A practical course for sophomore students in commerce. *Throughout the year; Tu., Th., at* 11. Mr. SEYMOUR.
5. Commercial Correspondence. For junior students in commerce. *Throughout the year; W., F., at* 11. Mr. SEYMOUR.
6. Commercial Correspondence (continued). For senior students in Spanish. *Twice a week throughout the year.* Assistant Professor GIESE.

ITALIAN.

ASSISTANT PROFESSOR GAY AND PROFESSOR OWEN.

1. Elementary. Translation into English of the Italian exercises in Sauer's *Conversation Grammar,* and of Manzoni's *I Promessi Sposi.* This course is in general like that in Spanish, with which it alternates. *Three times a week throughout the year.* (Omitted in 1903-1904.) Professor OWEN.
2. Advanced. Dante and other classics. *Twice a week throughout the year.* Assistant Professor GAY.

SCANDINAVIAN LANGUAGES.

PROFESSOR OLSON.

This department offers instruction in all of the Scandinavian languages (Norwegian, Danish, Swedish and Old Norse). From one year's instruction in Modern Norse the student is expected to be able to read both Norwegian and Danish authors. The principal courses are devoted mainly to Norwegian authors, but additional instruction in Danish and Swedish literature is offered to students desiring to pursue these branches beyond the limits of the prescribed courses.

1a. Modern Norse. Olson's *Norwegian Grammar and Reader,* Björnson's *En glad Gut,* and Gunderson's collection of *Norske Digte. Three times a week throughout the year.*

1b. Written and oral translation into Norse, and the reading of easy prose selections as a basis for work in composition and

conversation. *Once a week throughout the year.* 1a and 1b together may be taken as one of the language requirements in the English course.

2a. Modern Norse. Selections from the Reader, Overland's *Laerebog i Norges Historie,* Björnson's *Arne,* and Kielland's *Skipper Worse.* Two dramas by Holberg are assigned for outside reading. *Three times a week throughout the year.*

2b. Ibsen's *Brand* and *Peer Gynt,* and selections from Norwegian and Danish poetry. Three dramas by Oehlenschlæger are assigned for outside reading. *Twice a week throughout the year.*

3. History of Dano-Norwegian Literature. Broch and Seip's *Norsk og dansk Litteraturhistorie,* with lectures and papers presented by students on the authors under discussion. *Three times a week throughout the year.*

4. Swedish Literature. Tegner's *Frithiofs Saga,* Runeberg's *Fanrik Stals Sagner,* Vinsnes and Aanrud's *Svenske Digtere,* and Warburg's *Svensk Litteraturhistoria. Twice a week throughout the year.*

5. Old Norse. Vigfusson and Powell's *Icelandic Prose Reader,* or Kahle's *Altisländisches Elementarbuch,* and Nygaard's *Udvalg af den norröne Literatur. Twice a week throughout the year.*

6a. Lectures on early Scandinavian literature and antiquities, with illustrative readings in translation. *Once a week; first semester.*

6b. Lectures on modern Scandinavian authors and literary epochs, with illustrative readings in translation. *Once a week; second semester.*

A knowledge of the Scandinavian languages is not required for courses 6a and 6b.

Advanced Courses.

7. Modern Norwegian literature. The critical reading, with papers and discussions, of representative novels: Björnson's *Synnove Solbakken,* Lie's *Den Fremsynte,* and Kielland's *Skipper Worse. Twice a week; one semester.*

8. Modern Norwegian Literature. The critical reading, with papers and discussion of representative dramas: Björnson's *Mellem Slagene and Sigurd Slembe,* and Ibsen's *Kongsemnerne, Peer Gynt,* and *Et Dukkehjem. Twice a week; one semester.*

9. Studies in Norwegian Poetry. Selections from Wergeland, Welhaven, Munch, Moe, Björnson and Ibsen, to illustrate the different epochs in the development of modern Norwegian literature. *Once a week; one semester.*
10. Norwegian Dialect Writers. Selections from Aasen, Vinje, Garborg, and Sivle, together with a study of the language reform movement. *Once a week; one semester.*

GERMAN.

PROFESSOR HOHLFELD, PROFESSOR VOSS,* ASSISTANT PROFESSOR STERLING, DR. ROEDDER, MR. MEISNEST, MRS. EATON, DR. REIFF, DR. HANDSCHIN, MISS HERFURTH, MR. GOODNIGHT, MISS VEERHUSEN, AND MR. HAUHART.

REQUIRED COURSES.

For students of the English, civic historical, philosophical, and ancient classical courses—

1. Elementary German. Grammar and easy readings, with practice in speaking and writing German. *Four times a week.* Six sections. Mrs. EATON, Dr. REIFF, Dr. HANDSCHIN, Miss HERFURTH, Mr. GOODNIGHT and Mr. HAUHART.

   The work of the first semester is repeated in the second semester in a special section. Students beginning at this time may complete course 1 in the Summer Session.
2. Second-year German. Modern prose, narrative and dramatic, and a drama of Lessing or Schiller. Syntax. Written and oral exercises. For students who have had course 1, or two years of high school German, or an equivalent. Engineering and general science freshmen may take course 2 in place of 2E or 2S. *Four times a week.* Five sections. Mr. MEISNEST, Dr. REIFF, Miss HERFURTH, and Miss VEERHUSEN.

2M. For Modern Classical freshmen. Modern prose, narrative, conversational and historical, and two dramas, at least one by Schiller. Oral practice. Syntax and composition. *Five times a week.*

Section 1, *M., Tu., W., Th., F., at* 8. Mrs. EATON.

Section 2, *M., Tu., W., Th., F., at* 10. Miss HERFURTH.

2S. For General Science freshmen. *First semester:* Narrative and historical prose. Grammar and composition. *Second semester:* introductory scientific prose.

*On leave of absence.

Section 1, *Tu., W., Th., F., at* 11. Assistant Professor STERLING.

Section 2, *M., Tu., W., Th., at* 12. Dr. HANDSCHIN.

2C. For freshmen in the School of Commerce. Modern prose and poetry. Practice in speaking and writing German. *M., Tu., W., F., at* 9. Dr. ROEDDER.

2E. For Engineering freshmen. *First semester:* Narrative and historical prose. Grammar and composition. *Second semester:* Introductory scientific prose. *Four times a week.* Four sections. Mr. MEISNEST, Dr. HANDSCHIN, and Mr. GOODNIGHT.

3M. For Modern Classical sophomores. Prose and verse, chiefly of the classical period, in class. Private readings in modern narrative prose.

Section 1, *M., Tu., Th., at* 10. Mrs. EATON.

Section 2, *M., Tu., Th.,* at 10. MISS VEERHUSEN.

3S. For General Science sophomores. *First semester:* Advanced scientific prose. *Second semester:* Prose and Poetry, including one classical drama.

Section 1, *M., W., F., at* 9. Assistant Professor STERLING.

Section 2, *M., W., F.,* at 9. Dr. HANDSCHIN.

3C. For sophomores in the School of Commerce. Reading, conversation and composition. *Tu., Th., at* 11. Miss VEERHUSEN.

3E. For Engineering sophomores. Advanced prose on subjects of technical science. *First or second semester; three times a week.* Three sections. Mr. MEISNEST and Mr. GOODNIGHT.

4C. For juniors in the School of Commerce. Reading, conversation, composition, largely on topics of special value to students of commerce. *Tu., Th., at* 9. Assistant Professor STERLING.

5C. For seniors in the School of Commerce. *Twice a week throughout the year.*

ELECTIVE COURSES.

A. Advanced Practice Courses.

6A. Grammar and Composition. Open to students who have had course 2 or an equivalent, but desire more practice in grammar and prose composition. Without special permission, this course can be taken only in connection with some other course in the department. *Throughout the year; W., at* 12. Mr. MEISNEST.

7A. Conversation. With work at home not to exceed one hour per week. Open to students who have had course 2 or its equivalent. Without special permission, this course can be taken only in connection with some other course in the department. *Throughout the year; W., F., at* 11. *One-fifth credit.* Dr. REIFF.

8A. Composition and Conversation; with special exercises in German syntax. *Throughout the year; Tu., Th., at* 12. Dr. ROEDDER.

Open to students who have had at least two hours for one year (four-fifths credit) beyond course 2.

8B. Advanced practice in writing and speaking German. Open to all graduates and to such undergraduates as have had course 8A or an equivalent. *Throughout the year; Tu., Th., at* 9. Professor HOHLFELD.

9A. Critical German Prose. Rapid reading in history, biography, criticism, etc. Especially designed for students who wish to read with ease German books on historical, philosophical and literary topics. Open to students who have had course 2 or an equivalent. *Twice a week throughout the year.*

B. Teachers' Course.

26. A critical introduction to the methods of studying and teaching modern foreign languages. Lectures, reports, discussions, and practice teaching. *Th., at* 3. Professor HOHLFELD (*first semester*) and Professor VOSS (*second semester.*)

Aside from this course, the attention of prospective teachers of German is especially called to courses 8T, 8B, 28 and 40a and b.

C. German Literature.

(1) FOR UNDERGRADUATES.

10A. Modern German Dramatists. Grillparzer (*first semester*) and Hebbel (*second semester*), or other authors like Ludwig, Wildenbruch and Hauptmann. *Throughout the year; Tu., Th., at* 11. Alternates with 10B. Dr. HANDSCHIN.

10B. Modern German Novelists. Readings from authors like Scheffel, Freytag, Keller, C. F. Meyer and Sudermann. *Throughout the year; Tu., Th., at* 11. (Omitted in 1903-1904.) Dr. HANDSCHIN.

11A. Schiller. Introductory study of his life and selections from his works. *Maria Stuart* or *Braut von Messina*, and *Wallenstein*. *Throughout the year; M., W., F., at* 10. Alternates with 11B. Assistant Professor STERLING.

11B. Modern German Poetry. *First semester:* Lyrics and ballads. *Second semester:* Epic poems like Scheffel's *Der Trompeter von Saekkingen* and Baumbach's *Frau Holde*. *Throughout the year; M., W., F., at* 10. (Omitted in 1903-1904.) Assistant Professor STERLING.

12A. Goethe. Introductory study of his life and selections from his works. *Goetz* or *Egmont, Iphigenie* or *Tasso, Gedichte*. Private reading. *Throughout the year; Tu., Th., at* 9. Alternates with 12B. Professor VOSS.

12B. Lessing. Introductory study of his life and selections from his works. *Emilia Galotti, Nathan*, prose selections. Private reading. *Throughout the year; Tu., Th., at* 9. (Omitted in 1903-1904.) Dr. ROEDDER.

13A. Introduction to the Literature of the Eighteenth Century. Selections from Lessing, Goethe and Schiller, with introductory studies of their lives. *Throughout the year; M., W., F., at* 9. Alternates with 13B. Professor HOHLFELD.

13B. Introduction to the Literature of the First Half of the Nineteenth Century. Selections from Kleist, Uhland, and Heine, with introductory studies of their lives. *Throughout the year; M., W., F., at* 9. (Omitted in 1903-1904.) Professor HOHLFELD.

Courses 10 and 11 are open to students who have had course 2 or its equivalent. Students who have had more work in German will be required to do a larger amount of reading than the regular classes in order to get full credit for these courses.

Courses 12 and 13 are primarily intended for modern classical juniors, but are open to others who have had at least two hours for one year (four-fifths credit) from courses 6 to 11.

Without special permission, no student is allowed to elect more than two courses from each of the two foregoing groups.

Courses 10, 12, and 13 are conducted chiefly in German; course 11 in English.

(2) FOR GRADUATES AND UNDERGRADUATES.

21. Goethe's Prose. Selections from *Dichtung und Wahrheit; Wilhelm Meister; Italienische Reise; Briefwechsel mit Schiller.* Collateral readings and reports. *Twice a week throughout the year.* (Omitted in 1903-1904.) Mrs. EATON.

22. German Romanticism. Class work, collateral reading and reports. *Twice a week throughout the year.* Mrs. EATON.

25. Goethe's Faust (both parts). With informal lectures and collateral reading in Faust literature. *Throughout the year; Tu., Th., at* 11. (Omitted in 1903-1904.) Dr. REIFF.

28. History of German Literature from the Twelfth to the Nineteenth Century. Lectures, reports, and readings in Max Müller's German Classics. *Throughout the year; Tu., Th., at* 12. Professor HOHLFELD.

29. Popular German Literature. *Volkslied, Märchenliteratur,* and *Volksbücher (first semester); modern dialect literature (second semester). Twice a week throughout the year.*

Courses 21-29 are open to graduates and to those undergraduates who have had one of the courses 12A, 12B, 13A, 13B. Courses 21, 22 and 25 are chiefly conducted in English; the other courses of this and the folowing group are conducted entirely in German.

(3) PRIMARILY FOR GRADUATES.

31. History of German Literature in the Nineteenth Century. Special attention will be given to the general intellectual movements of that period and to influences from and upon foreign literatures. Lectures, reports, and private readings. *Throughout the year; Tu., Th., at* 12. Alternates with course 28. (Omitted in 1903-1904.) Professor HOHLFELD.

35. The Development of the German Drama from its beginnings to the end of the Eighteenth Century. Lectures, reports, and private readings. *Twice a week throughout the year.*

38. Seminary in German Literature. The aim of the seminary is to train properly qualified students in the scientific methods of the historical and critical study of literature. The rotation of subjects forms a cycle of at least three years. In 1901-1902 the work was in the development of German lyric poetry from Opitz to Goethe and in Goethe's lyrics; in 1902-1903, in the Storm and Stress movement and in German Romanticism. In 1903-1904, the work will be in Goethe

(*first semester*) and in Goethe's Faust (*second semester.*) *Throughout the year, W. 3 to 5.* Professor HOHLFELD.

Courses 31-38 cannot be taken by undergraduates unless they have had course 28.

D. German Philology.

PROFESSOR VOSS AND DR. ROEDDER.

Introductory Courses.

40a. Introduction to the Historical Study of German. A brief history of the Modern High German literary language will be followed by the study of extracts from Early Modern High German, and gradually lead to the study of Middle High German. Lectures and recitations. *First semester; M., W., at* 12. Professor VOSS.

40b. The *Nibelungenlied,* with lectures on Middle High German Literature, especially the *Volksepos. Second semester; M., W., at* 12. Professor VOSS.

42. Advanced Middle High German. *Kudrun,* Hartmann's *Der arme Heinrich,* Walther von der Vogelweide. Lectures and recitations. *Throughout the year; Tu., Th., at* 10. Professor VOSS.

44a. Gothic Grammar, with readings from the Gospels. Braune-Balg's Gothic Grammar. *First semester; twice a week.* In alternate years. (Omitted in 1902-1903.) Dr. ROEDDER.

44b. Old High German. Introductory course. Braune's *Althochdeutsche Grammatik* and readings from Braune's *Althochdeutsches Lesebuch. Second semester; twice a week.* In alternate years. (Omitted 1902-1903.) Dr. ROEDDER.

Advanced Courses.

46a. Old Saxon. Holthausen's *Altsaechisches Elementarbuch* and extracts from the *Heliand,* ed. Behaghel. *First semester; twice a week.* In alternate years. (Omitted in 1903-1904.) Dr. ROEDDER.

46b. Germanic Mythology. Lectures and collateral reading. *Second semester; twice a week.* In alternate years. (Omitted in 1903-1904.) Dr. ROEDDER.

47. Studies in the Language and Literature of the Sixteenth and Seventeenth Centuries. Lectures and readings from Braune's *Neudrucke deutscher Litteraturwerke des XVI. und XVII. Jahrhunderts. First semester; M., W., at* 9. *Second semester; W., at* 9. Professor VOSS.

48. Proseminary in Germanic Philology. For 1902-1903: Old High German texts (*first semester*), Old Saxon texts (*second semester*). For 1903-1904: Middle Low German texts (*first semester*), Gothic (*second semester*). *Once a week.* Dr. ROEDDER.
49. Philological Seminary. The work of the seminary is distributed over three years. While special attention is given to the classical writers of the Middle High German period, the other periods also, especially the transition period from Old to Middle High German, and from Middle to Modern High German, will be studied. Hartmann von Aue, Gottfried von Strassburg, Wolfram von Eschenbach, *Deutsche Gedichte des XI. und XII. Jahrhunderts, Reinke de Vos,* Thomas Murner, and Hans Sachs. *Tu.,* 3 *to* 5. Professor VOSS.

German Group.

Students who wish to specialize in German will be admitted to the German group (see page 84) at the beginning of the sophomore year, provided that their previous work has been of a sufficiently high grade. Such students may substitute German for a part of the required work of the sophomore year the amount not to exceed five hours a week.

Germanistische Gesellschaft.

The *Germanistische Gesellschaft* is an organization of students and instructors of the University who are interested beyond the work of the class-room in the study of the German language and literature and of German life and culture. The meetings of the *Gesellschaft* are of a two-fold character:

(1) *Allgemeine Gesellschaftsabende,* two evenings each month, are open to all members, and consist of lectures, recitations, dramatic exercises, singing and social intercourse, all in German.

(2) The meetings of the *Wissenschaftliche Abteilung,* one hour every two weeks, are restricted to the instructors and graduate and advanced students of the department and are devoted to the usual work of a journal club and to the presentation and discussion of original papers.

ENGLISH.

PROFESSOR FREEMAN, PROFESSOR FRANKENBURGER, PROFESSOR HUBBARD, ASSOCIATE PROFESSOR LATHROP, ASSISTANT PROFESSOR PYRE, ASSISTANT PROFESSOR CAIRNS DR. BEATTY, DR. BROWN, MR. DODGE, MISS HUNT, MR. BLEYER, MR. SYPHERD, MR. WHEELER, MR. FRAMPTON, MR. COOK, MR. DAGGY, AND MR. LAIRD.

1. Freshman English. English Prose Style. Composition. The elements of effective writing in prose, based upon direct study of selected authors, with training in composition. *Three hours a week throughout the year.* Nineteen sections. For hours and rooms see time table of required studies. Required of freshmen in all courses. Professor HUBBARD, Assistant Professor PYRE, Assistant Professor CAIRNS, Dr. BEATTY, Mr. DODGE, Miss HUNT, Mr. BLEYER, Mr. SYPHERD, Mr. WHEELER, Mr. FRAMPTON, and Mr. COOK.

Rhetoric and Oratory.

2. Sophomore Composition. Elective for sophomores who have finished the required English of the freshman year. Required in the School of Commerce. *Tu., Th., at* 8 *and* 11. Associate Professor LATHROP, Dr. BROWN, and Dr. BEATTY.
3. Development of Oratorical Themes. Lectures on the theory of oratory. Study of the oration from the point of view of purpose, with analysis of oratorical masterpieces. Preparation and delivery of original orations. *Throughout the* year. Mr. DAGGY.
4. Advanced Rhetoric. Open to those who have completed courses 1 or 2 above. Analysis of great essays, orations, and prose fiction, with higher rhetorical and literary criticism. Lectures with supplementary readings. *Throughout the year; M., W., F., at* 12. Elective. Professor FRANKENBURGER.
5. Forensics. Elective. *Throughout the year; M., W., F., at* 11. Professor FRANKENBURGER.
6. Advanced Composition II. Exposition. Study of such authors as Coleridge, Lyell, Huxley, Darwin, Bagehot; practice in expository composition, with reference to the special studies of individual students. Open to those who have had either course 2 or course 7, and to others with the consent of the instructor. *Throughout the year; Tu., Th., at* 11. Associate Professor LATHROP.

7. Advanced Composition I. Elective for juniors and seniors, and for sophomores who have done very good work in course 1. This course may not be elected by semesters. No credit will be given for less than the whole course. *Throughout the year; M., W., F., at* 11. Mr. DODGE.

8. Rhetorical Seminary. Original composition; the philosophy of criticism with the deduction and application of literary canons. *Throughout the year; two hours a week in one session.* Open to graduates, seniors and juniors. Professor FRANKENBURGER.

9. Literary Criticism. The course will consist of a consideration of the main principles of literary criticism, and a study of the ballads and romances, as an introduction to the study of comparative literature. *Throughout the year; Tu., Th., at* 9. Open to juniors and seniors. Dr. BEATTY.

10. Elocution and Dramatic Reading. Lectures; declamation with personal criticism; Macbeth, Othello, Merchant of Venice and Hamlet. Open to those who have taken course 12 or its equivalent. *Throughout the year; Tu., Th., at* 12. Professor FRANKENBURGER.

11. Rhetoric, with special emphasis on argumentation and persuasion. Practice in the writing of argumentative composition, with a view to the acquisition of an effective style in debate. Lectures with supplementary readings. *Throughout the year; Tu., Th., at* 9. Mr. DAGGY.

12. Elocution. Lectures will be given upon vocal physiology, the proper use and care of the voice, reading and gesture. *Throughout the year; M., W., F.* Mr. LAIRD and Miss LAMONT.

13. Oratorical Delivery. Open to those who have had sufficient previous preparation to be able to do the work. Declamations, readings and lectures. *Throughout the year; M., W., F.* Mr. DAGGY.

14. Elocution. Reading, declamation and lectures. *Second semester; M., W., F., at* 9. Mr. LAIRD and Miss LAMONT.

15. Elocution and Oratory. (Elective in Law School.) Voice training for quality and economy. Practice in reading and declamation from the great orators. Lectures on principles of gesture, with practical exercises. Practice in extempore speaking. Lectures and class discussions on the questions

which interest the lawyer as a public speaker. *Twice a week throughout the year.* Mr. DAGGY.

16. Declamation. Development of power and originality in the interpretation of literature, with a view to public presentation. Private rehearsals each week. Open to those who have had previous preparation. *Tu., Th., at hour to be arranged.* Miss LAMONT.

Arrangements can be made for private lessons by consulting Mr. DAGGY, Mr. LAIRD, and Miss LAMONT.

The advanced work in rhetoric and composition in the University is fairly equal in scope and variety to the needs of the student who is looking toward journalism. For facility in composition course 7 is provided, which meets three times a week for a year and requires from each student a written paper at every meeting. Those finishing this course may enter upon course 6 for another year. Course 4 in advanced rhetoric, three times a week for a year, gives the philosophy of rhetorical expression, with practice in writing and criticism, and practical talks on preparation of manuscript, proof-reading, etc. Following this is course 8, which takes up style and literary criticism, twice a week for a year. The course furnishes ample practice in the writing of fiction, poetry, dramatic composition, and critical reviews.

Language.

20. Anglo-Saxon and Middle English. Required in the English course, sophomore or junior year. The work of the first semester may be elected without work of the second semester. *First semester,* Anglo-Saxon; *second semester,* Middle English. *Throughout the year; M., W., F., at* 8 *and* 9. Dr. BEATTY.

21. Anglo-Saxon Poetry. Study of selections, survey of Anglo-Saxon literature. Open to students who have taken the Anglo-Saxon of course 20. *Second semester; M., W., F., at* 8. Professor HUBBARD.

22. Beowulf. Introduction to the study of old Germanic life. Open to seniors. *First semester; M., W., F., at* 8. Professor HUBBARD.

23. Modern English Grammar. A course for teachers of English. *Second semester; Tu., Th., at* 8. Professor HUBBARD.

24. English Philology Seminary. Critical study of texts; historical grammar; dialects. Open to graduates. *Two hours a week throughout the year.* Professor HUBBARD.

See also Comparative Philology, course 1; French, course 25.

Literature.

30. General Survey of English Literature. This course is prerequisite to all other courses in English literature. *Throughout the year; M., W., F., at* 9 *and* 11. Open to students who have taken course 1 or its equivalent. Required of sophomores in the English course. Associate Professor LATHROP, Assistant Professor PYRE, Assistant Professor CAIRNS, and Dr. BROWN.
31. Chaucer. History of the literature of the fourteenth and fifteenth centuries. *Second semester; M., W., F., at* 10. Dr. BROWN.
32. The Literature of the Elizabethan Period. Given in alternate years. *First semester; M., W., F., at* 10. (Omitted in 1902-1903). Assistant Professor PYRE.
33. The Eighteenth Century. From Dryden to Cowper. Lectures, collateral reading, papers. *Throughout the year; M., W., F., at* 9. Mr. DODGE.
34. The English Romantic Movement. Given in alternate years. *Second semester; M., W., F., at* 10. (Omitted in 1902-1903.) Assistant Professor PYRE.
35. The Victorian Era. Given in alternate years. *Second semester; M., W., F., at* 10. Assistant Professor PYRE.
36. The Drama. Shakespeare. A part of the first semester is devoted to history of the English drama, the remainder of the year to Shakespeare. Open to seniors. *Throughout the year; M., Tu., W., Th., at* 11. Professor FREEMAN.
37. The Epic. Milton, Spenser. Lectures, collateral reading, and papers. Given in alternate years. *First semester; Tu., Th., at* 10. (Omitted in 1902-1903.) Professor FREEMAN.
38. English Lyric Poetry. Given in alternate ears. *First semester; M., W., F., at* 10. Professor FREEMAN.
39. The Novel. The development of the Engish novel. Study of representative novels. *Throughout the year; Tu., Th., at* 10. Associate Professor LATHROP.
40. American Literature. A general survey of literary writings in America from the earliest times. (This course must be pre-

ceded by course 1, and should be preceded or accompanied by course 30.) *Throughout the year; Tu., Th., at* 9. A section will be formed at 10 if a sufficient number desire. Assistant Professor CAIRNS.

41. Spenser. The course aims to cover the greater part of Spenser's poetical work. *First semester; M., W., F., at* 9. (Omitted in 1902-1903.) Mr. DODGE.

42. Poetics. The science of verse. The history of English verse-forms. *First semester; Tu., Th., at* 9. (Omitted in 1902-1903.) Assistant Professor PYRE.

43. The English Essayists. *Second semester; M., W., F., at* 9. (Omitted in 1902-1903.) Mr. DODGE.

45. Browning. The interpretation of representative poems. *First semester; M., W., F., at* 9. Professor HUBBARD.

47. Significant Movements in American Literature. Open to students who have completed course 40 or its equivalent. The course may be elected by semesters. Assistant Professor CAIRNS.

    a. First attempts toward a national literature; the work of the "Hartford Wits" and the "Knickerbocker" writers; especial attention to Irving, Bryant, Cooper, and Poe. *First semester; Tu., Th., at* 8.

    b. The New England Writers. Especial attention to Emerson, Hawthorne, Longfellow, Whittier, Holmes, and Lowell. *Second semester; Tu., Th., at* 8.

48. English Prose. Study of the great prose writers of the eighteenth and nineteenth centuries. Lectures on the history of English literature. This course is designed especially for students of prose composition, to be taken in connection with courses 2, 6 and 7. It may be substituted for course 30 as a prerequisite to all other courses in English literature. *Throughout the year; M., W., F.* (Omitted in 1902-1903.)

49. English Biography. Lectures on English biographical writing, with detailed study of classic biographies. *First semester; Tu., Th., at* 11. Assistant Professor PYRE.

44. English Literature Seminary. Subject for 1902-1903: Shakespeare. *Throughout the year; Tu.,* 4-6. Open to graduates and properly qualified seniors. Professor FREEMAN.

MATHEMATICS.

PROFESSOR VAN VELZER, PROFESSOR SLICHTER, ASSISTANT PROFESSOR SKINNER, ASSISTANT PROFESSOR DOWLING, MR. CRATHORNE, MR. WOLFF, MR. PERSONS, AND MISS ALLEN.

Elementary Courses.

1. Algebra. This course is required of students in all courses. Text-book: Van Velzer and Slichter's *University Algebra*. *First semester; three times a week.* Professor VAN VELZER, Professor SLICHTER, Assistant Professor SKINNER, Assistant Professor DOWLING, Miss ALLEN.

   This course will be repeated in the second semester if a sufficient number of students desire it.

2. Trigonometry. This course is required of students in all courses. The ratio system is used exclusively and special stress is laid upon goniometry. *Second semester; three times a week.* Same divisions as in course 1.

2c. Trigonometry. Required of students in the School of Commerce. *First semester; twice a week.* Assistant Professor SKINNER.

3. Algebra (continuation of course 1). This course is elective for all students who have taken course 1. *Second semester; twice a week.* Assistant Professor SKINNER.

4. Analytic Geometry (elementary course). Straight line, conic sections, general equation of the second degree, transcendental curves, and an introduction to geometry of three dimensions. *Twice a week for one year.* Assistant Professor DOWLING.

5. Calculus (elementary course). Differentiation and integration of functions of one variable with the usual geometric applications. *Three times a week for one year.* Assistant Professor DOWLING.

Advanced and Graduate Courses.

10. Higher Trigonometry. This course must be preceded by course 5. *First semester; twice a week.* Assistant Professor SKINNER.

11. Calculus (advanced course). Partial derivatives and multiple integrals with the usual geometric applications. *Twice a week for one year.* Assistant Professor SKINNER.

12. Differential Equations. Ordinary and partial differential equations with a few geometric and mechanical applications. Murray's *Differential Equations* is used as a text. This course must be preceded by course 11 or be taken along with it. *Three times a week for one year.* Professor VAN VELZER.

13. Theoretical Mechanics. An elementary course in analytical mechanics. This course may be taken by those who have had analytic geometry and calculus. *Three times a week for one year.* Professor SLICHTER.
14. Analytic Geometry of Two Dimensions (advanced course). Modern methods in plane analytic geometry. This course must be preceded by course 4. *Three times a week for one year.* Professor VAN VELZER.
15. Projective Geometry. Holgate's translation of Reye's *Geometrie der Lage* is used as a text. *Twice a week for one year.* Assistant Professor DOWLING.
16. Analytic Geometry of Three Dimensions. This course should be preceded by courses 11 and 14. *Twice a week for one year.* Professor VAN VELZER.
17. Quaternions. *Three times a week in the second semester in alternate years.* Assistant Professor SKINNER.
18. Theory of Probabilities. A course in this subject adapted to the needs of students of science and economics will be given occasionally. The mathematics of the freshman year is required for admission to the class. *Twice a week for one semester.* Professor SLICHTER.
19. Differential Geometry. The application of the differential calculus to the geometry of twisted curves and surfaces. *Twice a week during the first semester in alternate years.* Assistant Professor SKINNER.
20. Elliptic Functions. This course must be preceded by course 12. *Twice a week for one year.* Assistant Professor DOWLING.
21. Theory of Functions. *Three times a week for one year in alternate years.* Assistant Professor DOWLING.
22. Newtonian Potential Function. Lectures and required readings on the theory of potential with an introduction to spherical harmonics. *Twice a week for one year.* Professor SLICHTER.
23. Partial Differential Equations of Mathematical Physics. Based on Riemann's *Lectures*, and Byerly's *Spherical Harmonics. Twice a week for one year in alternate years.* Professor SLICHTER.
30. Theoretical Hydrodynamics. Lectures on fluid motion. *Twice a week for one year in alternate years.* A course in the Theory of Elasticity may be substituted for this course. Professor SLICHTER.

32. Modern Algebra. Invariants, covariants, etc. This course must be preceded by courses 3 and 11. *Twice a week for one year in alternate years.* Professor VAN VELZER.
33. Theory and Application of Groups of Finite Order. *Three times a week for one year in alternate years.* Assistant Professor SKINNER.
34. Theory of Numbers. Congruences, quadratic residues, quadratic forms, etc. The work is based on Dirichlet's *Zahlentheorie. Twice a week for one year in alternate years.* Professor VAN VELZER.
35. Higher Plane Curves. The subject is presented from the point of view due to Clebsch as it has been perfected by Brill and Noether. *Twice a week for one year.* Assistant Professor DOWLING.
36. Mathematical Seminary. *Two-hour sessions once a week throughout the year.* Professor VAN VELZER, Professor SLICHTER, Assistant Professor SKINNER, and Assistant Professor DOWLING.

Mathematical Group.

Students who desire to take the degree of *Bachelor of Arts, Bachelor of Letters,* or *Bachelor of Science,* in mathematics, will be admitted to the mathematical group at the beginning of the sophomore year. Such students may omit studies prescribed for the sophomore year of the course to an amount not exceeding six hours a week and substitute mathematics therefor. Students expecting to write theses in applied mathematics should take the course in mechanics in their junior year.

ASTRONOMY.

PROFESSOR COMSTOCK.

1. General Astronomy. This course is essentially non-mathematical. Special attention is given to a direct study of the sky, supplemented by simple observations with home-made apparatus. *First semester, three times a week.*
2. Spherical and Practical Astronomy. This course can be undertaken only by students who have completed course 1 in physics, the mathematics of the freshman year, and course 1 in astronomy. The mathematics of the sophomore year must either precede or be taken concurrently with the course. *First semester, twice a week; second semester, three times a week.*

3. Spcial Topics in Celestial Mechanics. This course presupposes in the student a working knowledge of the infinitesimal calculus and the elements of dynamics. *First semester, three times a week; second semester, twice a week.*
4. Graduate Courses. Graduate students and others desiring to pursue advanced astronomical studies will be received in the Washburn Observatory as assistants and will take part in the regular series of observations with the equatorial telescopes or with the meridian instruments, at the same time continuing their theoretical studies. Facilities for independent original work will be afforded to such students, and their work, if of sufficient value will be printed in the *Publications of the Washburn Observatory.* Ten volumes of these *Publications* have already been issued.

For other courses of instruction consult the titles Washburn Observatory and Astronomy in the announcement of the College of Mechanics and Engineering.

PHYSICS.

PROFESSOR SNOW, ASSISTANT PROFESSOR TROWBRIDGE, ASSISTANT PROFESSOR MENDENHALL, DR. WILDER, MR. MILLER, MR. WILCOX, MR. ANGELL, MR. KELLY, MR. TERRY, AND MR. PFUND.

General Course.

1. General Lectures and Introductory Laboratory Practice. Required of students in the general science course, and elective for students of all other courses. A knowledge of plane trigonometry, including the use of logarithms, is required for registration. Given as a full study throughout the year. Lectures: *M., Tu., W., Th., at* 12. Professor SNOW. *One recitation by the class in smaller sections at hours to be arranged.* Professor SNOW and Mr. WILCOX. *Laboratory practice twice a week at hours to be arranged.* Mr. MILLER, Mr. ANGELL, Mr. KELLY, and Mr. TERRY.

Advanced Courses.

2. Advanced Course of Experimental Lectures. (a) Heat and Light. *First semester; three times a week at* 12. Assistant Professor MENDENHALL.

   (b) Electricity and Magnetism. *Second semester; three times a week at* 12. Assistant Professor TROWBRIDGE.

Together with the accompanying laboratory practice (course 3), this course is especially adapted to the needs of those expecting to teach.

3. Advanced Laboratory Practice. Designed to accompany course 2. *Twice a week throughout the year at hours to be arranged. First semester:* Heat and Light. Assistant Professor MENDENHALL. *Second semester:* Electricity and Magnetism. Assistant Professor TROWBRIDGE and Dr. WILDER.
4. Mathematical Physics. (a) Theory of Electricity and Magnetism. *First semester, three times a week at hours to be arranged.* Assistant Professor TROWBRIDGE.

   (b) Theory of Light. *Second semester; three times a week at hours to be arranged.* Assistant Professor MENDENHALL.

   This course is an extension of course 2 and is open to those who have taken course 2 or its equivalent, and also a course in the differential and integral calculus. Students who have had the calculus and who wish for a full year's course in Light, may arrange to combine 2 (a) with 4 (b).
5. Thesis. At the beginning of the first semester, the student is expected, with the advice of the instructors, to take up some special line of investigation, which is to be conducted, under the direction of those in charge of the department, throughout the year. *Full study throughout the year.* Assistant Professor TROWBRIDGE and Assistant Professor MENDENHALL.
6. Colloquium. A class, meeting on alternate Thursdays throughout the year at 4 o'clock, for the critical reading and discussion of the current periodical literature. Required of students in the physics group, and elective for all others. Assistant Professor TROWBRIDGE.

Graduate Courses.

16. Electricity and Magnetism. The requirements for this course, and also for the following courses, are a good working knowledge of the calculus and the completion of the preceding undergraduate courses, or their equivalents. *Throughout the year; three times a week at* 12. Assistant Professor TROWBRIDGE.

    The treatment of this special course is based on that given in Drude's *Physik des Aethers*, special attention being given to the subjects of electro-magnetism and the theory of electromagnetic waves.

17. The Electro-Magnetic Theory of Light. *Throughout the year; twice a week at* 12. Assistant Professor TROWBRIDGE.

It is the aim in this course, which is a continuation of course 16, to give a rigid mathematical treatment of light from the electro-magnetic point of view.

Courses 16 and 17 are given in alternate years. In 1903-1904 course 17 will be given.

18. Radiant Energy. *Throughout the year; twice a week at* 12. Assistant Professor MENDENHALL.

This course, which treats of geometrical optics, the wave theory of light and radiation, follows the treatment presented in Drude's *Lehrbuch der Optik.*

20. Graduate Research. This course is designed for those who have completed the equivalent of the laboratory practice represented by the undergraduate courses, and who now desire to devote some time to investigation in special lines. This work will be encouraged by reserving rooms in the laboratory which are devoted exclusively to research work, and by securing whatever special apparatus may be necessary to the successful carrying out of original investigation. Professor SNOW, Assistant Professors TROWBRIDGE and MENDENHALL.

21. Physical Seminary. The students are expected to present written reports embodying detailed and critical study of classic researches and certain special fields of investigation. Participation is limited to graduate students or others with equal preparation. Required of those working for advanced degrees. *Two hours a week on alternate Thursdays, at* 4. Assistant Professor MENDENHALL.

Engineering Courses.

101. General Lectures and Introductory Laboratory Practice. This course is similar in many respects to course 1, but is more technical in its nature, and is particularly designed to meet the needs of the engineering students, of whom it is required. *Lectures Tu., Th., at* 4. Dr. WILDER. *Two recitations per week by the class in smaller sections at hours to be arranged.* Dr. WILDER and Mr. WILCOX. *Laboratory practice twice a week throughout the year* for students in the mechanical and electrical courses; *twice a week during the first semester, and once a week during the second semester* for students in the civil engineering course. Mr. MILLER, Mr. ANGELL, Mr. KELLY, and Mr. TERRY.

104. Precision of Electrical Measurements. A laboratory course in the exact determination of electrical quantities. Required of juniors in electrical engineering and elective for students in the other engineering courses. *First semester; twice a week at hours to be assigned.* Dr. WILDER.

CHEMISTRY.

PROFESSOR DANIELLS, PROFESSOR KAHLENBERG, ASSISTANT PROFESSOR HILLYER, ASSISTANT PROFESSOR LENHER, DR. PATTEN, MR. SHINN, MR. HUTCHINS, MR. HUDDLE, MR. NEWELL, MR. TIBBALS, MR. NORTH, MR. FERNEKES, AND MR. PATTON.

1. General Chemistry. Lectures and laboratory work. *Full study throughout the year.* Assistant Professor LENHER and assistants.
2. General Chemistry for freshmen of the College of Engineering and of the School of Commerce. *Two lectures, one recitation, and one three-hour laboratory period a week throughout the year.* Assistant Professor LENHER and assistants.
3. Advanced Inorganic Chemistry, second year. A course of advanced inorganic chemistry, special attention being given to the discussion of modern theories of chemistry. Lectures and laboratory work. Assistant Professor LENHER.
4. Chemical Preparations. Laboratory course in the preparation of typical inorganic compounds. Assistant Professor LENHER.
5. Research Work in Inorganic Chemistry. This course is designed for students who desire to prepare a thesis in chemistry and for candidates for a higher degree. Assistant Professor LENHER.

10. Analytical Chemistry. Qualitative and quantitative. *Daily throughout the year.* Professor DANIELLS and Mr. HUTCHINS.
11. Analytical Chemistry for Electrical and Electro-Chemical Engineers. *First semester,* qualitative analysis; *second semester,* quantitative analysis. *Two-fifths study for the sophomore year.* Professor DANIELLS and Mr. HUTCHINS.
12. Quantitative Chemical Analysis for Engineers; continuation of course 11. The analysis of metals, ores, minerals and economic products. *Three-fifths study for the junior year.* Professor DANIELLS and Mr. HUTCHINS.
13. Quantitative Analysis for Students in Pharmacy. ***Daily during the first half of the first semester.*** **Professor DANIELLS and Mr. HUTCHINS.**

14. Water Analysis for Students in Sanitary Engineering. *Daily during the second semester.* Professor DANIELLS.

15. Toxicology, Urine Analysis, and Sanitary Water Analysis. *Second semester, daily.* Open only to those who have taken at least one semester of quantitative analysis. Professor DANIELLS.

20. Organic Chemistry. Lectures (a) on the elements of organic chemistry, and (b) on carbohydrates and stereo-chemistry and on synthetic medicines and perfumes. The lectures will be supplemented by laboratory work (a) in the preparation of typical substances to illustrate the general classes of organic compounds, and (b) in ultimate analysis and in the preparation of series of related compounds, or in the synthesis of important special substances treated of in the classroom. *Full study throughout the year;* (a) *Lectures, first semester, M., W., F., at* 9; (b) *Lectures, second semester, Tu., Th., at* 9; *both supplemented by laboratory work.* Assistant Professor HILLYER.

21. Study of Methods of Preparation of Organic Compounds. Lectures and recitations twice a week with laboratory work. *Full study during the first semester.* Assistant Professor HILLYER.

22. Investigations in Organic Chemistry. Students who desire some problem in organic chemistry as a subject for the senior thesis should make known their desire at the close of the junior year, so that the subject may be assigned and preliminary study may be done during the summer session or vacation. Graduates who intend to study organic chemistry should announce their intention at the earliest date, with a statement of their preparation, so that lines of study may be suggested to be pursued before the opening of the first semester of attendance. A knowledge of French and German is necessary. Assistant Professor HILLYER.

23. Seminary in Organic Chemistry. Advanced students meet weekly to report on assigned topics bearing on some phase of the literature of the great researches in organic chemistry or on the lives of the men who have contributed to its advancement. Assistant Professor HILLYER.

24. Electrolysis and Electrosynthesis of Organic Compounds. Conferences once a week, with laboratory work. *Three-fifths*

study during the second semester. Assistant Professor HILLYER.

25. Organic Nitrogen Derivatives. Lectures and recitations in the study of the synthetic and natural alkaloids, uric acid, the ptomaines, and the organic dye stuffs. *Three-fifths study during the second semester.* Assistant Professor HILLYER.

30. General Course in Physical Chemistry. Lectures and recitations supplemented by laboratory exercises in physico-chemical measurements. This course must be preceded by course 1 in chemistry. *Full study throughout the year.* Lectures and recitations. *First semester, Tu., Th., at* 8; *second semester, W., F., at* 8. Professor KAHLENBERG and Mr. SHINN.

31. Electrochemistry. Lectures and recitations twice a week. Laboratory work in electrochemical measurements supplements the lectures, and with them makes a full study. *Lectures during the first semester; laboratory work throughout the year.* Professor KAHLENBERG.

32. Thermal Chemistry. *Lectures M. at* 8; *and one period of three hours of laboratory work a week; second semester.* Professor KAHLENBERG.

33. Special Laboratory Course in Physical Chemistry. This course is for seniors in engineering who desire an acquaintance with the methods of physico-chemical measurement. *Full study during the first semester; hours to be arranged.* Professor KAHLENBERG.

35. Advanced Physical Chemistry. Lectures on selected topics. *Second semester; Th., at* 8. In 1904 the lectures will be on the subject of chemical dynamics. Professor KAHLENBERG.

36. Research Work in Physical Chemistry. Students having sufficient training may take up research work in physical chemistry, to which special importance is attached and for which every facility is furnished. This course is especially designed for seniors who desire to prepare a thesis and for graduates seeking higher degrees. *Full study throughout the year; hours to be arranged.* Professor KAHLENBERG.

37. Seminary in Physical Chemistry. Original articles of importance will be studied in detail, with a view to broaden and deepen the understanding and to act as a stimulus to further research. *At least once a week throughout the year.* Professor KAHLENBERG.

50. Assaying. A course in practical assaying. *Second semester; hours to be arranged.* Assistant Professor LENHER.

Instructors and advanced students meet weekly during the year to report on articles in the current chemical journals and on assigned topics suggested by recent work in chemistry.

GEOLOGY AND MINERALOGY.

PROFESSOR VAN HISE, PROFESSOR HOBBS, AND ASSISTANT PROFESSORS CLEMENTS AND LEITH.

For students who wish to take a general educational course in geology no definite prerequisites are specified, although physics and chemistry should be first taken if practicable. To pursue successfully a long course in mineralogy or geology, physics and chemistry are prerequisites. Further, all students who intend to take geology as a major study should take mineralogy during the previous year, since a full year's work in this subject is an essential preparatory study to advanced work in geology. It is advised that when possible the mineralogy be taken in the sophomore year. Under the group system the courses are arranged by the professor in charge. The special work may be geology, under Professor VAN HISE, Assistant Professors CLEMENTS and LEITH, or mineralogy or petrology, under Professor HOBBS.

GEOLOGY.

PROFESSOR VAN HISE, PROFESSOR HOBBS, AND ASSISTANT PROFESSORS CLEMENTS AND LEITH.

1. Part I. General Geology. *Three times a week.* The geological forces which have modified and are now modifying the world. *Twice a week:* The physiography of United States. These courses are especialy adapted to students who intend to teach physical geography and those making a specialty of history. The course includes numerous short excursions. *First semester to holiday vacation.* Professor VAN HISE.

Part II. Historical Geology. Special emphasis is given to the history of the North American continent. *First semester from holiday vacation and six weeks of the second semester.* Assistant Professor CLEMENTS.

This course is so arranged that it can be taken as a two-fifths, three-fifths, or five-fifths study for the first semester. Tu., Th.,; M., W., F.,; or M., Tu., W., Th., F., at 12.

2. Part I. Economic Geology. Must be preceded by course 1. Two-fifths study. *First six weeks of the second semester. M., Tu., W., Th., F., at* 12. Assistant Professor CLEMENTS.

Part II. Field Geology. Study of selected areas adjacent to Madison. This course may be taken by students having had course 1 as a five-fifths study. *The last twelve weeks of the second semester. F.,* 2-6, *S.,* 9-1, *and* 2-6. Assistant Professor CLEMENTS and Professor VAN HISE.

3. Systematic Paleontology. *First semester; M., W., F. Hours to be arranged.* Assistant Professor CLEMENTS.

4a. Petrology. The characteristics of rocks and their geological field classification. *Second semester; Tu., Th., at* 9-11.

4b. Microscopic Petrology. The study of rocks as mineral aggregates with the aid of the petrographical microscope. *Second semester; M., W., F.,* 9-11. Professor HOBBS.

5. Graduate Courses. The epigene and hypogene phenomena of physical geology, as seen in the field and in the laboratory, are treated with reference to the laws of energy.

5a. General Physical Geology. Lectures and laboratory work. (Given in 1900-1901.) Professor VAN HISE.

5b. Principles of Metamorphism and the Metamorphic Rocks. Lectures and laboratory work. (Given in 1901-1902.) Professor VAN HISE.

5c. Principles controlling the Deposition of Ores. (Given in 1902-1903.) Professor VAN HISE.

5d. Lake Superior Geology. A systematic study of the iron and copper districts, with special reference to the principles of pre-Cambrian stratigraphy, structural geology, general metamorphism, and the development of ores there illustrated. Accompanied by petrographical work on the specimens and slides used by the United States Geological Survey in the preparation of a series of monographs on the Lake Superior iron and copper districts. (Given in 1902-1903.) Assistant Professor LEITH.

All of these subjects are considered from the the point of view of the investigator. In any one year two of the courses, a, b, c, and d, are given. The courses selected for any year depend upon the needs of the advanced students. Each of the courses runs through the year in such a manner as to be equivalent to a full study for one semester. In 1903-1904 course 5a will be given by Professor VAN HISE; Assistant

Professor LEITH will offer special courses, to be announced later, on pre-Cambrian and structural geology.

6. Graduate work in petrology can be elected by students who have had the necessary preparation.

7. Research Work for Graduates. Research work adapted to the individual applicant is offered. In 1903-1904 this will constitute a regular course.

For this work, besides the ordinary museum material, there are available the very large collections of rocks and slides. (See statement under Geological Museum). To advanced students are assigned sets of this material for study in connection with the general investigations being carried on by the officers of the departments.

A full or double study, as desired by the individual students. Professor VAN HISE, Professor HOBBS, and Assistant Professor LEITH.

8. Geological Seminary. In the Geological Seminary the graduate students have the opportunity to present the results of their studies and investigations. The recent work of the seminary has fallen under three heads: (a) The historical and physical geology of the North American continent, considered by provinces, each student handling one subject under each province; (b) reports upon the present state of knowledge, with emphasis upon recent progress, of general topics, as, for instance, vulcanism, ore deposits, etc.; (c) the results of the personal investigations of the students. *Tuesdays and Thursdays from* 4 *to* 6. Conducted by Professor VAN HISE and Assistant Professor LEITH.

NOTE.—In the year 1903-1904 there will be given a long course in physical geography and physiography of the United States, running through the year. The course in economic geology will be extended through the year. In the course in general geology for first year students in geology (heretofore including both of these subjects, courses 1 and 2 above), physical geography and physiography of the United States will be only incidentally treated, and economic geology will be cut out entirely. The course in general geology for first year students in geology will then cover (1) the elementary principles of geology and physical geography, (2) historical geology, and (3) field geology.

Advanced courses 2, 4, 5, 6, and 7 are adapted for students making geology or mining geology their profession.

MINERALOGY.

PROFESSOR HOBBS.

1. General Course. Prerequisite, a general course in chemistry. Trigonometry should be taken if possible. *First semester; M., Tu., W., Th., F., at* 11. *Second semester; M. Tu., W., Th., F., (a) at* 11; *(b) at, after Easter,* 11-1.
2. Short Course. This course is required of civil engineers in their sophomore year. *Four laboratory hours per week during first semester.*
3. Optical Mineralogy. Lectures, quizzes, and laboratory work with the polarizing microscope. A prerequisite to petrology. *First semester; M. W., F.,* 9-11.
4. Graduate Course in Advanced Crystallography. Individual work arranged with the instructor.

BIOLOGY.

PROFESSOR BIRGE, PROFESSOR HARPER, ASSISTANT PROFESSOR MILLER, ASSISTANT PROFESSOR MARSHALL, ASSISTANT PROFESSOR CHENEY, MR. TIMBERLAKE, MR. ALLEN, MR. JOHNSON, MR. FOX, AND MISS NICHOLS.

1. General Biology. Introductory to both botany and zoology, and required as preliminary to all advanced work in either department. Two recitations or lectures and eight hours' laboratory work a week.

   Lectures, M., W., at 3. Professor HARPER and Professor BIRGE.* For laboratory work the class is divided into two or three sections, each meeting for two hours daily. Assistant Professor MARSHALL, Mr. TIMBERLAKE, Mr. ALLEN, Mr. FOX, and Miss NICHOLS. Quiz divisions are also required to meet once each week. Required of freshmen in general science course, elective in other courses.

   The first semester is devoted to a study of the general principles of biology as illustrated by plants. The second semester is given to zoology. Students can enter the course in either semester.

Zoology.

2. Vertebrate Anatomy. Laboratory work and lectures. *First semester:* the skeleton, muscles, and the viscera; *second semester:* the nervous and vascular systems. *Throughout the year,* 11-1. Assistant Professor MILLER and Mr. JOHNSON.

3. Invertebrate Zoology. A general course in the morphology and classification of invertebrates. *Throughout the year,* 2-4. Professor BIRGE.*

4. Human Physiology. A. Nutrition, respiration, excretion. *First semester; M., W., F., at* 8. B. Motion, nervous system, and sense organs. *Second semester; Tu., Th., at* 8. Textbook, Martin's *The Human Body.* Professor BIRGE.

5. Vertebrate Histology. Laboratory work and lectures. This course should be preceded by course 2. *Full study; first semester,* 9-11. Assistant Professor MILLER.

6. Vertebrate Embryology. This course follows course 5. The development of the frog, chick, and pig during the first four days is studied. Laboratory work and lectures. *Full study; second semester,* 9-11. Assistant Professor MILLER.

7. Advanced work in Histology and Embryology. This course is open to graduate students and such undergraduate students as may wish to carry on their work along special lines. Courses 2, 5, and 6 are prerequisites. Assistant Professor MILLER.

8. Neurology. This course is open to such students as have had courses 2, 5, and 6. The work consists of dissection of the sheep's brain and the human brain, with such lectures as are necessary for the elucidation of the subject. *Second semester; three-fifths study.* Assistant Professor MILLER.

9. Thesis work in Vertebrate Anatomy, Histology, or Embryology. Students who make the course in vertebrate anatomy their major study will take course 2 in their sophomore year, and courses 5 and 6 in their junior year, leaving the senior year free for thesis work. The subject of the thesis should be selected during the junior year, and the preliminary work begun. Assistant Professor MILLER.

10. Entomology. A general course in the anatomy, embryology and classification of insects, with special attention to forms of economic importance. *Full study; first semester.* Assistant Professor MARSHALL.

In 1903-1904 the course in entomology will be divided as follows:

10a. Lectures twice a week.

*In 1902-1903, Assistant Professor MARSHALL.

10b. Laboratory work six hours a week.

These may be taken together as a full study, or separately. Advanced work on special subjects can be arranged.

11. Invertebrate Embryology. The segmentation of the egg, the formation of gastrula and the leading types of metamorphosis in various groups of invertebrates. *Full study; second semester.* Assistant Professor MARSHALL.

12. Research Courses in the Study of Plankton and Invertebrate Zoology. For senior theses, and graduates. Group students in zoology may take their major subject in invertebrate zoology, following courses 1 and 3 by 10. Professor BIRGE and Assistant Professor MARSHALL.

Students can take a major line of study in either invertebrate or vertebrate zoology. Persons intending to teach zoology in high schools should take at least course 3 in addition to course 1.

13. Summer Courses in Zoology. See announcement of Summer Session on later pages.

Botany.

15. Plant Morphology. Course 1 is a prerequisite to this course.

(a) Algæ and Fungi. The morphology of types of the principal groups will be studied in the laboratory. The lectures will give an outline of the development of the different series and their classification and will also discuss problems of research in connection with the different groups. *First semester; M., W., F., at* 2-4. *Lectures Tu., Th., at* 3. Professor HARPER and Mr. ALLEN.

(b) Liverworts, Mosses, Ferns, Equisetum and Lycopods. A continuation of course (a). *Two-fifths study during second semester; M., Tu., at* 2-4. *Lecture Tu., at* 3. Professor HARPER and Mr. ALLEN.

(c) The Flowering Plants. A study of the life histories of a few types of flowering plants, including the phenomena of pollination, fertilization, development of organs and tissues, and discussions of morphological homologies and allied development problems. *Second semester; W., Th., F.,* 2-4. Mr. TIMBERLAKE.

16. Vegetable Histology. Systematic study of the tissues of phanerogams and ferns. Use of reagents and stains, modes of imbedding, section cutting, and mounting. Laboratory guide:

Strasburger's *Practical Botany. Daily, first semester; hours on consultation.* Assistant Professor CHENEY.

17. Physiology of the Flowering Plants. A laboratory course on the special physiology of the vascular plants. *Second semester; three-fifths study.* Professor HARPER.

18. Cytology. General physiology of organisms. Lectures and experimental work on the reproduction, irritability, and nutrition of the cell. Must be preceded by courses 15 or 16, and an ability to read German is desired. *Daily; hours on consultation.* Professor HARPER, Mr. TIMBERLAKE, and Mr. ALLEN.

19. Mycology. Special work on the morphology and classification of the fungi is offered to advanced or graduate students. *Hours on consultation.* Professor HARPER.

20. Botanical Methods. Practice will be given in methods of preparing plant material and of growing various algæ and fungi for use in the class room. Opportunity will also be given for collecting and preserving material for laboratory courses. Open to students who have had courses 1 and 15. *One-fifth study; second semester.* Professor HARPER and Mr. TIMBERLAKE.

21. Research Work. Students whose preparation is adequate may on consultation be assigned special subjects of investigation. Professor HARPER.

22. General Morphology of Plants. An elementary course designed primarily for pharmacy students, but open to others who desire to begin the study of botany. *First semester,* the morphology of fungi, algæ, lichens, mosses, and ıerns. *Second semester,* the form and structure of the organs of seed plants, the identification of selected flowering plants, and the preparation of an herbarium. The course will be supplemented by botanical excursions. *Daily,* 8-10. Excursions on Saturdays. Assistant Professor CHENEY.

23. Trees and Their Characteristics. A course designed for those who desire to acquaint themselves with forest trees. Lectures and laboratory work, with occasional excursions. The course presupposes the equivalent of one semester's work in general botany. *Twice a week throughout the year.* May be taken either semester or both. *Hours to be arranged on consultation.* Assistant Professor CHENEY.

24. Advanced work in Anatomy. Special subjects for original investigation will be assigned to such students as are properly qualified, and who desire to do advanced work. Assistant Professor CHENEY.
25. Plant Pathology. A laboratory course on the diseases of plants. Especial attention is given to the methods of infection, effect on the host plant, etc., of the fungi which cause diseases of garden crops, cereal grains, etc. *Hours on consultation.* Professor HARPER.
26. Bryology. Special work on the morphology and classification of the bryophyta is offered to advanced or graduate students. This course must be preceded by courses 15 or 16. *Hours on consultation.* Elective. Assistant Professor CHENEY.
27. Diseases of Timber Trees. A special course of lectures and laboratory work on the diseases of economically important forest trees, and the causes of decay in timber used for building and other purposes. The lectures may be taken without the laboratory work. *Two-fifths study, second semester. Hours on consultation.* Mr. ALLEN.
28. Summer Courses in Botany. See announcement of the Summer Session on later pages.

BACTERIOLOGY AND HYGIENE.

PROFESSOR RUSSELL AND MR. FROST.

1. General Bacteriology. In this elementary course the bacteria are considered from a biological point of view. It is a prerequisite for specialization in applied lines, as medical, sanitary or agricultural bacteriology. *Lectures or equivalent; M., W., F., at* 11. *First semester. Full study.* Professor RUSSELL and Mr. FROST.
2. Medical Bacteriology. This course, which is especially designed for pre-medical students, considers the bacteria that are especially concerned in the production of disease processes. Course 1 is a prerequisite. *Lectures or equivalent; M., W., F., at* 11. *Full study, second semester.* Mr. FROST.
3. Thesis Work in Bacteriology. Students who desire to select their theses in this department must take course 1 in their junior year or before, and select the subject for their thesis before the close of the junior year. Professor RUSSELL and Mr. FROST.

4. Advanced Work in Bacteriology. Students who have had sufficient preliminary work (courses 1 and 2 or their equivalent) will be assigned special topics for study. Laboratory work and conferences. Professor RUSSELL and Mr. FROST.
5. Research Work in Bacteriology. Opportunity is offered for work in original investigation which may be arranged for on consultation. A reading knowledge of French and German is necessary. Professor RUSSELL and Mr. FROST.
6. Communicable Diseases: Their Cause and Prevention. Weekly lectures of a non-technical character intended primarily for students in other than the general science course. No previous work in science is required. *Second semester, one-fifth study.* (Omitted in 1903-1904.) Mr. FROST.
7. General Hygiene. This is a course of lectures dealing with the hygienic aspects of air, water, and food supplies, and the disposal of sewage. *Second semester; one-fifth study.* Alternates with course 6. Mr. FROST.
8. Biology of Water Supplies. This course is adapted to the needs of students in sanitary engineering. *First semester, full study, lectures and laboratory work.* Required of juniors in sanitary engineering. Mr. FROST.

For courses in dairy and agricultural bacteriology see announcement under College of Agriculture. The Bacteriological Journal Club meets bi-weekly for the review of current bacteriological literature.

MUSIC.

PROFESSOR PARKER AND MR. BREDIN.

The courses in music are open as electives to students in any department of the University who show sufficient musical ability to pursue them with profit, and receive the same credit as similar courses in other departments of the University.

For admission to course 1, no previous knowledge of music is required. Those desiring to take course 2 must be able to read and play simple four-part music. Course 1 will be found useful in strengthening preparation for the courses in Harmony and Counterpoint. Courses 1 and 2, or their equivalent, are required as a preparation for course 6. Students may take the lectures of the second semester of course 7 without having taken those of the first semester.

Students may be admitted to advanced courses on examination.

Special students may substitute private lessons in piano playing or singing for one or more studies on recommendation of the Professor of Music, but without credit toward graduation, except as specified under course 8. See the statement of the School of Music on later pages.

Classes meet in the lecture room, Music Hall.

1. Musical Theory and Choral Practice. *Throughout the year; M., W., at* 5. Mr. BREDIN.
2. Elementary Harmony. *Throughout the year; Tu., Th., at* 4.
3. Advanced Harmony. *First semester; M., W., F., at* 11.
4. Counterpoint. *Second semester; M., W., F., at* 11.
5. Double Counterpoint and Fugue. *Throughout the year; M., W., F., at* 10, subject to change.
6. Musical Composition. *Twice a week throughout the year; hours to be arranged.*
7. History of Music. Lectures. *Throughout the year; Tu., Th., at* 3.
8. Advanced Piano Playing. Senior and junior years only. Hours and credit to be arranged with the instructor and Director of the School of Music, but not to exceed a total of five-fifths for one year.

   Students who are competent may join the University Orchestra, receiving a credit of one-fifth for the work. *One rehearsal a week throughout the year; Sat.,* 11 to 1. Mr. NITSCHKE.

   Students who desire to become connected with the University Military Band should confer with Mr. Nitschke.

MILITARY SCIENCE AND TACTICS.

CAPTAIN CURTIS, U. S. A.

This department of the University is maintained in accordance with State and Federal laws. By the regulations of the University, all the able-bodied male students of the freshman and sophomore classes, and of the first two years of special courses, are required to take military drill.

The work of the department embraces a course in drill regulations, a course of lectures on military subjects and practical instruction in the school of the soldier, company, and battalion, target practice, artillery drill, and signal drill. The class in drill regulations is organized each year, and may be elected by both classes.

All commissioned officers, the sergeant-majors, quartermaster-sergeants, and first sergeants are required to take this course, which continues through the winter. The credit of drill regulations and the lecture course is that of a two-fifths study.

Freshmen who, prior to their entering the University, have received the equivalent of one year's instruction in the University battalion, may, at the discretion of the Commandant, be required to drill one year only; *provided,* that they furnish certificates from the principals of military schools they have attended, or the commanding officers of military companies in which they have served for a year or more as regularly enlisted men or officers, setting forth in detail the military duty performed; and that they take the full course in drill regulations, maintaining a good class standing; except that the Commandant may exercise the further discretion of deferring the required drill of all cadets of such military schools or members of companies to the second or sophomore year. Freshmen or sophomores who, prior to their connection with the University, have served in the army or navy of the United States and been honorably discharged, may receive full credit for drill at the University without further military instruction.

Drills will begin at the opening of the first semester and be held twice a week throughout the year.

Students of the freshman or sophomore classes or first and second year specials, who enter, as candidates, the crews and athletic teams recognized by the athletic council, may be excused from drill when they are regularly elected to membership in such organizations.

When a member of a crew or an athletic team shall be discharged from such crew or team he will report to the Commandant for drill at the next drill succeeding his discharge.

All appointments to office in the companies shall originate in the sophomore class, but officers may be promoted and continued in office during their junior and senior years.

Students excused from drill will be required to take, before graduation, an additional one-fifth study in the academic course for each semester in which they were excused from drill.

The uniform of the regiment is similar to the fatigue or undress uniform of the United States army, and can be obtained in Madison at a cost of $9.50 to $15.00.

Organization.

The organization is that of a regiment of infantry, consisting of two battalions of three or more companies each, a platoon of artillery, a brass band, a trumpet corps, and signal and target detachments. These organizations will be supplied with a full quota of officers. Students will enter the infantry regiment and afterward be specially assigned to the other organizations at the discretion of the Commandant.

Upon graduation, specially qualified students receive from the Governor of Wisconsin state commissions of honorary second lieutenants.

ROSTER OF THE UNIVERSITY CORPS OF CADETS FOR 1902-03.

Commandant.

Captain Charles A. Curtis, U. S. Army, Colonel Wisconsin National Guard.

Cadet Officers.

REGIMENTAL FIELD AND STAFF.

Colonel Leslie W. Beers.
Lieutenant-Colonel Harry C. Johnson.
Major William A. Walters, Inspector.
Captain Fred V. Heinemann.
Captain Walter C. Reinking, Quartermaster.
Second Lieutenant Cullen D. Purple, Aide de Camp.
Sergeant-Major Ray F. Robinson, Regiment.
Drum-Major Stuart E. Washburn, Band.
Chief Trumpeter Herbert A. Le Roy, Field Music.
Sergeant Matthew R. Beebe, Records.

FIRST BATTALION.

Major Irving A. Fish.
First Lieutenant Harold K. Weld, Adjutant.
First Lieutenant Henry A. Cook, Quartermaster.
Sergeant-Major Roland H. Prien.

SECOND BATTALION.

Major Henry J. Otjen.
First Lieutenant Walter H. Richardson, Adjutant.
First Lieutenant Chester A. Hoefer, Quartermaster.
Sergeant-Major Lloyd R. Harlacher.

COMPANY OFFICERS.

Company A.
Captain Ora B. Cahoon.
1st Lieut. Charles A. Gaylor.
2d Lieut. Major E. Wharry.
1st Sergt. Charles M. Rood.

Company B.
Captain Archie L. Persons.
1st Lieut Henry Z. Mitchell.
2d Lieut. Victor R. Griggs.
1st Sergt. Fred S. Pfahler.

Company C.
Captain Edgar A. Goetz.
1st Lieut. William W. H. Findlay.
2d Lieut. Elmer G. Hoefer.
1st Sergt. Frank J. Katz.

Company D.
Captain Fred K. Carrico.
1st Lieut. Andrew J. Fisk.
2d Lieut. Leo M. Cook.
1st Sergt. Walter H. Inbusch.

Company E.
Captain Ralph D. Brown.
1st Lieut. Allen E. Wright.
2d Lieut. Reuben J. Neckerman.
1st Sergt. Albert E. Randall.

Company F.
Captain Hamlet J. Barry.
1st Lieut. William J. Millar.
2d Lieut. Albert W. Foster.
1st Sergt. Herbert S. Inbusch.

SIGNAL CORPS.

Captain Maurice W. Moe, Instructor.
1st Sergt. Richard Q. Roemer.

TARGET DETACHMENT.

Captain Herbert S. Cole, Instructor.
2d Lieut. Fred H. Dorner, Asst. Instructor.
1st Sergt. Ralph T. Craigo.

PHYSICAL CULTURE.

DR. ELSOM, MISS MAYHEW, MISS PARKER, MR. O'DEA, AND STUDENT ASSISTANTS BRADLEY, PETERSON, AND BISHOP.

The Gymnasium is one of the largest and best equipped buildings of the kind in the country. Its size is 200 feet in length by 100 feet in width. On the ground floor are found the offices of the Director and of the Commandant; a large lecture and gun room; the locker-room, containing 900 lockers; the bath rooms, with shower, tub and spray baths; a large natatorium, 20 by 80 feet, and four bowling alleys. On the second floor, in addition to the necessary offices, there is an unobstructed hall, 165 by 98 feet, used for gymnastic exercise and military drill. A complete equipment of the usual developing machines, and gymnastic apparatus

of all kinds is supplied. The third floor contains a large base-ball cage, six hand-ball courts, two running tracks, and two rifle ranges.

Each student on entering the department undergoes a thorough physical examination, in order that his physical condition may be known to the Director, and suitable exercise prescribed. Various strength tests, and measurements are given; the heart, lungs, and eyes are examined, and the utmost caution used in the advice given regarding individual exercise. One examination during each semester is required, the latter demonstrating any improvement or change in the student's physical condition. Anthropometric cards and charts are platted for students when desired.

Systematic class work in gymnastics is required on two days of the week, of all freshmen, sophomores, and special students ranking with these classes. This work consists of vigorous drill with dumb-bells, clubs, bar-bells, etc., besides progressive graded work on the various pieces of gymnastic apparatus, always under the careful direction of competent instructors.

In the scheme of gymnastics, such exercises as are promotive of health, grace, and self-control, are sought for rather than heavy and dangerous athletic performances.

Every facility is provided for track-athletics, base-ball, foot-ball, tennis, aquatics, etc. The University owns the large tract known as Camp Randall, which is fitted up with a large grand stand, a one-fourth and a one-third mile track, and other necessary features.

During the second semester, lectures on the physiology of exercise, personal hygiene, health culture, etc., are given to the freshmen. These lectures are illustrated by various charts, lantern slides, etc., and take the place of the regular gymnasium classes on the days when the lectures are given.

The University is situated on the shores of Lake Mendota, a beautiful sheet of water, which invites to exercise and recreation in boating. The University Boat House Association has erected near the Gymnasium a boat house at a cost of over $4,000.

Gymnastics for Women.

Chadbourne Hall contains a finely-equipped gymnasium for the use of the young women attending the University. The room is two stories high, has a floor space 71 by 40 feet, and is provided with 27 dressing rooms, and 128 lockers. The dressing rooms connect with shower baths supplied with hot and cold water, furnishing ample bathing facilities for those who take gymnastics.

The gymnasium suit requires four yards of double-width (54 in.) dark blue serge, and consists of two pieces, a loose shirt waist and bloomers. The waist has a sailor collar trimmed with narrow white braid. The Butterick pattern may be used. The suit can be obtained here for $5.00.

The apparatus is complete and varied, consisting of chest weights, dumb-bells, wands, bar-bells, etc., besides a complete outfit of Swedish apparatus, and other forms of appliance for development and physical improvement. Music is used in all class drills. The first object of the training for women is that of maintaining and conserving the health, and incidentally there are derived benefits of a very valuable character, such as the acquirement of grace, muscular control, self-reliance and strength.

Each student will undergo a careful physical examination on entering the department, in order that the physical condition may be known, and suitable exercise prescribed for individual cases. A second examination is given during the second semester, in order that the improvements and benefits of the course of exercise may be shown.

The work is required of all freshmen and sophomore students, and all special students ranking with them. Excuse may be granted from the required work on account of physical disability.

The tennis and cycling clubs afford ample opportunity for outdoor exercise and recreation, when the season and weather permit. Games, such as basketball, newcombe, basquette, etc., are practiced indoors during the winter season, and several teams are organized for work in these games.

Course in Teachers' Gymnastics.

A class in theory of physical training and in practice of teaching gymnastics meets once a week during the second semester. The credit given is one-fifth for the semester.

SUMMER SESSION OF THE UNIVERSITY AND SUMMER SCHOOLS.

STAFF OF INSTRUCTION.

E. A. BIRGE, Ph. D., Sc. D., Acting President of the University. Dean of the College of Letters and Science. Director of the Summer Session.

T. S. ADAMS, Ph. D., Assistant Professor of Economics and Statistics.

W. B. CAIRNS, Ph. D., Assistant Professor of English.

J. B. CLARK, Ph. D., Professor of Political Economy.

J. C. ELSOM, M. D., Professor of Physical Culture. Director of the Gymnasium.

N. M. FENNEMAN, Ph. D., Professor of Geology, University of Colorado.

C. R. FISH, Ph. D., Assistant Professor of American History.

G. C. FISKE, Ph. D., Assistant Professor of Latin.

J. C. FREEMAN, LL. D., Professor of English Literature.

LUCY M. GAY, B. L., Assistant Professor of French.

R. A. HARPER, Ph. D., Professor of Botany.

H. W. HILLYER, Ph. D., Assistant Professor of Organic Chemistry.

A. R. HOHLFELD, Ph. D., Professor of German.

F. G. HUBBARD, Ph. D., Professor of the English Language.

VICTOR LENHER, Ph. D., Assistant Professor of General and Theoretical Chemistry.

C. E. MENDENHALL, Ph. D., Assistant Professor of Physics.

W. S. MILLER, M. D., Assistant Professor of Vertebrate Anatomy.

J. C. MONAGHAN, A. B., Professor of Theory and Practice of Domestic and Foreign Commerce.

D. C. MUNRO, A. M., Professor of European History.

P. S. REINSCH, Ph. D., Professor of Political Science.

W. A. SCOTT, Ph. D., Director of the School of Commerce.

F. C. SHARP, Ph. D., Assistant Professor of Philosophy.

E. B. SKINNER, Ph. D., Assistant Professor of Mathematics.

C. F. SMITH, Ph. D., Professor of Greek and Classical Philology.

B. W. SNOW, Ph. D., Professor of Physics.

J. W. STEARNS, LL. D., Director of the School of Education. Professor of Philosophy and Pedagogy.

Susan A. Sterling, M. L., Assistant Professor of German.
A. W. Tressler, A. B., Assistant Professor of Pedagogy. Inspector of High Schools.
C. A. Van Velzer, Ph. D., Professor of Mathematics.
Merrick Whitcomb, Ph. D., Professor of History, Columbia University.
A. R. Anderson, A. B., Assistant in Greek.
H. E. Bradley, A. B., Student Assistant in Gymnastics.
A. R. Crathorne, B. S., Instructor in Mathematics.
M. L. Daggy, Ph. B., Instructor in Rhetoric and Oratory.
W. D. Frost, M. S., Instructor in Bacteriology.
C. H. Handschin, Ph. D., Instructor in German.
H. R. Holmes, Ph. B., Assistant in Physical Culture.
Annie M. Pitman, A. B., Assistant in Latin.
E. C. L. C. Roedder, Ph. D., Instructor in German.
W. O. Sypherd, A. M., Instructor in English.
A. C. Tilton, Ph. D., Instructor in European History.
H. G. Timberlake, M. S., Instructor in Botany.
E. H. Wells, A. M., Assistant in Physical Culture.
G. W. Wilder, Ph. D., Instructor in Physics.

General Statement.

The University of Wisconsin will hold in 1903 its fifth summer session. This session will continue for six weeks, beginning Monday, July 6, and closing Friday, August 14. While the Summer Session of the University includes the Summer School for Teachers, which has been in operation for some years, it is not an enlargement of that school, but has a different purpose. This additional term of the University will provide elementary, advanced, and graduate instruction throughout the range of subjects ordinarily covered by the faculty of the College of Letters and Science.

The Summer Session of the University will meet the wants of teachers and special undergraduates who desire to broaden and deepen their knowledge; of regular undergraduates who desire to shorten their University course; and of graduates who wish to devote a part of their vacation to work for advanced degrees. An important feature of the announcement of many of the departments for the summer session is the provision for special, advanced, and research work adapted to individual students. Thus students who wish to carry on their investigations with more adequate library or

laboratory facilities than their present situation affords, will find here individual guidance and the ample equipment necessary to their research.

Madison is within three hours' ride of Chicago, two and a half hours from Milwaukee, and seven hours from St. Paul. In the summer season low excursion rates to Madison prevail from all points south, southeast, and southwest.

The expenses will be the same, whether the work is done in the Summer Session of the University, in the Summer School, or partly in each.

Terms of Admission.

The requirements for admission are the same for the Summer Session as for the other sessions of the University. (See pp. 66-73.) Teachers are permitted to enter, without examination, such courses of study in the Summer Session as they are prepared to take to advantage.

Students from high schools will be admitted to the elementary courses of the Summer School without special examination. They may also be admitted to University courses for which they are qualified, but University credit will be given only to students who have satisfied the regular entrance requirements of the University.

Fees.

The fees for the Summer Session of the University and the Wisconsin School for Teachers are the same. A general fee of fifteen dollars will be charged.

Laboratory fees will be charged in the various scientific laboratories at rates proportional to those for the regular sessions of the University. (See pp. 47-52.)

COURSES OF STUDY.

Philosophy and Pedagogy.

PROFESSOR STEARNS, ASSISTANT PROFESSOR SHARP, AND ASSISTANT PROFESSOR TRESSLER.

1. Elementary Psychology, *M., Tu., W., Th., F., at* 9. Two-fifths credit. Assistant Professor SHARP.
2. Advanced Psychology. *M., Tu., W., Th., F., at* 8. Two-fifths credit. Assistant Professor SHARP.

3. Logic as Related to Teaching. *M., Tu., W., Th., F., at* 8. Two-fifths credit. Professor STEARNS.
4. History of Education. *M., Tu., W., Th., F., at* 11. Two-fifths credit. Assistant Professor TRESSLER.
5. School Supervision. *M., Tu., W., Th., F., at* 12. Two-fifths credit. Assistant Professor TRESSLER.
6. High School Problems. *M., W., F., at* 9. One-fifth credit. Professor STEARNS.
7. History of Art. *Tu. and Th. evenings at* 8. Lectures. Professor Stearns.

Economics and Commerce.

PROFESSOR ADAMS, PROFESSOR SCOTT, PROFESSOR CLARK, AND PROFESSOR MONAGHAN.

1. Elements of Economic Science. *M., Tu., W., Th., F., at* 8. Two-fifths credit. Professor ADAMS.
2. Money and Banking. *M., Tu., W., Th., F., at* 8. Two-fifths credit. Professor SCOTT.
3. The Austrian Economists. *M., W., F., at* 9. One-fifth credit. Professor SCOTT.
4. The Theory of Prosperity. *Tu., W., Th., F., at* 10. Two-fifths credit. Professor CLARK.
5. Problems in Taxation. *M., Tu., W., Th., F., at* 11. Two-fifths credit. Professor ADAMS.
6. International Commerce. *M., Tu., W., Th., F., at* 12. Two-fifths credit. Professor MONAGHAN.
7. The Consular Service. *Tu., Th., S., at* 9. One-fifth credit. Professor MONAGHAN.

Political Science.

PROFESSOR REINSCH.

1. Elements of Political Science. *M., Tu., W., Th., F., at* 10. Two-fifths credit. Professor REINSCH.
2. Constitutional Law. *M., Tu., W., Th., at* 8. Two-fifths credit. Professor REINSCH.
3. Contemporary Politics. Lectures upon the international relations of Oriental and South American countries. *M., Tu., W., Th., at* 9. Two-fifths credit. Professor REINSCH.
5. Seminary in Political Literature. *W.,* 8 *to* 10. For graduates. Professor REINSCH.

History.

PROFESSOR MUNRO, PROFESSOR WHITCOMB, ASSISTANT PROFESSOR FISH, AND DR. TILTON.

1. Greek History. *M., Tu., W., Th., F., at* 9. Two-fifths credit. Dr. TILTON.
2. Medieval History from 800 to 1300. *M., Tu., Th., F., at* 9. Two-fifths credit. Professor MUNRO.
3. Modern European History from 1789 to 1870. *M., Tu., Th., F., at* 9. Two-fifths credit. Professor WHITCOMB.
4. English History. *M., Tu., W., Th., F., at* 8. Two-fifths credit. Dr. TILTON.
5. American History from 1830 to the Present Day. *M., Tu., W., Th., F., at* 9. Two-fifths credit. Professor FISH.
6. English Constitutional History. *M., F., at* 12. One-fifth credit. Dr. TILTON.
7. The Renaissance. *M., W., at* 11. One-fifth credit. Professor WHITCOMB.
8. The Diplomacy of Expansion, 1820-1860. *M., W., F., at* 10. One-fifth credit. Professor FISH.
9. Seminary in Medieval History: The First Crusade. A critical study of the Council of Clermont and the relations of the crusaders to the Greek Emperor. Open to graduates only. *Tu., Th.,* 10 *to* 11:30. One-fifth credit. Professor MUNRO.
10. Seminary on the French Revolution. A critical study of the *cahiers* illustrating the dissatisfaction of the various social classes with the *ancien régime.* Open to graduates only. *Tu., Th.,* 11:30 *to* 1. One-fifth credit. Professor WHITCOMB.
11. Seminary in United States History. A critical study of the social and political genesis of Massachusetts. Open to graduates only. *Tu., Th.,* 7:30 *to* 9 P. M. One-fifth credit. Professor FISH.
12. The Teaching of History. *W., at* 12. Professor MUNRO.
13. Historical Conference. An informal conference between the instructional staff and graduate students. *M., at* 11.

In addition to the above courses, public lectures will be given each week on special subjects that will be announced later.

Greek.

PROFESSOR SMITH AND MR. ANDERSON.

1. Elementary Greek.* *M., Tu., W., Th., Fr., at* 8. Two-fifths credit. Professor SMITH and Mr. ANDERSON.
2. Homer's Odyssey. *M., Tu., W., Th., F., at* 9. Two-fifths credit. Mr. ANDERSON.
3. Plato's Apology, or two plays of Euripides, or Thucydides VII. Intended for students of the grade of sophomores. *M., Tu., W., Th., F., at* 10. Two-fifths credit. Professor SMITH.
4. Sophocles and Euripides (one play each), or selections from the lyric poets. *M., Tu., W., Th., F., at* 11. Two-fifths credit. Professor SMITH.
5. Greek Seminary. The Agamemnon of Aeschylus. The play will be studied especially from a literary point of view. *W.,* 8 *to* 10. Professor SMITH.

Latin.

ASSISTANT PROFESSOR FISKE AND MISS PITMAN.

1. Catullus. *M., Tu., W., Th., F., at* 8. Two-fifths credit. Miss PITMAN.
2. Latin Composition. *M., W., F., at* 9. One-fifth credit. Miss PITMAN.
3. Illustrated Lectures. Twelve lectures with especial reference to the life and works of Cæsar, Cicero, and Virgil. *Tu., Th., at* 9. One-fifth credit. Miss PITMAN.
4. Teachers' Course. *M., Tu., W., Th., F., at* 10. Two-fifths credit. Assistant Professor FISKE.
5. Latin Satirists of the Empire. *M., Tu., W., Th., F., at* 11. Two-fifths credit. Assistant Professor FISKE.

French.

PROFESSOR OWEN AND ASSISTANT PROFESSOR GAY.

1. Grammar and Elementary French. *M., Tu., W., Th., F.,* 8 *to* 10. Four-fifths credit. Assistant Professor GAY.
2. Readings from modern authors. *M., W., F.,* 10 *to* 12. Three-fifths credit, or, with additional reading, four-fifths. Professor OWEN.

*Especial attention will be given to this class for the sake of teachers of Latin, English, or other languages, who may take the course in order to get a start in Greek.

3. Lectures on Thought and Language Topics. *M., at* 12. Professor OWEN.

Spanish.

ASSISTANT PROFESSOR GAY.

1. Grammar and Elementary Spanish. *M., Tu., W., Th., F., at* 10. Two-fifths credit.

English.

PROFESSOR FREEMAN, PROFESSOR HUBBARD, ASSISTANT PROFESSOR CAIRNS, AND MR. SYPHERD.

ENGLISH LANGUAGE.

1. Study of Prose Style. *M., Tu., W., Th., F.,* 8 *to* 10. Three-fifths credit. Mr. SYPHERD.
2. Modern English Grammar. *M., Tu., W., Th., F., at* 9. Two-fifths credit. Professor HUBBARD.

ENGLISH LITERATURE.

3. Chaucer. *M., Tu., W., Th., F., at* 8. Two-fifths credit. Professor HUBBARD.
4. General Survey of English Literature. *M., Tu., W., Th., F.,* 8 *to* 10. Three-fifths credit. Assistant Professor CAIRNS.
5. American Literature. The New England Poets. *M., W., F., at* 10.
6. Shakespeare. Midsummer Night's Dream, King Henry IV., and Hamlet. *M., Tu., W., Th., F., at* 9. Two-fifths credit. Professor FREEMAN.
7. The English Drama before Shakespeare. *M., W., F., at* 10. One-fifth credit. Mr. SYPHERD.
8. Browning. The interpretation of representative poems. *M., W., F., at* 11. One-fifth credit. Professor HUBBARD.

SUMMER SCHOOL COURSES WITHOUT UNIVERSITY CREDIT.

9. Rhetoric and composition, with direct reference to the teaching of these subjects in high schools. *M., W., F., at* 10. Associate Professor LATHROP.
10. A study of English classics with direct reference to teaching. *M., W., F., at* 11. Professor FREEMAN.

Elocution and Oratory.

MR. DAGGY.

1. Forensics. *M., Tu., W., Th., F.* Two-fifths credit.
2. Elocution and Oratory. *M., Tu., W., Th., F.* Two-fifths credit.

German.

PROFESSOR HOHLFELD, ASSISTANT PROFESSOR STERLING, DR. ROEDDER, AND DR. HANDSCHIN.

1. Elementary Course. Grammar, easy reading, written and oral exercises. For beginners. *M., Tu., W., Th., F.,* 9 *to* 11. Four-fifths credit. Dr. HANDSCHIN.
2. German Conversation. Open to students who have had at least two years of high school work, or an equivalent. *M., Tu., W., Th., F., at* 11. One-fifth credit. Dr. HANDSCHIN.
3. Composition and Grammar Review. *M., Tu., W., Th., at* 8. Two-fifths credit. Dr. ROEDDER.
4. Easy Prose Readings. *M., Tu., W., Th., F., at* 10. Two-fifths credit. Assistant Professor STERLING.
5. The Classical Drama. Interpretation of at least one of Schiller's dramas. *M., Tu., W., Th., F., at* 9. Two-fifths credit. Assistant Professor STERLING.
6. Hauptmann's Die Versunkene Glocke. *Three hours a week.* One-fifth credit. Assistant Professor STERLING.
7. Advanced Readings. The history of German civilization. *M., W., F., at* 10. One-fifth credit. Dr. ROEDDER.
8. Advanced Composition and Conversation. *M., W., F., at* 8. One-fifth credit. Professor HOHLFELD.
9. Survey of Classical German Literature. Lessing, Goethe, and Schiller. *Tu., W., Th., F., at* 9. Two-fifths credit. Professor HOHLFELD.
10. Seminary in Schiller. *Tu., Th., at* 8. Professor HOHLFELD.
11. Teachers' Course. A study of the Report of the Committee of Twelve, and practice work. *Two hours a week.* One-fifth credit. Professor HOHLFELD.
12. Introduction to the historical study of German, based on Behaghel's Die deutsche Sprache. *Three hours a week.* One-fifth credit. Dr. ROEDDER.
13. Middle High German. *Three hours a week.* One-fifth credit. Dr. ROEDDER.

A course of six weekly lectures will be given in English by Dr. HANDSCHIN on the development of the German novel.

Mathematics.

PROFESSOR VAN VELZER, ASSISTANT PROFESSOR SKINNER, AND MR. CRATHORNE.

1. Algebra. A review of the important parts of algebra. The course in algebra is planned with reference to the special needs of high school instructors and those who are preparing for examinations. *M., Tu., W., Th., F., at* 9. Two-fifths credit. Professor SKINNER.

   The equivalent of the algebra of the freshman year, College of Letters and Science, may be obtained by making up some additional work.

2. Geometry. The completion of this course satisfies the entrance requirement of geometry to the University. *M., Tu., W., Th., F., at* 4. Mr. CRATHORNE.

3. Plane Trigonometry and Logarithms. *M., Tu., W., Th., F., at* 10. Two-fifths credit. Professor VAN VELZER.

4. Analytic Geometry. *M., Tu., W., Th., F., at* 2. Two-fifths credit. Mr. CRATHORNE.

5. Calculus. *M., Tu., W., Th., F., at* 3. Two-fifths credit. Mr. CRATHORNE.

6. Theory of Equations. The ordinary properties of equations of the n th degree. *M., Tu., W., Th., F.* Two-fifths credit.

7. Determinants. Elementary properties of determinants with applications to the solution of a set of linear equations. *M., Tu., W., Th., F.* Two-fifths credit.

8. Advanced Analytic Geometry. This course is intended to give an account of modern methods in analytic geometry. Courses 4 and 5 are prerequisites. *M., Tu., W., Th., F.* Two-fifths credit.

9. Differential Equations. A practical course in which much attention is paid to the solution of examples. *M., Tu., W., Th., F.* Two-fifths credit.

10. Invariants. This course will be given by lectures based upon Weber's Lehrbuch der Algebra. It is intended to include the subjects of in and co variants. *M., Tu., W., Th., F.* Two-fifths credit.

11. Geometric Function Theory. *M., Tu., W., Th., F.* Two-fifths credit.

12. Theory of Numbers. *M., Tu., W., Th., F.* Two-fifths credit.

Of courses 6 to 12 only four will be given.

Physics.

PROFESSOR SNOW, ASSISTANT PROFESSOR MENDENHALL, AND DR. WILDER.

1. General Lectures. *M., Tu., W., Th., F., at* 5. One recitation by the class in smaller sections at hours to be arranged. Two-fifths credit. Dr. WILDER.

   In the summer session it is designed to complete in three years the year's work of course 1 in physics, taking electricity and magnetism during the summer of 1903, acoustics and optics in 1904, and mechanics and heat during 1905. A knowledge of plane trigonometry is required for registration.

2. Introductory Laboratory Practice. This is the equivalent of the regular sophomore laboratory work given during the rest of the year and is designed to accompany course 1. *Twenty hours per week;* a smaller number of hours may be taken if desired. One-fifth credit for each thirty hours of work performed. Assistant Professor MENDENHALL and Dr. WILDER.

3. Theoretical Physics. These lectures will vary from year to year, completing in four years the ground covered by courses 2 and 4 under Departments of Instruction. In 1903 heat and light will be given. *M., Tu., W., Th., F., at* 12. Two-fifths credit. Assistant Professor MENDENHALL.

4. Advanced Laboratory Practice. During the summer of 1903 the work will be devoted principally to heat and light, and will be designed to accompany course 3. *Twenty or thirty hours per week, at* 8. One-fifth credit for each thirty hours of work performed. Assistant Professor MENDENHALL.

5. Thesis Work. *Fifty hours per week will be necessary to complete the course.* Assistant Professor MENDENHALL.

6. Graduate Research. Professor SNOW and Assistant Professor MENDENHALL.

SUMMER SCHOOL COURSES WITHOUT UNIVERSITY CREDIT.

7. Lectures. A course of lectures will be given daily, except Saturday, at 12, upon the subjects of mechanics and heat, electricity and magnetism, acoustics, and optics. Professor SNOW.

8. Elementary Laboratory Practice. The completion of courses 7 and 8 will be accepted as the requirement in physics for entrance to the University. *M., Tu., W., Th., F., S.*, 8 *to* 1. Dr. WILDER.

Chemistry.

ASSISTANT PROFESSOR HILLYER AND ASSISTANT PROFESSOR LENHER.

1. General Chemistry. *Laboratory work two hours per day.* Three-fifths credit for lectures and laboratory work. Professor DANIELLS.
2. Qualitative Analysis. Credit according to amount of work done. Professor DANIELLS and assistant.
3. Quantitative Analysis. A laboratory course in which study is made of the gravimetric and volumetric methods used in quantitative analysis. Credit according to amount of work done. Assistant Professor LENHER.
4. Research Work in Inorganic Chemistry. Opportunity is afforded to advanced students for research work in inorganic chemistry. Credit according to amount of work done. Assistant Professor LENHER.

10. Organic Chemistry. *Lectures daily except Saturday; laboratory work two hours a day.* Four-fifths credit. Assistant Professor HILLYER.

Students who have had course 4 or its equivalent may take any of the following courses offered by Assistant Professor HILLYER.

11. The Aromatic Group of Compounds. *Lectures daily except Saturday; laboratory work two hours daily.* Four-fifths credit.
12. Ultimate Analysis of Organic Compounds. Credit according to work done.
13. Special Chapters in Organic Chemistry. *Two lectures and three meetings a week for reports on topics.* Three-fifths credit.
14. Research Work in Organic Chemistry. *Two hours' laboratory work daily.*

Courses in physical chemistry will be offered in the session of 1904.

Geology and Physical Geography.

PROFESSOR FENNEMAN.

1. Physiography. Designed for teachers of physical geography who desire to study the subject in the field, and for students wish-

ing organic rather than historical geology. *Lectures M., T., W., Th., F.; excursions two or three times a week.* Two-fifths credit.

2. Physiography of the United States. For teachers of physical geography, and general students of geology. *Lectures M., T., W., Th., F.; excursions two or three times a week.* Two-fifths credit.

The excursions include trips to Devil's Lake, the Baraboo Ranges, the Driftless Area, and Blue Mounds.

Anatomy.

ASSISTANT PROFESSOR MILLER.

1. Mammalian Anatomy. *Laboratory work daily,* 11 *to* 1. Three-fifths credit.
2. Histology. *Lectures M., W., F., at* 9. *Laboratory hours M., W., F.,* 10 *to* 11; *Tu., Th.,* 9 *to* 11. Three-fifths credit.
3. Modern Laboratory Methods. For advanced and graduate students. *Laboratory hours M., Tu., W., T., F.,* 11 *to* 1.

Botany.

PROFESSOR HARPER AND MR. TIMBERLAKE.

1. General Botany. *Lectures M., W., Th., at* 9: *laboratory work daily: Tu., F.,* 9 *to* 11; *M., W., Th.,* 10 *to* 11. Professor HARPER and Mr. TIMBERLAKE.
2. Fungi. *M., Tu., W., lectures and laboratory work.* Professor HARPER and assistant.
3. Algæ. *Laboratory work, W., Th., F.* May be taken in connection with course 2, the two together giving a three-fifths credit. Professor HARPER and assistant.
4. Morphology of the Flowering Plants. *Two lectures a week; laboratory work daily.* Mr. TIMBERLAKE.
5. Physiology of the Cell. Research work for advanced and graduate students. Professor HARPER and Mr. TIMBERLAKE.

Bacteriology and Hygiene.

MR. FROST.

1. Public Health. Six lectures, open to the general public.
2. Elementary Bacteriology. For teachers and students who do not expect to specialize in the subject. *Lectures M., Tu., W., Th., F.; laboratory work ten hours a week.* Three-fifths credit.

3. Advanced, or Thesis Work. Seniors may begin thesis work in this course.

Physical Culture.

DR. ELSOM, MR. BRADLEY, MR. WELLS, AND MR. HOLMES.

During the summer session, all students of the University will be allowed the use of the Gymnasium without charge. A fee of 50 cents for lockers will be required.

Several courses in gymnastics are offered, as follows:—

Light Gymnastics. Instruction and practice in various gymnastic drills, in free movements, and with dumb-bells, wands, and Indian clubs; methods of conducting classes, setting-up exercises, and the lighter gymnastics.

Heavy Gymnastics. Horizontal and vaulting bars; horses, bucks, parallel bars, flying and traveling rings, trapeze; tumbling, simple and advanced; jumping, etc.

Swimming. Daily classes will be held. The large natatorium gives admirable opportunities for this course.

For regular attendance at four classes per week a credit of one-fifth (or one semester's work) will be given to those who desire to make up this work during the summer. The classes are open also to any who desire to improve their own physical condition by means of systematic exercise. Separate classes for women will be given, the gymnasium being for their exclusive use on certain days. The natatorium is open daily for their use.

NORMAL COURSE.

In addition to the above, a Normal course in gymnastics is offered those who propose to fit themselves as teachers of physical education in schools, normal schools, colleges, etc. This course includes:

a. Lectures on the theory and physiology of exercise.
b. Lectures on First Aid to the Injured.
c. Instruction in all forms of practical gymnastics, methods of conducting classes, etc.

The Normal classes are open to men and women. Further information may be had by addressing the Director of the Gymnasium.

THE WISCONSIN SUMMER SCHOOL.

The work of the Summer School is consolidated with that of the Summer Session. The courses of study formerly given in the Summer School are included in the Summer Session and will be found

announced under the appropriate departments of study on preceding pages. The terms of admission to the school remain as heretofore, and the fee is the same as that for the Summer Session. The Summer School courses will be found adapted, as heretofore, to recent high school graduates who intend to enter the University; to University and college students who expect to teach and desire to review the studies which they will be called upon to teach; to teachers who wish to study the principles of teaching and still further prepare themselves in the branches in which they are giving instruction; to principals and superintendents who desire aid to the better understanding of the theory and practice of their work. Persons who intend to take the state examinations for teachers will also find means of completing their preparation.

SUMMER SCHOOL FOR ARTISANS AND APPRENTICES.

This school of shopwork and laboratory practice has been established for the benefit of machinists, carpenters, or sheet-metal workers; stationary, marine, or locomotive engineers; shop foremen and superintendents; superintendents of waterworks, electric light plants, power stations, factories, large office and store buildings in cities, and for young men who wish to qualify themselves for such positions. The session is six weeks in length and extends from July 6 to August 14. The tuition fee is $15, to which is added small laboratory and shop fees.

WISCONSIN SUMMER SCHOOL FOR LIBRARY TRAINING.

The Wisconsin Free Library Commission announces that the ninth annual session of the Summer School for Library Training will be held in Madison, as a department of the Summer Session of the University of Wisconsin, from June 1 to July 25, 1903.

The tuition will be $10 for students from Wisconsin, and $15 for others.

The regular elementary course will be given this year. A second supplementary course, open to students who have completed the elementary work, will be offered in 1904, or as soon as suitable quarters are provided. The number of students for the 1903 session will be limited, and preference will be given to applicants from Wisconsin. The course is intended for librarians of small libraries and assistants in larger libraries. The methods discussed will be those adapted to such libraries, and no comparative work will be attempted. Special attention will be given to the simple records and economical devices necessary where the funds are limited.

No one will be accepted as a student who has not a high school education or its equivalent. Only those who have had experience in library work, hold library positions, or are under appointment to positions in Wisconsin libraries, will be received. An apprenticeship of six months in an accredited library is considered essential to good work in the summer school.

It is the purpose of the school to raise the standard of library service in Wisconsin, by offering to librarians an opportunity to study methods adapted to small libraries and to come into touch with the best in the library movement. No attempt is made to train inexperienced people for general library work. A library school course of one or two years is necessary for thorough equipment for librarianship.

The course is planned to fill the time of the student eight hours a day five days a week, for eight weeks. Two or three hours each day are devoted to lectures, and the remainder of the time is spent in practice work on the model library owned by the Commission. An examination will be given at the end of the course, and certificates granted to those whose work is satisfactory.

For further information address the Wisconsin Free Library Commission, Madison, Wis.

SPECIAL SCHOOLS ORGANIZED UNDER THE COLLEGE OF LETTERS AND SCIENCE.

SCHOOL OF ECONOMICS AND POLITICAL SCIENCE.

Staff of Instruction.

E. A. BIRGE, Ph. D., Acting President of the University.
R. T. ELY, Ph. D., LL. D., Director, and Professor of Political Economy.
B. H. MEYER, Ph. D., Professor of the Institutes of Commerce.
J. C. MONAGHAN, M. A., Professor of the Theories and Practice of Domestic and Foreign Commerce.
D. C. MUNRO, A. M., Professor of European History.
J. B. PARKINSON, A. M., Vice-President of the University and Professor of Constitutional and International Law.
P. S. REINSCH, Ph. D., Professor of Political Science.
W. A. SCOTT, Ph. D., Director of the School of Commerce; Professor of Economic History and Theory.
F. J. TURNER, Ph. D., Director of the School of History; Professor of American History.
T. S. ADAMS, Ph. D., Assistant Professor of Economics and Statistics.
VICTOR COFFIN, Ph. D., Assistant Professor of European History.
F. C. SHARP, Ph. D., Assistant Professor of Philosophy.
S. E. SPARLING, Ph. D., Assistant Professor of Political Science.
H. C. TAYLOR, M. S., Instructor in Commerce.
M. O. LORENZ, Ph. B., Assistant in Economics.
JEROME DOWD, A. M., Resident Lecturer in Sociology.
J. A. HOBSON, Special Lecturer in Economic Theory.
T. IYENAGA, Ph. D., Resident Lecturer in Oriental Politics.
J. D. BARNETT, A. B., University Fellow in Sociology.
J. E. BOYLE, A. M., Fellow in Sociology.

ROSA M. PERDUE, A. M., Fellow in Sociology.
J. G. ROSEBUSH, A. M., University Fellow in Economics.

Only the names of those most closely associated with the work of this school are mentioned.

General Statement.

The purpose of the school is to afford superior means for systematic and thorough study in economics, political and social science, and history. The courses are graded and arranged so as to meet the wants of students in the various stages of their progress, beginning with elementary and proceeding to the most advanced work. They are also designed to meet the needs of different classes of students; as, for instance, those who wish to enter the public service, the professions of law, journalism, the ministry, or teaching, and those who wish to supplement their legal, theological, or other professional studies with courses in economics, social science, or history. Capable students are encouraged to undertake original investigations and assistance is given them in the prosecution of such work through seminaries and the personal guidance of instructors. A means for the publication of the results of investigations of merit and importance is provided in the University Bulletins. (See p. 42).

The studies offered by the school are elective in all the courses of the University, and are especially suitable for the students in the civic-historical course. The graduate work of the school may lead to the master's degree in not less than one year, and to the doctor's degree in not less than three years. Among the subjects offered by the school, any one of the following may constitute a major in the work for a higher degree:

Economics, political science, or sociology.

Any one of the following may constitute a minor:

Economics, political science, sociology, statistics, jurisprudence (including public law and historical jurisprudence), or administration.

The work of this school has the following distinct but related aims:

1. To provide instruction in economics, sociology and the different political sciences, for undergraduates in all the courses of the University.

2. To provide advanced and graduate work in the sciences falling within its field.

3. To assist and encourage the development of these sciences.

4. To provide special training courses for various practical pursuits.

5. To supplement the work of the College of Law, the two departments together providing thorough instruction in both public and private law.

Special attention is here called to the fact that graduates who are pursuing the law course may prepare to take their master's degree at the same time with the degree in law by completing the equivalent of two full studies during one year's work. Graduates of the College of Law are encouraged to devote an additional year to broadening out their training in economics, politics, and jurisprudence. While all the courses offered by the school would be helpful to a student of law, attention is specially called to the work in public law and in general and historical jurisprudence, as well as course 18 in economics, as contributing most directly to a technical preparation.

Courses in other departments may be advantageously combined with those offered in the school. Especial attention is called to the large number of related courses in philosophy and ethics, and also to the considerable number of journalistic courses in the department of rhetoric and oratory.

Candidates for the degree of Doctor of Philosophy in this school are required to present in their principal subject the equivalent of at least two full graduate courses during two years; in their first subordinate the equivalent of at least one such course during two years; and in their second subordinate the equivalent of at least one such course during one year.

Candidates for the master's degree must present in their principal subject the equivalent of at least two full graduate courses during one year; and in their subordinate subject the equivalent of at least one such course.

The University issues a special circular of this school which may be obtained by application to the Registrar or to Dr. R. T. Ely, Director.

SCHOOL OF HISTORY.

Staff of Instruction.

E. A. Birge, Ph. D., Acting President of the University.
F. J. Turner, Ph. D., Director, and Professor of American History.
D. C. Munro, A. M., Professor of European History.
Victor Coffin, Ph. D., Assistant Professor of European History.
C. R. Fish, Ph. D., Assistant Professor of American History.
A. C. Tilton, Ph. D., Instructor in European History.
G. C. Sellery, Ph. D., Instructor in European History.
U. B. Phillips, Ph. D., Instructor in History.
R. C. Clark, A. M., Fellow in American History.
Florence B. Mott, A. B., Fellow in European History.
Robert W. Haight, B. L., University Scholar in American History.
Louis J. Paetow, B. L., University Scholar in European History.

General Statement.

The School of History, established in 1900, occupies a suite of rooms in the new Library Building of the State Historical Society and the University. Utilizing this great collection of books and manuscript sources for historical study, the school offers undergraduate and graduate courses so arranged as to provide a comprehensive general knowledge of European and American history. Its fundamental purpose is to develop in the student the power to use critically and constructively the historical method. The school is based on the belief that familiarity with history and with the historical method of study is an essential element of a liberal education, promotes more intelligent citizenship, and is important in the special training for such professions as the law, journalism and the civil service. In its more special work the school offers advanced courses leading to the master's and doctor's degrees, and prepares students for the teaching of history and for historical investigation. Training in original research is given by means of seminaries and by special courses in palaeography, diplomatics, historiography and historical bibliography and criticism. An unusually complete foundation is provided in European history, with numer-

ous advanced courses, for which the libraries afford material. In American history the aim is to give a thoroughly continental treatment to the subject. For the study of the interior of the United States, exceptional opportunity is afforded by the unique collections of the State Historical Society of Wisconsin and by special courses on western history. Particular attention is given to the study of the evolution of the various sectional groupings—social, economic, and political—in the history of the United States, and to the physiographic factors in American development.

Undergraduate Study.

The general undergraduate courses of the University afford large opportunities for historical study. Elementary work in history is prescribed in the classical and English courses, while the freedom of election allowed in the junior and senior years leaves students free to devote as much time as they desire to history, either as a general elective or as the central subject of study. Together with economics and political science, history is one of the fundamental subjects in the civic-historical course, a four-year course which is designed to afford a liberal undergraduate training with emphasis upon the studies especially adapted to the promotion of good citizenship. This course leads to the degree of Bachelor of Letters. For the prescribed studies, see p. 86.

The University also offers an undergraduate course in commerce, in which history is one of the required subjects of the first three years; and special courses preparatory to journalism, public service, charitable work and statistical employment. These special courses are open to students at the beginning of the junior year, and lead to the master's degree after three years of satisfactory work; in all of them certain courses in history are recommended or prescribed. For a full account of these courses, see the special announcements of the School of Commerce and the School of Economics and Political Science.

Graduate Study.

The courses in the School of History are open to graduates of any college or university of good standing, whether they enter as candidates for higher degrees or for less closely specialized study. The University confers the doctor's and master's degrees upon terms which are stated on pp. 58-59. History may be presented as a major or minor subject for the doctor's degree, and either American or

European history may be taken as a major or minor for the master's degree.

Of the University fellowships (see p. 60) one is permanently assigned to American history and one to European history. Applications should be in the hands of the President of the University before May 1. There are also two graduate scholarships, one in American and one in European history, of the annual value of $200 each. The courses offered by the school are described on pp. 106-111.

A special circular of the school, describing the work and the exceptional library collections at Madison, may be obtained by application to the Registrar or to the Director of the school.

SCHOOL OF COMMERCE.

Staff of Instruction.

E. A. BIRGE, Ph. D., Acting President of the University.
W. A. SCOTT, Ph. D., Director, and Professor of Economic History and Theory.
E. E. BRYANT, Dean of the College of Law.
STORM BULL, M. E., Professor of Steam Engineering.
V. COFFIN, Ph. D., Assistant Professor of European History.
W. F. GIESE, A. M., Assistant Professor of Romance Languages.
E. KREMERS, Ph. G., Ph. D., Professor of Pharmaceutical Chemistry and Director of the School of Pharmacy.
H. B. LATHROP, A. B., Associate Professor of English Literature.
V. LENHER, Ph. D., Assistant Professor of General and Theoretical Chemistry.
B. H. MEYER, Ph. D., Professor of the Institutes of Commerce.
J. C. MONAGHAN, A. B., Professor of the Theory and Practice of Domestic and Foreign Commerce.
D. C. MUNRO, A. M., Professor of European History.
P. S. REINSCH, Ph. D., LL. B., Professor of Political Science.
E. B. SKINNER, Ph. D., Assistant Professor of Mathematics.
S. E. SPARLING, Ph. D., Assistant Professor of Political Science.
H. L. SMITH, A. B. LL. B., Professor of Law.
B. W. SNOW, Ph. D., Professor of Physics.
SUSAN A. STERLING, M. L., Assistant Professor of German.
FLORENCE E. ALLEN, M. L., Instructor in Mathematics.
A. C. L. BROWN, Ph. D., Instructor in English.
E. A. COOK, B. L., Instructor in English.
MAY HUNT, M. L., Instructor in English.
M. O. LORENZ, A. B., Assistant in Economics.
OTTO PATZER, B. L., Instructor in French.
U. B. PHILLIPS, Ph. D., Instructor in History.
E. C. L. C. ROEDDER, Ph. D., Instructor in German.
H. C. TAYLOR, Ph. D., Instructor in Commerce.

Purpose of the School.

The purpose of this school is to supply facilities for the training of young men who desire to enter business careers, especially in such fields as domestic and foreign commerce and banking, or branches of the public service, like the consular, in which a knowledge of business is essential. The demand for well-trained men in the business world is already large, and is certain to increase rapidly in the future. The commercial side of every great business establishment offers wide scope for the best training which young men can secure in schools of this sort. The same may be said of the banking business and of the various specialized industries which have developed in the general field of commerce. American business houses are now establishing branches in foreign countries, and the number of such establishments is certain to increase in the future. For the conduct of these foreign houses a special kind of skill and training is required, which can best be secured in schools of this sort. Persons who take charge of these departments of business need to know the language of the country in which they operate, the character of the wants of the people, the business methods of foreign countries, etc.

A carefully arranged curriculum has been prepared for this school, the object of which is to combine a thorough general education with such technical training for commercial pursuits as it is possible for a school to impart. The course of study extends throughout four years, and leads to a bachelor's degree. The number of required studies in the course is larger than in the other regular courses in the College of Letters and Science of the University, and includes courses in mathematics, chemistry, physics, mediæval, modern and American history, industrial history, history of commerce, commercial geography, money and banking, the various modern languages, economics, commercial law, and commercial products. In addition there are several groups of technical courses which are available for the election of students and which lead to particular lines of business. Prominent among these are the groups preparatory to the banking business and the consular service. The school also offers limited opportunities for election from the numerous courses of study given in the various departments of the University.

Requirements for Admission.

Students will be admitted to this school on the same conditions as those imposed for entrance to the civic-historical, general sci-

ence, modern classical, or engineering courses of the College of Letters and Science. See page 70.

Persons twenty-one years of age, who are not candidates for a degree, and who wish to take special studies, are permitted to enter as adult special students upon giving satisfactory evidence that they are prepared to profit by the courses desired.

Students who have completed the freshman year in any of the courses of the College of Letters and Science in the University of Wisconsin or in any other institution of similar grade may be admitted to the sophomore year of this school, provided they make up the required work of the freshman year which they have not had. Transfers of students in the junior and senior years of the College of Letters and Science to the corresponding years in this school will not be practicable. Transfers, however, will always be permitted on condition that all the work required of students in the School of Commerce be made up before graduation.

Students who have satisfied all the requirements for entrance, but who do not wish to be candidates for the degree, will be admitted to any of the courses of this school for which they are properly prepared. Most of the courses of this school will also be open to the election of students in other departments of the University.

PLAN OF THE COURSE OF STUDY.

The studies of the school will be described in three groups:

I. Those required of all students, no matter what business they desire to enter.

II. Specially arranged and correlated electives leading to the particular business which the student intends to enter.

III. Free electives chosen for the purposes of general culture.

I. Required Studies.

The courses belonging to this group are of three sorts:—

(a) Those needed as a foundation or preparation for more technical courses which are to follow. Under this head fall the courses in trigonometry, chemistry, physics, mediæval, modern and American history, and economic geography. Trigonometry is needed in the study of physics; chemistry is essential to the study of the commercial products and their adulterations; and physics lays the foundation for the study of the generation and transmission of power, materials of construction, etc. The courses in history and economic geography are essential to the successful study of the subjects enumerated under (b), and they are also of direct practical

advantage in extending the student's horizon and in giving him such an acquaintance with national habits and characteristics, and such skill in the interpretation of men and events as are essential to the highest success in business.

(b) This group includes a number of courses designed to acquaint the student with the structure of the business and commercial world, and with the methods of conducting modern business enterprises. Under this head fall the courses in the industrial history of England, the history of commerce, business forms and accounts, transportation, banking and the mechanism of exchange, business organization and management, commercial law, and economics.

(c) The studies belonging to this group are as essential to the general equipment of the business man, no matter what particular branch of business he pursues, as those mentioned under (a) and (b). It includes German, French and Spanish. In one of these languages, at least, the student must acquire such facility in reading, speaking and writing as will enable him successfully to conduct business in the countries in which the language he has learned is spoken. An opportunity to elect a second language is open to students after the freshman year. For the coming year, besides the above named languages, Italian is available for such election. This group also includes a series of graded courses in the study of English, designed to enable the student to use his mother tongue fluently and correctly. It includes also a course in the generation and transmission of power, designed to give the business men who graduate from this school a knowledge of the natural sources and limitations of water, steam, and electric power, and of the important place which these physical agencies occupy in the successful conduct of business enterprises.

A careful technical study of some group of products is also required of all students. So far as possible, each one will be allowed to select the group in which he is most interested and which will best fit him for the business he expects to follow. As an indispensable aid to studies of this sort a commercial museum is being accumulated. The University already possesses a collection of about five thousand economic plants, with samples of the products into which they enter and materials for the illustration of the processes of their manufacture, and the beginnings of a valuable chemical collection which will be made the basis of a technical study of the most important chemical industries. For the coming year two courses will be available for election based upon these two collec-

tions respectively. Other courses along this line will be offered as our commercial museum grows.

II. Technical Electives.

In addition to the studies enumerated above and required of all students, groups of courses are arranged extending throughout the junior and senior years and designed to furnish special preparation for particular lines of business. Each student is required to elect one of these groups. The two following, preparatory to the business of banking and the consular service respectively, may be cited as typical:—

The first mentioned group consists of the following courses, a full description of which may be found on pp. 94-98. (a) The Elements of Money and Banking (Economics 7); (b) The History of the Currencies of the Chief Modern Nations (Commerce 3); and (c) Corporation Finance and Securities (Commerce 21).

The consular group consists of the following courses, a full description of which may be found on pp. 96-105: (a) International Law (Political Science 18); (b) Commercial Geography of Europe (Commerce 10d); (c) History of Diplomacy (History 21); (d) History and Characteristic Features of the Consular Services of the chief foreign countries (Commerce 23a); (e) The Consular Service of the United States (Commerce 23b).

III. Free Electives.

From three to five hours per week, beginning with the second semester of the sophomore year and extending throughout the junior and senior years, will be available to the students of this school for free electives. A large number of courses in the various departments of the University will be open to them, and they will be urged to make such selections as will contribute most to the increase of their general culture and to the extension of their knowledge along lines not represented in the required work of the school.

Arrangement of Studies.*

The arrangement of studies for the academic year 1902-1903 is as follows (the figures indicate the number of hours per week):

*Some modifications in this arrangement are contemplated and will be announced in a special circular issued later in the year.

FRESHMAN YEAR.

First Semester: Economic Geography 4 or American History 4;† German, French or Spanish 4; English 3; Trigonometry 2; Chemistry 3; Drill and Gymnastics 2.

Second Semester: Economic Geography 4 or American History 4; Economic History of England 2; Language continued 4; English 3; Chemistry 3; Drill and Gymnastics 2.

SOPHOMORE YEAR.

First Semester: History of Commerce 2; Mediæval History 3; Business Organization and Management 2; Language continued 2; English 2; Physics 5; Drill and Gymnastics 2.

Second Semester: Accounting and Auditing 2; Elementary Economics 3; Modern History 3; Language continued 2; Physics 5; Elective 2; Drill and Gymnastics 2.

JUNIOR YEAR.

First Semester: Money and Banking 3; Transportation 2; Generation and Transmission of Power 3; Language continued 2; Technical Elective 3; Free Electives 5.

Second Semester: Commercial Law 3; Transportation 2; Nineteenth Century History 3; Language continued 2; Technical Elective 3; Free Electives 5.

SENIOR YEAR.

First Semester: Commercial Law 2; Materials of Commerce 3; Language continued 2; Thesis 2; Technical Elective 3; Free Electives 6.

Second Semester: Commercial Law 2; Materials of Commerce 3; Language continued 2; Thesis 2; Technical Elective 3; Free Electives 6.

DEPARTMENTS OF INSTRUCTION.

Economic History, Geography and Commerce.

For detailed information regarding these courses see p. 96.

1. The Economic History of England. Two-fifths credit. *Lectures on Tu., Th., at* 8. Dr. TAYLOR.
2. The History of Commerce.
   a. The development of the world's commerce from ancient times to the Napoleonic era. *Lectures and assigned readings. First semester; Tu., Th., at* 9. Professor MEYER.

†Students who take Economic Geography the first semester will take American History the second and vice versa.

b. Commercial Policies. A study of Commercial Treaties and tariff history since the Napoleonic era. Lectures, assigned readings and topics. *Second semester; M., W., F., at* 10. Professor MEYER.

3. Currency History. *Second semester; M., W., F., at* 8. Professor SCOTT.

10. Commercial Geography.
   a. Introductory course. *Repeated each semester; M., Tu., W., Th., at* 12. Dr. TAYLOR.
   b. Agricultural Industries. *Second semester; Tu., Th., at* 10. Dr. TAYLOR.
   d. The Commercial Geography of Europe. *First semester; Tu., Th., at* 9. Professor MONAGHAN.

11. Accounting and Auditing. *Second semester; W., F., at* 8. Professor MONAGHAN, assisted by special lecturers.

15. Transportation and Communication. *Throughout the year; Tu., Th., at* 10. May be elected by semesters. Professor MEYER.

18. Materials of Commerce.
   b. Chemical. *One lecture per week with two laboratory periods.* Professor KREMERS.

21. Corporation Finance and Securities. *Second semester; Tu., Th., at* 8. Professor MEYER.

22. Business Organization and Management. *First semester; Tu., Th., at* 10. Assistant Professor SPARLING.

23. Consular Service.
   a. Foreign Consular Services. *First semester; M., W., F., at* 9. Professor MONAGHAN.
   b. The Consular Service of the United States. *Second semester; M., W., F., at* 9. Professor MONAGHAN.

30. Seminaries. Professors SCOTT, MONAGHAN, and MEYER.

Economics.

For detailed information regarding these courses see p. 94.

1. The Elements of Economic Science. *Repeated each semester; M., W., F., at* 8 *and* 9. Mr. LORENZ.

7. The Elements of Money and Banking. *First semester; M., W., F., at* 8. Professor SCOTT.

11. Insurance. *First semester; Tu., Th., at* 11. Professor MEYER.

Political Science.

2. Elementary Law. *First semester; M., W., F., at* 8. Professor REINSCH.

5. Commercial Law.
   a. The law of real and personal property, contracts, sales, torts, and procedure. *Second semester; M., W., F., at* 8. Professor REINSCH.
   b. The law of corporations, partnership, agency and bankruptcy. *First semester; two hours per week.* Dean BRYANT and Professor SMITH.
   c. The law of negotiable paper, bailments, carriers, insurance, and patents. *Second semester; two hours per week.* Dean BRYANT and Professor SMITH.

18. International Law. *First semester; M., W., F., at* 10. Professor PARKINSON.

History.

For detailed information see pp. 106-111.

3. Mediæval History. *First semester; M., W., F., at* 11. Professor MUNRO and assistants.
4. Modern European History. *Second semester; M., W., F., at* 11. Assistant Professor COFFIN and assistants.
5c. American History. A general survey, with emphasis on political history. *Repeated each semester; M., Tu., W., Th., at* 12. Dr. PHILLIPS.
9. History of Europe in the Nineteenth Century, 1815-1900. *Second semester; M., W., F., at* 10. Assistant Professor COFFIN.
19. Diplomatic History of the United States. *Throughout the year; Tu., Th., at* 10. Professor TURNER and Assistant Professor FISH.
21. Diplomatic History of Modern Europe. *Second semester; Tu., Th., at* 10. Assistant Professor COFFIN.

English.

For detailed information regarding these courses see p. 132.

1. Freshman English. English prose style. Composition. *Three hours per week throughout the year.* Mr. COOK.
2. Rhetoric and Composition. A continuation of course 1. *Tu., Th., at* 8. Professor LATHROP and Mr. BROWN.

Foreign Languages.

For information regarding these courses see pp. 120-130.

The German, French and Spanish departments of the University each offers four special courses for students of the School of Commerce. The course for freshmen in each subject occupies four hours

per week for the year, and those for sophomores, juniors and seniors two hours per week for each year. The freshman course in German presupposes two years of preliminary work, but the French and Spanish courses for the same year require no previous preparation. Practice in conversation, composition and reading is required in each of the courses, and the work for each year is graded to correspond with the advancement of the student. Special attention is given to business forms and terms, and each student is expected before graduation to have acquired a practical mastery of one of these languages for business purposes.

Mathematics.

2c. Trigonometry. *First semester; twice a week.* Assistant Professor SKINNER and Miss ALLEN.

Physics.

1. General lectures and introductory laboratory practice. *Lectures M., Tu., W., Th., at* 12. *One recitation a week at an hour to be arranged.* Professor SNOW.

Chemistry.

2. General Chemistry. *Three lectures and one laboratory period of three hours a week throughout the year.* Assistant Professor LENHER and assistants.

Graduate Students.

Graduates of this or other colleges and universities of good standing will be welcomed to this school, and arrangements will be made so that they can take the technical courses in two years or in less time, provided they have already pursued some of them in their undergraduate courses. The same degree will be conferred upon such students as upon others who have completed the four years' course.

Special Lectures.

A number of special lectures will be provided for the purpose of acquainting students with present business conditions and opportunities. So far as possible men representing the chief business enterprises of the United States will be secured for this purpose.

Requirements for Graduation and Degree.

Students who have successfully completed the above course of study will be admitted to graduation, and will receive a baccalaureate degree.

Charges and Fees.

All fees are required to be paid strictly in advance at the beginning of each semester before cards are issued by the class officer entitling the student to admission to classes.

Tuition is free for all students from the State of Wisconsin.

After ten days from the beginning of the semester no fees are returned except by special vote of the Regents.

Tuition for non-resident students, per semester.....$15 00
Incidental fee for all students, per semester..... 10 00

Communications regarding this school should be addressed to W. D. Hiestand, Registrar, or to William A. Scott, Director.

THE SCHOOL OF EDUCATION.

The School of Education at present embraces three separate organizations:—

I. The School of Education proper, composed of the departments of Pedagogy and Philosophy.
II. The University Extension Department.
III. The Wisconsin Summer School for Teachers and the Summer School for Library Training. See pp. 173-174.

I. THE SCHOOL OF EDUCATION.

Staff of Instruction.

E. A. BIRGE, Ph. D., Acting President of the University.
J. W. STEARNS, LL.D., Director, and Professor of Philosophy and Pedagogy.
M. V. O'SHEA, B. L., Professor of the Science and Art of Education.
JOSEPH JASTROW, Ph. D., Professor of Experimental and Comparative Psychology.
F. C. SHARP, Ph. D., Assistant Professor of Philosophy.
A. W. TRESSLER, A. B., Assistant Professor of Pedagagy, and Inspector of High Schools.
B. H. BODE, Ph. D., Assistant in Philosophy.
H. A. RUGER, A. B., Fellow in Philosophy.

General Statement.

This school aims to afford practical and helpful instruction to students who wish to prepare themselves for teaching in public schools and colleges; to those who wish to become school principals and school superintendents; and to those who desire to pursue studies and investigations in the science of education. Persons looking forward to the professions of journalism, law or the ministry, will find in some of these courses instruction adapted to their needs; while the history and general principles of education form a valuable addition to the courses for general culture. The four main lines of instruction in pedagogy are the history, the philosophy, the science and the practice of education, all of which present extensive fields for investigation. The history of education very properly oc-

cupies a place in courses for general culture, as an important and practical branch of the history of civilization, and it also affords the best introduction to the problems of pedagogy. The science of education is closely connected with philosophy, and especially with psychology in its modern physiological and comparative forms. Beyond the courses which are outlined below, ample opportunity will be given for the study of special problems in the laboratory and in the class room. The seminaries will afford opportunities for critical discussion of teaching work and of educational problems, and will acquaint the student with the most important current literature of education.

The work of the school naturally falls into the following divisions:

1. Classes for undergraduate students of the University as part of general culture courses. For this purpose courses 1, 5, 11, and 19 in pedagogy are specially suited.

2. Courses for undergraduate students who wish to prepare themselves for teaching in the public schools. Those in regular courses of the University who fulfill the following conditions will be entitled to receive a University Teacher's Certificate: (1) that they have completed at least two full studies for one semester in psychology and pedagogy in the School of Education; (2) that they have made special scholarly preparation for teaching in at least one department of work represented in the high schools, which preparation shall be stated in the certificate; (3) that they shall have taken the course for teachers offered in the department in which they have made special preparatons. See also p. 54.

3. Courses for students specializing in education. Those who expect to take their first degree in the educational group are required: (1) to pursue work in the department to the extent of one full study for two years; (2) to prepare a thesis in this department. The courses adapted to serve as introductory to the study of education are: in philosophy, courses 1, 2, 3, and 31; in pedagogy, courses 1, 5, 13, and 18.

4. The philosophical course for Normal school graduates. For requirements of this course see p. 72.

5. Graduate students, and those looking to the supervision of large schools or school systems, and to the detailed study of educational problems, will find work suited to their needs in the seminaries and advanced courses of the school.

An account of the courses offered in Philosophy and Pedagogy will be found on pages 90-93. Teachers' courses are offered in other departments, and are described under the appropriate heads. Among these courses are Latin 7, p. 116; German 26, p. 129; botany 20, p. 152; history 17, p. 109; English grammar 23, p. 134. See also the courses announced for teachers in the Summer Session of the University on pp. 163-173.

II. THE UNIVERSITY EXTENSION DEPARTMENT.

Staff.

E. A. BIRGE, Ph. D., Acting President of the University.
J. W. STEARNS, LL. D., Director, and Professor of Philosophy and Pedagogy.
A. W. TRESSLER, A. B., Secretary and Assistant Professor of Pedagogy.
T. S. ADAMS, Ph. D., Assistant Professor of Economics and Statistics.
G. C. COMSTOCK, Ph. B., LL. B., Professor of Astronomy.
W. F. GIESE, A. M., Assistant Professor of Romance Languages.
D. B. FRANKENBURGER, A. M., LL. B., Professor of Rhetoric and Oratory.
LOUIS KAHLENBERG, Ph. D., Professor of Physical Chemistry.
B. H. MEYER, Ph. D., Professor of Institutes of Commerce.
J. C. MONAGHAN, A. B., Professor of Theory and Practice of Domestic and Foreign Commerce.
JULIUS E. OLSON, B. L., Professor of the Scandinavian Languages and Literature.
M. V. O'SHEA, B. L., Professor of the Science and Art of Education.
J. F. A. PYRE, Ph. D., Assistant Professor of English Literature.
P. S. REINSCH, Ph. D., Professor of Political Science.
H. L. RUSSELL, Ph. D., Professor of Bacteriology, and Bacteriologist to the Experiment Station.
F. C. SHARP, Ph. D., Assistant Professor of Philosophy.
GRANT SHOWERMAN, Ph. D., Assistant Professor of Latin.
C. F. SMITH, Ph. D., Professor of Greek and Classical Philology.
S. E. SPARLING, Ph. D., Assistant Professor of Political Science.

Lectures.

The University Extension Department of the University of Wisconsin, as at present organized, carries on its work of giving instruction at a distance from the University, by courses of lectures

delivered in person by University instructors on subjects which they treat in their regular classes.

Under the system adopted by the University, the University extension lectures are delivered only in courses of six. The purpose of delivering the lectures in courses is to concentrate attention upon one subject.

A printed syllabus, free to each student, will give an epitome of the subject considered, an analysis of each lecture, references to the best books on the subject, and other helpful suggestions.

The class, which is held before or after each lecture, furnishes the student an opportunity to question the lecturer and to have special difficulties explained. In the class, the lecturer will take the opportunity to elaborate his subject or to emphasize its salient features.

The lecturer will hold at the end of the course a written examination which may be taken only by those who have attended the lectures and classes, read the required books, and sent in the required papers. To such as comply with these requirements and pass the examination, the University will award a certificate having a recognized value on the University records and credited accordingly, should the holder ever study at the University.

Expenses.

The expenses of a course consist of local expenses and the charges of the University. Under the former head are included hall rent, printing, advertising, etc., which are managed by the local center, and which vary, of course, in different towns and circumstances. Often a church or school hall may be obtained for the lecturers without expense.

The charges of the University consist of:—

1. A fee of $100 for a course of six lectures.

2. The lecturer's traveling expenses, including sleeping-car and meals, when necessary. In the case of a circuit, the lecturer's traveling expenses are divided equally among the centers forming the circuit.

3. The lecturer's hotel bill. Where the lecturer is entertained by members of the local center, this item disappears.

4. If lantern illustrations are given, the actual cost will be paid by the local center.

Lecture Courses of 1902-1903.

Professor M. V. O'SHEA: Applied Psychology and Child-Study; Lessons from the Masters.

Assistant Professor F. C. SHARP: Problems of Moral Progress.

Professor B. H. MEYER: An Introduction to Economic Problems; Some Leading Economists.

Assistant Professor T. S. ADAMS: Porto Rico under Spanish and American Government.

Professor J. C. MONAGHAN: Industrial and Commercial Developments; The Industrial and Commercial Development of Germany.

Assistant Professor SAMUEL E. SPARLING: The Modern City and Its Problems; American Political Parties and Their Relation to Government.

Professor PAUL S. REINSCH: The Constitution and the Founding of the Federal Government; The Statesmen of the Civil War; Contemporary World Politics; Historical Towns and Sites in Italy.

Assistant Professor JAMES F. A. PYRE: American Writers and American Culture; Typical English Poems; Art and Life.

Assistant Professor WM. F. GIESE: The French Classic Poets; The Skeptical Movement in French Literature from the Renaissance to the 19th Century.

Professor CHARLES F. SMITH: Greek Life; Greek Literature.

Assistant Professor GRANT SHOWERMAN: The City of Rome; Origin, Development, Destruction, and Resurrection of the Ancient City; Roman Life.

Professor JULIUS E. OLSON: Early Scandinavian History and Literature.

Professor D. B. FRANKENBURGER: Oratory.

Professor GEORGE C. COMSTOCK: Astronomy.

Professor HARRY L. RUSSELL: Microbes and Their Work.

Professor LOUIS KAHLENBERG: Chemistry.

Professors of the College of Mechanics and Engineeering: Lives of Famous Engineers and the Development of Engineering.

WASHBURN OBSERVATORY.

Staff.

E. A. BIRGE, Ph. D., Acting President of the University.
G. C. COMSTOCK, Ph. B., LL. B., Director, and Professor of Astronomy.
A. S. FINT, M. A., Assistant Astronomer.
A. G. WORTHING, Student Clerk.
A. H. BARTELT, Student Assistant, Time Service.
E. J. FILBEY, Student Assistant, Meteorology.

The Washburn Observatory was established in the year 1878 through the munificence of the late Gov. C. C. Washburn. Although its obligations and opportunities as a branch of a teaching university have not been ignored, the energies of its staff from the beginning have been directed mainly to astronomical research. Among the lines of research that have been cultivated may be specified the measurement of the positions and motions of the heavenly bodies, the discovery and measurement of double stars, the investigation of variable stars, the study of changes of latitude and of the amount and character of the atmospheric refraction, the determination of the amount of the aberration of light, problems of stellar color and a systematic investigation of the parallaxes of all accessible stars which have large proper motions. The observatory also maintains a tri-daily meteorological service.

The principal instruments of the observatory are:

An equatorially-mounted telescope of 15½ inches aperature, constructed by Alvan Clark & Sons, and provided with graduated circles, driving clock, a filar micrometer, double image micrometer by Steinheil, a spectroscope, astro-photometer, and a very complete set of eye-pieces; a meridian circle, by A. Repsold & Sons, of Hamburg, with collimators, transit micrometer, and the usual accessories of such an instrument. This instrument is figured in the last edition of the *Encyclopaedia Britannica* as the type of its class. The objective of the instrument was made by the Clarks, and has an aperture of 4.8 inches and a focal length of 58 inches. The circle is graduated to 2 minutes of arc. For several years this instrument

has been employed for an extensive series of determinations of stellar parallax. There are also a sideral clock by Hohwü, of Amsterdam, two mean time clocks by Howard, of Boston, all excellent time-pieces, and a chronograph, by Fauth & Co., of Washington.

In the Student's Observatory are mounted a six-inch equatorial telescope, by Alvan Clark & Sons, and a transit instrument of the broken telescope type, by Bamberg. These instruments, while primarily intended for instruction, are well adapted to and are employed for certain classes of original work. In particular, the equatorial telescope has been provided with reflecting prisms (Loewy), and employed as one of the principal instruments of the observatory in an investigation of the refraction and the constant of aberration, and the Bamberg instrument is used for latitude determinations by the Talcott method and for the time service of the observatory. The observatory also possesses a considerable number of subsidiary instruments, such as portable telescopes, spectrocopes, photometers, chronometers, sextants, an engineer's transit, an altazimuth, a universal instrument of the German type, a personal equation machine, a spherometer, caliper, seismoscopes, photographic apparatus, and a complete set of meteorological instruments.

The Woodman Astronomical Library, established in connection with the observatory, and supported from the income of a fund given by the late Cyrus Woodman, Esq., possesses a large and valuable collection of works upon astronomy and kindred subjects.

By provision of law the results of important investigations conducted at the Washburn Observatory are published by the state, and under this provision eleven volumes, representing the more important work done at the observatory, have been issued.

Students of sufficient technical attainments are admitted to the observatory and take part in the invesigations in progress. Meritorious original work of such students may be included in the Publications of the Observatory, or in the Bulletins of the University. The courses of instruction in astronomy are stated upon page 139.

SCHOOL OF PHARMACY.

Staff of Instruction.

E. A. Birge, Ph. D., Acting President of the University.
E. Kremers, Ph. G., Ph. D., Director, and Professor of Pharmaceutical Chemistry.
L. S. Cheney, M. S., Assistant Professor of Pharmaceutical Botany.
W. W. Daniells, Sc. D., M. S., Professor of Chemistry.
Richard Fischer, Ph. G., Ph. D., Assistant Professor of the Theory and Practice of Pharmacy.
R. A. Harper, Ph. D., Professor of Botany.
L. R. Head, A. B., M. D., Special Lecturer on "First Aid to the Injured."
H. W. Hillyer, Ph. D., Assistant Professor of Organic Chemistry.
W. H. Hobbs, Ph. D., Professor of Mineralogy and Petrology.
L. Kahlenberg, Ph. D., Professor of Physical Chemistry.
V. Lenher, Ph. D., Assistant Professor of General and Theoretical Chemistry.
H. L. Russell, Ph. D., Professor of Bacteriology.
B. W. Snow, Ph. D., Professor of Physics.
C. A. Van Velzer, Ph. D., Professor of Mathematics.
I. W. Brandel, Ph. G., M. S., Instructor in Pharmaceutical Technique.
S. R. Boyce, Ph. G., M. D., Instructor in Pharmacognosy.
R. H. Denniston, B. S., Assistant in Pharmacognosy, and Curator of the Drug Cabinet.
W. D. Frost, M. S., Instructor in Bacteriology.
E. B. Hutchins, M. S., Assistant in Quantitative Chemical Analysis.
H. E. Patten, Ph. D., Instructor in Chemistry.
*O. Schreiner, Ph. G., Ph. D., Instructor in Pharmaceutical Technique.
M. E. Tweeden, Ph. G., Assistant in Practical Pharmacy.

*Resigned, December, 1902.

General Statement.

The prime object of the School of Pharmacy is to furnish a thoroughly scientific foundation for the pursuit of the profession of pharmacy. The elements of the fundamental natural sciences, chemistry, botany or biology, and physics must first be studied before their application to pharmacy can rationally be considered. This is as true for pharmacy as for any other applied science or art. In pursuing these general studies the pharmacy students have the advantage of close association with students from other courses. This implies that in these studies they must be able to keep abreast with students who are graduates of accredited high schools. The best preparation for college, therefore, which the prospective pharmacy student should seek is not that of the shops, but that of a good high school or academy of like rank. The University does not demand practical experience for admission to the courses in pharmacy, but desires such preparation as will best fit for college or university work.

The general study of these fundamental sciences is followed by more or less specialized courses. General chemistry, inorganic and organic, qualitative and quantitative analysis, are followed by pharmaceutical chemistry and applied chemical analysis; general botany by vegetable histology and anatomy of drugs; general physics by pharmaceutical technique. These somewhat specialized studies, in turn, not only lay the foundation for the study of the more strictly applied courses in practical pharmacy and pharmacognosy, but also prepare the student for thesis work.

The student who can spend only two years at the University is compelled to take up the more technical studies of his course before he has laid a satisfactory foundation. Such a compromise is outlined under the caption, Courses of Study. The three-year student, as a rule, finds time to pursue other studies besides those outlined above, *e. g.*, German, physiology, or bacteriology, etc. The four-year student has the great advantage of supplementing his high school preparation during the freshman and sophomore years by acquiring a reading knowledge of German and French, and by the study of university mathematics, all of which studies are of the greatest importance when the more advanced work of the natural sciences is taken up during the junior and senior years.

Special attention is called to the four-years' course offered to graduates of accredited high schools. The course was created in order to accommodate those students who desire to obtain a gen-

eral scientific education and to include in their course the pharmaceutical studies, and with the hope of stimulating a broader pharmaceutical education. For the more applied courses special laboratories have been equipped.

Like the sister profession, medicine, pharmacy is in need, not only of the general practitioner, but also of the specialist. To meet the demands of such, the school offers graduate courses. Graduates who desire to prepare themselves as chemists for manufacturing establishments, as analytic or sanitary chemists, or as bacteriologists, will find that the graduate courses of the School of Pharmacy, as well as the other departments of the University, offer excellent opportunities for advanced and more specialized study. Special lines of research can also be pursued in various departments by those who desire to work for a higher degree. The attention of advanced students is especially called to the graduate work outlined on page 56.

Detailed information about studies in the four-years' course and in the College of Letters and Science can be found under Departments of Instruction, beginning on page 90.

The School of Pharmacy is an integral part of the University and is governed by the same general policy that characterizes the institution. The methods of work differ in no essential from those adopted by the other scientific departments. This school has from the beginning demanded a large amount of laboratory instruction, believing that none of the natural sciences can be adequately taught without considerable instruction in the laboratory, and, whenever necessary, in the field.

Laboratories.

A description of the general physical, chemical, and biological laboratories will be found on pp. 36-37; of the mineralogical laboratory on p. 37; of the assay laboratory on p. 223; of the bacteriological laboratory on p. 38; of the electrochemical laboratory on p. 221. The special laboratories of the school are located in North Hall.

PHARMACEUTICAL CHEMICAL LABORATORY. This laboratory affords ample accommodation to the advanced students. Every student is assigned a desk which he alone uses. The balance room is well equipped with Becker's, Sartorius', Eimer & Amends', Nemetz's, Troemner's, and Bunge's balances, a torsion balance, etc. A Bunsen combustion furnace, a Glazer combustion furnace with the latest

improvement after Anschütz and Kekulé, a Kopfer combustion furnace for compounds rich in halogen, a Kekulé gas furnace for heating substances in sealed tubes, nitrometers and much other chemical and physical apparatus can be used by the student, particularly in the experimental work for his thesis.

Laboratory for Pharmaceutical Technique. This laboratory is equipped with apparatus and material for a more detailed and applied study of such chapters of mechanics and phyics as are of special importance to the pharmaceutical student. It contains balance models, balances and measuring instruments of various kinds, complete apparatus for determining specific gravity according to different methods, a Laurent's polariscope, a Pulfrich's refractometer, Beckmann's apparatus for the determination of molecular weights by the freezing and boiling point methods, and apparatus for the determination of vapor densities. Besides these, the laboratory is liberally supplied with apparatus for conducting the processes of distillation, sublimation, comminution, extraction, filtration, crystallization, dessication, etc.

Laboratory for Pharmaceutical Botany and Pharmacognosy. This is a large room, well equipped with tables, microscopes, and lockers. It accommodates a class of about thirty-five students and has a capacity when fully fitted out for about twenty more. The room is lighted in a manner favorable for microscopic work. A Naples paraffin bath and a Jung microtome are included in the equipment of this laboratory.

The students in pharmacognosy working in this laboratory have further accommodations in the adjacent room, occupied by the pharmacognostical collection, in the shape of lockers to contain the drug collections made use of in this branch of work.

Laboratory for Practical Pharmacy and Dispensary. A laboratory has been equipped for individual rather than class instruction in practical pharmacy. It is well furnished with balances, percolation stands, extraction apparatus, water motors, prescription case and all apparatus necessary in a complete laboratory of this kind. In the basement a room has been fitted to serve as comminution room, equipped with an electric motor, drug-mills, mortars, tablet machines, centrifugal machine, ointment mill, mixing and sifting apparatus, etc.

Collections.

Of the various collections, the drug cabinet is of special importance and interest. The chemical cabinet has outgrown its

old quarters and new cases are being provided for it. The cases in which the chemical collection was formerly housed are now being used for the rapidly increasing collection of apparatus used for lecture demonstrations in pharmaceutical technique. Additions are also being made to the collection of the department of practical pharmacy. The department of pharmaceutical botany has received numerous valuable donations during the past year to the economic collection.

THE CHEMICAL COLLECTION. Cabinet specimens of chemicals and minerals. The latter serve not only to supplement our knowledge of manufactured chemicals, but also to demonstrate the occurrence in nature of the chemical elements and their compounds, also to illustrate in many instances the source of many artificial chemicals. Through the liberality of the United Alkali Company of England, some fifty specimens of their products in various stages of manufacture were obtained. Dr. William Simon, of Baltimore, has contributed a series of specimens illustrating the manufacture of bichromate and ferrocyanide of potassium. Fries Bros., of New York, have donated a number of synthetics used in perfumery. A similar collection has recently been received from the Herbene Chemical Co. of New York. A cabinet for volatile oils contains fine collections from Schimmel & Co. of Leipzig, Germany and Rome; Bertrand Fils of Grasse, France; Dodge and Olcott, New York; and others. A cabinet for dye-stuffs contains over 280 samples of artificial dye-stuffs from the Farbenfabriken of Elberfeld & Co. of New York. This collection is supplemented by ten volumes of richly illustrated descriptive matter, to which additions are being constantly received. Large and valuable collections of modern synthetic new remedies have been received from Schering and Glatz, the Farbenfabriken of the Elberfeld Company, and from Merck & Co., all of New York. Numerous smaller donations have been received within recent years.

THE PHARMACOGNOSTICAL COLLECTION in a room especially devoted to it, fills ten large Smithsonian cases, and consists of nearly 5,000 specimens, both dry and in liquid. The commercial samples are of especial value to students, since all grades of drugs are shown, as well as adulterations and substitutions.

At the time of the World's Fair, two valuable additions of foreign drugs were made; one a collection of over one hundred Malay drugs, the other a collection of drugs from the island of Ceylon. Worthy of mention are also a collection of choice drugs from Messrs. Lehn and Fink, a materia medica cabinet from Parke, Davis & Co., a collection of official drugs from Schieffelin & Co., another from Gilpin,

Langdon & Co., and collections of powdered drugs from Gilpin, Langdon & Co., and from Eli, Lilly & Co.

Since many important new drugs from the animal kingdom have recently come into use, an effort is being put forth to make this branch of the museum as complete as possible. Already substantial contributions have been received from the laboratories of Parke, Davis & Co., and of Armour & Co.

A collection illustrating vegetable and animal perfumes has been begun. A number of original packages and containers have been purchased, others have been contributed by Lehn and Fink and by Fritzsche Bros.

ECONOMIC COLLECTION. This collection includes an herbarium of medicinal plants of about 5,000 sheets and many articles, derived from plants, used for food, clothing, etc.; implements used in collecting or manufacturing plant products; and photographs illustrating plants of economic value. At present the economic collection is housed on the fourth floor of North Hall in part with the drug collection and in part in the herbarium room. In recent years liberal donations have been made by the American Cotton Seed Oil Co., the Georgia Railway, the U. S. Department of Agriculture, Mr. Magnus Swenson, and the Washburn-Pillsbury Milling Co.

The biological and the mineralogical and geological museums in Science Hall are well equipped and full of interest to the student of the natural sciences.

Libraries.

For a statement as to general library facilities at the University and in the city of Madison, see p. 33. The department library for ready reference is unusually well supplied with reference works and the best periodicals. The other department libraries, as well as the general library, are all on the same campus and, therefore, easy of access, the general library being open in the evening as well as the day.

TERMS OF ADMISSION.

To the Two Years' and Three Years' Courses.

I. Graduates from high schools are admitted without examination and without practical experience in a drug store.

II. Non-graduates are admitted if they comply with the following requirements:—

1. They must be at least eighteen years of age.

2. They must present satisfactory certificates of *at least* one year's attendance from some standard high school, or its equivalent from a similar educational institution.

3. The time intervening between the secondary education and the college course should have been spent in a drug store, where physicians' prescriptions are regularly compounded.

To the Four Years' Course.

The terms of admission to this course are the same as those to the general science course, as given on page 70. No practical experience in pharmacy is required.

Students from other colleges or schools of pharmacy will be admitted on presentation of satisfactory certificates. However, no student who enters from another college will be admitted after November 1 of the year in which he intends to graduate.

Degrees.

The degree of *Graduate in Pharmacy* (Ph. G.) is conferred upon candidates who have successfully met the requirements of either the two or three years' courses. No practical experience is required for graduation.

The degree of *Bachelor of Science* (Pharmacy Course) is conferred upon candidates who have successfully met the requirements of the four years' course.

The degree of *Master of Pharmacy* is conferred upon graduates of the shorter courses only after a year of residence at the University. They must pursue advanced work in some science or sciences allied to pharmacy, and present a dissertation embodying the results of an original investigation, which shall be satisfactory to the committee on higher degrees.

The degree of *Master of Science* can be obtained by graduates of the four years' course upon fulfillment of similar requirements.

The Louis Lotz Scholarship.

Mr. Louis Lotz of Milwaukee has established a pharmaceutical scholarship on a financial basis of $50.00 per annum.

Fees and Expenses.

No tuition is required from students who are residents of the State of Wisconsin; non-residents pay $20.00 each semester. The fee for incidental expenses, which is required of all students, is $15.00 per semester. These fees must be paid before the class cards can be issued.

The following statement applies to the laboratories of the School of Pharmacy only and does not include the charges made in the general chemical laboratories. For these see p. 48.

The laboratory fees should be paid within two weeks after the laboratory cards have been issued. For the general laboratory privileges, *i. e.*, desk-room, gas, water, general reagents, use of balances, microscopes, and other large pieces of apparatus, a charge of one dollar per semester will be made for each fifth of a study; $2.00 for a two-fifths study; $3.00 for a three-fifths study, etc. A separate account will be kept with the accountant of the storage room for special apparatus and material. The student will purchase coupons from the Secretary ($5.00 at a time) and present them at the storage room for what he draws out. At the end of the year full credit will be given for such pieces of apparatus as are taken back by the accountant, in accordance with the rules of the storage room.

Every student should make provisions to buy two coupons at the beginning of the first semester, so that he may not be delayed in taking out the necessary apparatus.

No diploma fee is required upon graduation.

The payment of all University charges is to be made to Mr. E. F. Riley, Secretary of the Regents, at his office in the Law Building.

The cost of board in clubs is from $2.00 to $2.50 per week; in private families, from $2.50 to $4.00 per week; and rooms can be obtained in the city at correspondingly reasonable rates.

COURSES OF STUDY.

Two Years' Course.

JUNIOR YEAR.

Chemistry, 1*; pharmaceutical botany, 1; pharmaceutical technique, 1 and 2, throughout the year; pharmacognosy, 1, 3, and 8; practical pharmacy, 4.

SENIOR YEAR.

Chemistry, 5; pharmaceutical chemistry, 1, 2; pharmaceutical botany, 3; pharmacognosy, 1 and 2, b and c, 3 and 4; practical pharmacy, 1 and 2; thesis.

Three Years' Course.

SOPHOMORE YEAR.

Chemistry, 1; pharmaceutical botany, 1, or biology, 1; physics, 15; and pharmaceutical technique, 1; electives.

*The figures refer to the numbers of the courses as given in the statements under Departments of Instruction.

JUNIOR YEAR.

Chemistry, 5; pharmaceutical chemistry, 1 and 2; pharmaceutical botany, 2; pharmaceutical technique, 2; pharmacognosy, 1, 3, 4, and 8; practical pharmacy, 3; electives.

SENIOR YEAR.

Pharmacognosy, 1 and 2, a, b and c and 3; practical pharmacy, 1 and 2; thesis; electives.

Four Years' Course.

FRESHMAN YEAR.

Biology, 1; German 2S; mathematics, 1, 2; English, 2; gymnastics, military drill.

SOPHOMORE YEAR.

French, 3; German, 3S; chemistry, 1; physics, 1; gymnastics, military drill; electives.

JUNIOR YEAR.

Pharmaceutical chemistry, 1, 2, and 3; pharmaceutical botany, 2; pharmaceutical technique; pharmacognosy, 1, 3, 4 and 8; practical pharmacy, 3; electives.

SENIOR YEAR.

Pharmacognosy, 1 and 2, a, b, c, and 3; practical pharmacy, 1 and 2; thesis; electives.

The student should decide at the beginning of the junior year whether his major study is to be of a physical, chemical, or biological character, and arrange his work accordingly. During the second semester the subject for his thesis should be chosen in one of the departments in which he is doing his major work.

DEPARTMENTS OF STUDY.

Chemistry.

PROFESSOR DANIELLS, PROFESSOR KAHLENBERG, ASSISTANT PROFESSOR HILLYER, ASSISTANT PROFESSOR LENHER, AND ASSISTANTS.

The following courses are either required or frequently elected. For detailed information see pp. 143-146.

1. General Elementary Chemistry. Assistant Professor LENHER, and assistants.

10. Advanced Inorganic Chemistry. Professor DANIELLS, and assistants.

15. Toxicology. Professor DANIELLS.

13. Quantitative Analysis. For students in pharmacy. Professor DANIELLS and Mr. KOCH.

20. Advanced Organic Chemistry. Assistant Professor HILLYER.
30. Physical Chemistry. Professor KAHLENBERG.
36. Research work in Physical Chemistry. Professor KAHLENBERG.

Pharmaceutical Chemistry.

PROFESSOR KREMERS.

1. Pharmaceutical and Pharmacognostical Chemistry. A review of general chemistry with special adaptation to pharmacy. Richter's *Inorganic Chemistry*, Bernthsen's *Organic Chemistry*. Two lectures and one recitation. *M., Tu., W.*
2. Applied Chemical Analysis. Laboratory work with a weekly recitation on *Th.*
3. Reviews with critical reading of the text of the *U. S. Pharmacopoeia* as far as chemicals are concerned. *F.*
5. The Classification and Study of the Constituents of Volatile Oils. For advanced and graduate students. *Lecture W., first semester.*
7. Advanced Laboratory Work and Thesis, adapted to the individual.
8. For the course on chemical materials of commerce, see p. 97.

Biology.

PROFESSOR BIRGE, PROFESSOR HARPER, ASSISTANT PROFESSOR MARSHALL, AND ASSISTANTS.

For detailed information see p. 149.

1. General Biology. Professor HARPER, Professor BIRGE, Dr. MARSHALL.
4. Human Physiology. Professor BIRGE.

Pharmaceutical Botany.

ASSISTANT PROFESSOR CHENEY.

1. General Morphology of Plants. Corresponds to course 22 on p. 152. An elementary course. The course will be supplemented by botanical excursions. *Daily throughout the year, 8-10. Excursions on Saturdays.*
2. Vegetable Histology. Corresponds to course 16, p. 151. The work in this course is so arranged that students electing it may take it in either semester or both. For three and four-year students. *Five times a week first semester; three times a week second semester.*

3. Vegetable Histology. The same as course 2 for the first semester. For two-year students.
4. Trees and their Characteristics. Corresponds to course 23, p. 152. A course designed for those who desire to acquaint themselves with forest trees. Lectures and laboratory work with occasional excursions. Those who expect to take this course should know how to use a microscope and should have had at least the equivalent of one semester's work in general botany. May be taken either semester or both. *Twice a week throughout the year.*
5. Advanced work in Anatomy. Special subjects for original investigation will be assigned to such students desiring to do advanced work as are properly qualified.
6. Bryology. Corresponds to course 26, p. 153. Offered as an elective to advanced and graduate students. Course 1 (22) is a prerequisite. *Hours on consultation.*
7. Taxonomy of Spermatophyta and Pteridophyta. Special work in the morphology and classification of the seed-producing plants and ferns is offered to advanced or thesis students. Courses 1 and 2 or 3 or their equivalent are required as a prerequisite.

Bacteriology.

PROFESSOR RUSSELL.

For detailed information see p. 153.

1. General Bacteriology. Professor RUSSELL and Mr. FROST.
2. Medical Bacteriology. Mr. FROST.
6. Communicable Diseases. Mr. FROST.
8. Biology of Water Supplies. Mr. FROST.

Pharmacognosy.

MR. DENNISTON, DR. BOYCE, AND OTHERS.

1. Lectures. This course presents to the student the main facts of natural history of the plants yielding drugs. Required of all students. *Two lectures a week during the second semester of the junior year, and three a week during the first semester of the senior year.* Mr. DENNISTON.

2a. Laboratory work for three-year or four-year students. The course in laboratory work consists in a study of the microscopic structure and characteristics of the principal plant drugs. Required of all seniors. Mr. DENNISTON. *Three-fifths work during the first semester of the senior year.*

2b. Microscopical Examination of Powdered Drugs. The object of this course is to furnish and illustrate the methods of identifying powdered drugs and detecting adulterations of the same. This course presumes a knowledge of whole crude drugs as well as of the general histology of types of the higher plants. Required of all seniors. Mr. DENNISTON. *One-fifth, second semester of senior year.*

2c. The second semester is spent in the study of the principal groups of chemical constituents of drugs, such as alkaloids, glucosides, etc. A representative of each group will be isolated and studied in the laboratory. Required of all seniors. *Four-fifths during the second semester.* Professor KREMERS.

3. This course will consist of recitations supplemented by laboratory work in the identification of drugs and the arrangement of a drug collection. The official and the most important non-official drugs will be studied. *One-fifth during the second semester of the junior year and the first semester of the senior year.* Mr. DENNISTON.

4. Pharmacology and therapeutics of medical materials, vegetable and animal drugs, and their preparations, inorganic and organic chemicals. Required of all seniors. *One-fifth, second semester of the junior year.* Dr. BOYCE.

5. For Pre-Medical Students. An abridgement of the work given to pharmacy students is offered for those intending to study medicine. As far as may be, the methods used are those detailed for the foregoing courses. No drug collection is required and no microscopic study is expected. Two lectures and two hours' laboratory work per week. *Three-fifths during the first semester.*

6. Advanced laboratory work and thesis adapted to the individual. Mr. DENNISTON.

7. The Collection and Commerce of Crude Drugs. Laboratory and field work supplemented by lectures and recitations. *One-fifth during the first semester of the junior year.* Mr. DENNISTON.

Practical Pharmacy.

ASSISTANT PROFESSOR FISCHER AND MR. TWEEDEN.

1. Theory and Practice of Pharmacy. Class work, *two hours a week throughout the year.*

2. Operative Pharmacy. Laboratory work. *Three-fifths throughout the year.*

3. Operative Pharmacy. Laboratory work. For juniors of all courses. *Two-fifths during second semester.*
   This course is continued during the senior year as course 2. being merely an extension of the latter.
4. Chemistry of Alkaloids. For advanced undergraduates and graduates. *One-fifth throughout the year.*
5. Special work adapted to the individual, including laboratory work in preparation for thesis.

Physics.

For detailed information see p. 140.

1. General Lectures and Introductory Laboratory Practice. Professor SNOW and assistants.

Pharmaceutical Technique.

DR. SCHREINER.

1. Lectures and recitations. The course consists in a detailed study of those chapters of physics and physical chemistry applicable to pharmaceutical and chemical operations. Required of two-year juniors and three-year sophomores. *Two-fifths throughout the year.*

2a. Laboratory practice in technical processes and the use of apparatus commonly employed in pharmaceutical laboratories and technical chemistry. Determination of the physical constants of chemical substances prepared by the student himself. Required of two year juniors. *Three-fifths throughout the year.*

2b. Laboratory practice in the technique of chemical pharmaceutical operations. Required of three-year sophomores. *One-fifth throughout the year.*

2c. Laboratory practice in the determination of physical constants and their application to pharmaceutical and chemical problems. Required of three-year and four-year juniors. *Two-fifths throughout the year.*

3. Advanced work adapted to the individual, including laboratory work in preparation for thesis.

First Aid to the Injured.

DR. HEAD.

A series of lectures upon the first care of emergency cases, embracing: the essential anatomical and physiological principles; methods of preventing or combating shock after injuries; checking

hemorrhage; manipulation for resuscitation of the asphyxiated; indications for the administration of some of the emergency remedies; and the practical demonstration of the application of temporary dressings.

The Economic Functions of the State.

PROFESSOR MEYER.

This course consists of a series of lectures, historical and critical, on the state in its relation to industry, trade, and the professions, with special reference to pharmacy.

Law Applied to Pharmacy.

A course of lectures treating of the validity and construction of laws especially restraining the practice of pharmacy; of the liability of pharmacists both criminal and civil; for their own violations of laws and that of their agents; also for their own negligence and that of their agents.

All correspondence or inquiries relating to the School of Pharmacy should be addressed to Professor Edward Kremers, Madison, Wis.

COLLEGE OF MECHANICS AND ENGINEERING.

FACULTY.

E. A. Birge, Ph. D., Acting President of the University.
F. E. Turneaure, C. E., Acting Dean, and Professor of Bridge and Sanitary Engineering.

Professors and Assistant Professors.

Storm Bull, M. E., Professor of Steam Engineering.
C. F. Burgess, E. E., Assistant Professor of Electrical Engineering.
J. M. Clements, Ph. D., Assistant Professor of Geology.
Geo. C. Comstock, Ph. B., LL. B., Professor of Astronomy and Director of Washburn Observatory.
C. A. Curtis, A. B., Captain U. S. Army, Professor of Military Science and Tactics.
W. W. Daniells, M. S., Sc. D., Professor of Chemistry.
J. C. Elsom, M. D., Professor of Physical Culture and Director of the Gymnasium.
W. F. Giese, A. M., Assistant Professor of Romance Languages.
H. W. Hillyer, Ph. D., Assistant Professor of Organic Chemistry.
W. H. Hobbs, Ph. D., Professor of Mineralogy and Petrology.
A. R. Hohlfeld, Ph. D., Professor of German.
D. C. Jackson, C. E., Professor of Electrical Engineering.
L. Kahlenberg, Ph. D., Professor of Physical Chemistry.
C. I. King, Professor of Mechanical Practice.
C. K. Leith, Ph. D., Assistant Professor of Geology.
Victor Lenher, Ph. D., Assistant Professor of General and Theoretical Chemistry.
J. G. D. Mack, M. E., Assistant Professor of Machine Design.
E. R. Maurer, B. C. E., Professor of Mechanics.
J. I. Phillips, B. S., Assistant Professor of Mechanical Drawing.
J. F. A. Pyre, Ph. D., Assistant Professor of English Literature.
A. W. Richter, M. E., Professor of Experimental Engineering.
E. B. Skinner, Ph. D., Assistant Professor of Mathematics.

C. S. SLICHTER, M. S., Professor of Applied Mathematics.
L. S. SMITH, C. E., Assistant Professor of Topographic and Geodetic Engineering.
B. V. SWENSON, E. E., Assistant Professor of Electrical Engineering.
W. D. TAYLOR, C. E., Professor of Railway Engineering.
AUGUSTUS TROWBRIDGE, Ph. D., Assistant Professor of Mathematical Physics.
C. R. VAN HISE, Ph. D., Professor of Geology.
O. B. ZIMMERMAN, M. E., Assistant Professor of Machine Design.

Instructors and Assistants.

B. S. ANDERSON, Machinist and Assistant in Shop Practice.
M. F. ANGELL, Assistant in Physics.
A. BEATTY, Ph. D., Instructor in English.
W. G. BLEYER, M. L., Instructor in English.
MICHAEL BONN, Assistant in Foundry Practice.
H. G. A. BRAUER, Ph. D., Instructor in French.
C. H. BURNSIDE, M. S., Instructor in Mechanics.
E. A. COOK, B. L., Instructor in English.
A. R. CRATHORNE, B. S., Instructor in Mathematics.
G. J. DAVIS, C. E., Instructor in Civil Engineering.
R. E. N. DODGE, M. A., Instructor in English.
W. D. FROST, M. S., Instructor in Bacteriology.
S. H. GOODNIGHT, M. A., Assistant in German.
C. H. HANDSCHIN, Ph. D., Instructor in German.
ROY HANKINSON, Student Assistant in Carpentry.
RUDOLPH HARTMAN, Instructor in Testing Laboratory.
MAY HUNT, M. L., Instructor in English.
W. G. KIRCHOFFER, C. E., Instructor in Civil Engineering.
W. H. KELLY, Ph. B., Assistant in Physics.
H. KRATSCH, Machinist and Instructor in Mechanical Practice.
W. G. LOTTES, Instructor in Forge Practice and Repairing.
F. W. MEISNEST, B. S., Instructor in German.
A. S. MERRILL, B. S., Instructor in Mechanical Engineering.
A. V. MILLAR, M. S., Instructor in Descriptive Geometry and Mechanical Drawing.
L. F. MILLER, M. A., Instructor in Physics.
H. E. PATTEN, Ph. D., Instructor in Chemistry.
OTTO PATZER, B. L., Instructor in French.
W. M. PERSONS, B. S., Instructor in Mathematics.

G. C. SHADD, B. S., Instructor in Electrical Engineering.
G. A. SCOTT, B. S., Instructor in Electrical Engineering.
J. W. SHUSTER, B. S., Instructor in Electrical Engineering.
W. O. SYPHERD, M. A., Instructor in English.
E. M. TERRY, A. B., Assistant in Physics.
H. J. B. THORKELSON, M. E., Instructor in Steam Engineering.
G. W. WILDER, Ph. D., Instructor in Physics.
H. C. WOLFF, M. S., Instructor in Mathematics.
J. G. ZIMMERMAN, Student Assistant in Applied Electrochemistry.

Organization of the College.

The College of Engineering is organized in the belief that a thorough-going fundamental training is the first essential to a successful engineer, but that this fundamental training may be best secured not alone by theoretical study, but by giving attention as well to the practical applications of the principles involved. It is further a leading thought that after the fundamental principles have been mastered, a certain measure of specialization in the main lines of engineering is advisable, because of the great development of engineering in recent years, and the various phases which it is rapidly assuming. It is the endeavor of the college to combine a reasonable amount of specialization during the later years of its courses with a thorough grounding in the fundamentals during the earlier portions; and in carrying out this plan, it endeavors to make the mathematical and theoretical courses strong in the earlier years, and the applied courses as strong in the later years, while the draughting and shop courses continue progressively from the beginning to the end. It also introduces sufficient foreign language to enable its graduates to read the professional German or French literature, and aims to give so much of a mastery of the English language as to enable its graduates to present professional subjects with ease, clearness and effectiveness.

Requirements for Admission.

There are two methods of admission to the University:
I. By examination at the University.
II. By certificates from accredited schools.

I. EXAMINATIONS AT THE UNIVERSITY.

The regular examinations of the University are two in number, one in June and the other in September. For the current year

the earlier examination will be held on Thursday and Friday, June 11 and 12, beginning at 9 A. M. The later examination will be held on Tuesday and Wednesday, September 29 and 30, beginning at 9 A. M. Candidates must be present at the first examination of the first day. The requirements for admission to the engineering courses are given on page 70.

Admission of Special Students.

Candidates under twenty-one years of age desiring to take special courses will be required to have the same qualifications as candidates for one of the regular courses of the University.

Persons over twenty-one years of age, *who are not candidates for a degree*, and who wish to take special studies, will be permitted to do so upon giving satisfactory evidence that they are prepared to take the desired studies advantageously. A good knowledge of elementary algebra and geometry is essential. If they subsequently desire to become candidates for a degree, or to take a regular course, they must pass the required entrance examination.

II. ADMISSION UPON CERTIFICATES.

Graduates of schools which have been accredited to the University for the general science and engineering courses will be admitted to any one of the engineering courses upon presentation of a certificate from the principal of the school.

Preparation in Algebra for Engineering Courses.

Thorough preparation in mathematics is of the greatest importance to students entering the engineering courses of the University; and it is therefore advised that such students carefully review algebra either during the last term of their high school course or during the summer preceding their entrance into the University. The University faculty considers it advisable that the review be made, wherever practicable, during the last term of the high school course.

COURSES OF STUDY.

The College of Mechanics and Engineering offers six systematic four-year courses, as follows:—

CIVIL ENGINEERING,
SANITARY ENGINEERING,
MECHANICAL ENGINEERING,

ELECTRICAL ENGINEERING,
APPLIED ELECTROCHEMISTRY,
GENERAL ENGINEERING, including an elective course in *Mining Engineering.*

The General Engineering Course.

There is coming to be a great demand in our expanding industrial and commercial business for technically educated men who cannot be classified as engineers, properly speaking. Superintendents and managers, presidents and secretaries, owners and members of boards of directors, of all large manufacturing and commercial enterprises, as well as of all transportation, lighting, and power companies, should be acquainted with the fundamental principles and practices of some of the ordinary applications of science to modern industry. For the practical education of such men a General Engineering Course has been established, with only the fundamental engineering sciences required, in addition to the regular work of the freshman year. This leaves about one-third of the entire time to be filled by such elective studies in the College of Engineering or in other departments as the student may find best suited to his particular needs. It may well be, also, that some students who expect to practice engineering will prefer to elect a considerable portion of their course in place of taking any one of the fixed engineering courses.

The Pre-Engineering Collegiate Course.

Especial encouragement is given to those who can afford the time to graduate in a collegiate course before entering the course in engineering. By electing during the collegiate course the mathematics, physics, chemistry, modern language, surveying, and descriptive geometry, required of engineers, the degree in engineering can be obtained in two additional years. Greater satisfaction and profit is gained from the study of engineering when the student has already acquired a broad and thorough general training. Engineers are often called upon to fill the highest positions in the community, positions which demand breadth of view and wide general training. The opportunities for acquiring the breadth of education given by a complete collegiate course, only rarely arise after the student has begun the active practice of his profession.

A Five-Year Scheme in the College of Engineering.

The amount of work required in the College of Mechanics and Engineering throughout the entire four years is, as measured in

recitation and laboratory hours, just one-fourth more than that required in the courses in the College of Letters and Science. It is necessary to make the work very heavy in order to cover the ground requisite to the granting of the engineering degree. Many students find it difficult to perform this work satisfactorily, and they would prefer to devote to it an additional year; this would either lighten the work or it would enable them to elect some additional studies. To satisfy this demand the class officers in the College of Mechanics and Engineering are authorized, with the consent of parents or guardians, to arrange the work with the students who desire to extend the length of their course in this manner, so as to make it cover five years in place of four. It has not been thought wise to formally arrange the work in the several courses to cover a five-year period, since different students would prefer to take it in different ways. The faculty of the College of Mechanics and Engineering recommend that students devote this additional year to the work, whenever they feel that they can afford the time and the expense. Students who elect to do this, therefore, should not feel that it is any reflection upon their abilities or upon their industry. It would rather indicate a disposition to obtain a more thorough preparation for their professional work.

Degrees.

The University confers upon the graduates in the engineering courses the degree of *Bachelor of Science*, with a specific designation of the name of the course taken.

The degree of *Civil Engineer*, *Mechanical Engineer*, and *Electrical Engineer* are conferred as second degrees upon *Bachelors of Science* in the civil, mechanical, and electrical engineering courses respectively, or in allied courses, (1) who pursue advanced professional study at the University for one year, and present a satisfactory project or thesis; or (2) who present suitable evidence of three years of professional work, of which one must be in a position of responsibility, and a satisfactory thesis.

Buildings.

Through the generosity of the legislature of 1899, the College of Mechanics and Engineering now occupies its own building, which is unusually complete and well arranged. All the professional work of the College of Mechanics and Engineering is given in this building and in its accompanying laboratories, except some of the electrical laboratory work and the shop instruction, which are given in

the commodious shop buildings near by. For chemistry the engineering students go to the chemical building, for physics and other natural sciences to Science Hall, and for language, mathematics, and other similar work, to the literary halls of the University. In this way the students of engineering come into daily contact with the students in the other University courses, to the great advantage of all classes.

Libraries.

The library facilities of the University are unusually good. Besides the University library, containing more than 100,000 titles, there are the library of the State Historical Society (245,000 titles) and the city free library (19,000 titles), to which the students have free access. The library of the Wisconsin Academy of Sciences, Arts, and Letters, access to which may be had, contains about 8,000 titles. The College of Mechanics and Engineering subscribes for about one hundred and fifty technical periodicals, and also purchases duplicate copies of standard engineering works of reference, one set of which, and the engineering periodicals, are kept in the engineering reading room, on the first floor of the Engineering Building, in order to facilitate the frequent use of them by the engineering students. The bound files of technical periodicals in the library are unusually complete, and additions are made every year.

Laboratories and Apparatus.

The engineering laboratories are well equipped for purposes of instruction and investigation.

The Testing Laboratory occupies the high sub-basement under the assembly room of the Engineering Building. It is supplied with a recently purchased one-hundred-thousand-pound Riehlé automatic and autographic testing machine, permitting the testing of materials of the larger sizes used in practice, and a new beam testing machine, with a capacity of one hundred thousand pounds on a base of twenty-four feet. In addition to these there are also other Riehlé machines, and Olsen and Thurston machines for making tests in tension, compression, bending, and torsion. These machines are supplied with extensometers, clamps, devices for autographic records, and other special devices. A set of standard appliances for testing the wearing and cementing properties of road-building rocks has also been installed.

The Cement Laboratory contains a full supply of necessary apparatus for making tests according to the American Society of

Civil Engineers' standard; baths, self-recording thermometers, Boehme hammer, complete 1,000-lb. Riehlé and Fairbanks testing machines, etc. A power-driven stone saw, and grinding and polishing wheels are available in another room. The machines in the testing laboratory are also used for testing brick, stone, and cement. The foundry rattler is available for paving brick tests.

The Hydraulic Laboratory contains high and low level tanks fitted for experimenting upon the flow of water through orifices, nozzles, pipes, and over weirs. In the laboratory are several water motors, water meters, current meters, lines of pipe, hydraulic and steam rams, etc., all available for experimental work. There is also a convenient supply of gauges and other apparatus required in accurate hydraulic experiments.

The Mechanical Laboratory.—The main laboratory, which is 74 feet by 50 feet, is a one-story addition in the rear of the new building, and is so placed that the wings, which ultimately will be added to the building, will leave this laboratory in the court thus created. The floor of this laboratory is on the same level as the main basement of the building; a gallery arranged especially for visitors runs around the whole laboratory, to which gallery one gains entrance from the first floor. A part of this wide gallery is partitioned off, a portion being used as a computing room, and the remainder forming laboratories for special investigation. The main laboratory is well equipped with a variety of steam engines, specially arranged for experimental work. The most important of these is a fifty horse-power cross compound engine, so arranged that either cylinder can be supplied with live steam from the boilers and run as a single cylinder engine. The surface condenser and air pump can also be disconnected so that the engine may be run as a non-condensing one. Both cylinders and receiver are provided with steam jackets, which may be used at will. By means of a Proell governor the number of revolutions may be varied from 50 to 125. The cut-off of the steam may vary automatically between zero and ninety-five per cent. of the stroke.

The above engine is also connected to a fifty horse-power superheater, capable of superheating the steam 200 degrees F.

There is also installed a five-ton ammonia refrigerating plant. The ammonia compressor is a triple one and of the single-acting type, and is arranged in such a manner that the clearance may be readily varied,

This laboratory also contains a fifty horse-power two-stage air compressor directly connected to a compound condensing engine equipped with the Meyer valve gear; also various other types of steam, gas, gasoline and hot air engines.

During the present year there will be installed some of the very latest types of gas engines, prominent among which will be a vertical three-cylinder engine of large capacity.

The laboratory is supplied with friction brakes, transmitting dynamometers of various kinds and capacities, a mercury column, and other means for testing steam and vacuum gauges and indicators, and various devices for special tests. There are also the necessary tanks, weighing apparatus, pyrometers, thermometers, calorimeters, some twenty-five indicators, revolution counters, tachometers, recording gauges, reducing motors, water meters, etc., for making complete tests of the economy and capacity of boilers and engines. The laboratory is also supplied with a very large number and variety of injectors, and with special facilities for making tests of the same.

The boiler house of the University, which furnishes steam for nearly all of the buildings of the institution, both for heating and for power purposes, is also equipped in such a manner that experimental work with reference to the economy of boilers under various conditions may easily be carried out.

Gas Analysis and Fuel Laboratories.—In the eastern wing of the building are the separate laboratories for gas and coal analysis; these rooms are both large and well lighted, and furnish splendid opportunities for extended researches in these very important branches of study.

These laboratories are thoroughly equipped with all the necessary apparatus and facilities for thorough investigation. The equipment includes the Carpenter Coal Calorimeter, Mahler Bomb Calorimeter, Junker Gas Calorimeter, and many forms of flue gas apparatus.

The Electrical Laboratories are supplied with scientific and commercial instruments, and are arranged for instruction and investigation. With the space and apparatus which is allowed through the generosity of past legislatures, the equipment has been made unusually complete in the lines of continuous current and single and polyphase alternating current generation and distribution, and commercial electrochemistry and electrometallurgy.

The dynamo collection consists of a large number of continuous current and alternating-current generators and motors of vari-

ous types (including four types of arc-light machines), which are specially installed for the purpose of instruction and experiment. These are placed in a large laboratory room and are arranged to be driven by a 150 horse-power high-speed engine specially provided for the purpose. For use in testing dynamos all necessary apparatus is supplied, including large lamp banks, transformer banks, and water rheostats for loading generators; special Prony brakes, etc., for loading motors; cradle dynamometer, and accurate electrical instruments of all useful types. A transformer bank for use in instruction and testing, which represents nearly all American and some foreign products, and an equally complete bank of recording electric meters, are also located in this room.

Two large rooms are occupied by the appliances and apparatus required for instruction and experiments relating to electric batteries, electrolysis, electroplating, and electrometallurgy. Three smaller rooms are fitted up for experimental investigations. The equipment for these laboratories consists of dynamos and tanks for depositing metals and for other electrolytic processes, apparatus for cleaning, polishing, precipitating, filtering and other processes. An electric furnace room has been fitted up with rheostats and instruments for operating electric furnaces, power being supplied by a 100 horse-power generator; various electric furnaces for electrometallurgical operations requiring the intense heat of the electric arc are operated therefrom. The equipment is one of the first and most complete of its kind.

Other rooms are dedicated to work in electrical testing, measuring illumination, and various other branches of laboratory instruction and investigation.

A great number of amperemeters, voltmeters, wattmeters, wheatstone bridges, variable self-inductance and mutual-inductance boxes, condensers, galvanometers, electrodynamometers, electric balances, 100,000 ohm and megohm resistances, Clark cells, Burgess electrometer, testing sets, and other apparatus are supplied for general use, while standard aparatus for determining the adjustments of the general instruments is at hand. Special means are provided for the important functions of insulation testing, testing the magnetic qualities of metals (including a Ewing hysteresis tester and a Ewing permeability bridge), for photometry of Nernst, arc, and incandescent lamps, and for measuring the distribution of illumination (in which the equipment is very full), etc. Apparatus is also provided for classroom demonstration, such as apparatus for demonstrating the phe-

nomena of polyphase current transformation and polyphase motors, a fine set of models and charts illustrating the different forms of armature windings, etc.

A Thompson electric welder, located in the dynamo room, gives opportunity for instruction upon the electrical working of metals, and a transformer of twenty kilowatts capacity furnishes alternating current at 50,000 volts pressure for instruction in high pressure testing and the phenomena of high pressure electric power transmission. Alternating and polyphase (2-phase and 3-phase) currents of the ordinary frequencies are on tap, at the switchboards, and other frequencies may be generated at will by means of rotary transformers, one of which has a capacity of 30 kilowatts. Continuous currents of any desired value up to 1,200 amperes and pressure up to 1,000 volts can be had at will.

All electrical laboratory work is made to conform with, and to illustrate, the class-room instruction. Of the total number of hours given to instruction in the electrical engineering courses, about one-half is devoted to work in the laboratories.

The Bridge Engineering Department owns a set of Fraenkel's autographic apparatus for the testing of bridges under moving train loads. This includes two extenso-meters for measuring strains in members and a deflectometer for measuring vertical and lateral deflections. The department also possesses a large French model of a skew arch bridge, several large size iron models of bridge joints and a large collection of drawings and photographs to which additions are constantly being made.

The Assay Laboratory is situated in the south part of the basement of the chemical laboratory. It has separate rooms for furnaces, tables, wet assaying, and balances. The furnace room is supplied with eleven crucible and three muffle furnaces, as well as a small gas plant. It has steam power, a Sturtevant blower, bullion rolls, a Blake ore crusher, and other pulverizers. The table room has space for twenty-four students, and is well supplied with ordinary balances. In the balance room are first-class quantitative balances by Becker, and an Oertling gold balance.

The Surveying Laboratory. By an agreement with the director of Washburn Observatory, the surveying laboratory shares in the free use of the extensive apparatus belonging to that observatory, and including, in addition to the large equatorial telescope and the meridian circle, collimators, transit micrometers, chronograph, sidereal and meantime clocks, zenith telescopes, a transit

instrument of the broken type, chronometers, an altazimuth, a universal instrument of the German type, spherometer calipers, and a complete set of meteorological instruments.

In addition to this equipment the surveying laboratory contains all the portable, astronomical, and field instruments needed for an extensive triangulation, topographic, and hydrographic survey, also for all the work done in railway engineering, including theodolites, altazimuth, tidal gauge, heliotropes, Swiss precise-level outfit, sounding apparatus, base-line apparatus, current meters, transits, compasses, levels, plane-tables, telemeters, and such special instruments as planimeters, pantographs, sextants, computing machines, aneroid barometers, etc.

The Machine Shop affords excellent facilities for mechanical practice. It embraces a main machine room properly equipped; a carpenter shop supplied with wood-working machines; a forge room provided with forges and their equipment with blast and exhaust fan; a foundry room whose equipment consists of a cupola, brass furnace, and core oven, with the necessary small tools; a wood-work room supplied with benches, carpenter tools, and wood turning lathes; and a pattern room furnished with the requisite tools. The shop is supplied with convenient lockers, closets, and washroom with hot and cold water.

Bacteriological Laboratories. For a description of these see page 38.

The Engineering Museum contains a complete set of Schroeder's models for descriptive geometry, including shades, shadows, and perspective; also a small collection of Schroeder's kinematic models, besides a number of smaller models, made by students, illustrating problems in kinematics. An excellent industrial collection is in process of development.

The standards of weight and measure belonging to the state are kept in the civil engineering department, and all official comparisons are made here.

Inspection Tours.

An inspection tour by the members of the senior class is made each year. In this tour great manufacturing establishments and other important private and public engineering works in Chicago, Milwaukee, and elsewhere are visited. These tours are made under the guidance of the professors, and are deemed an essential part of the student's work.

Expenses.

Tuition for residents of the State of Wisconsin.....	FREE.
Tuition for non-resident students—per semester....	$20 00
General fee—first semester.....	15 00
General fee—second semester.....	15 00
Engineering periodical fee for the year.....	1 00

A laboratory fee of $1.50 per semester, for each two hours' work per week, is charged in all the engineering laboratories, and for the use of surveying instruments in the field.

Students working in any of the other laboratories of the University are also required to pay a fee or to make a deposit to cover the cost of the materials and repairs to instruments used by them. For a list of these fees, see page 49.

Rooms, furnished and unfurnished, can be obtained in the city at reasonable rates. The cost of board in clubs is from $2.25 to $3.00 per week; in private families from $2.50 to $4.00 per week.

Modern Language Required in all Courses of the College of Mechanics and Engineering.

1. When German is offered for entrance: There is required a four-fifths course in German throughout the freshman year, and a three-fifths course in technical German for one semester of the scphomore year.

2. When French is offered for entrance: There is required a four-fifths course in German or Spanish throughout the freshman year, and a three-fifths course in French for one semester of the sophomore year.

3. When four years of Latin is offered for entrance: There is required a four-fifths course throughout the freshman year, and a three-fifths course for one semester of the sophomore year in either French, German, or Spanish.

4. When neither a modern language nor Latin is offered for entrance: Students who are well prepared in all their work will be received without a preparation in modern language, but subject to a condition in the same. In this case there will be required a four-fifths course in either German or French throughout the freshman year, this being in lieu of the modern language requirements for entrance. If German be taken in the freshman year, there will be required a four-fifths course in German throughout the sophomore year, and a three-fifths course in technical German for one semester of the junior year. If French be taken in the freshman year there

will be required a three-fifths course in French for one semester of the sophomore year, and a four-fifths course in German or Spanish throughout the junior year.

For those who come up prepared in modern language, and who elect to take the course in five years, an additional modern language may be taken as a four-fifths course in the third year.

The modern language requirements, as given in the detailed statements below, must be interpreted by, and made consistent with, the general requirements as stated above.

OUTLINE OF ENGINEERING COURSES.

Freshman Year.

NOTE.—The work of the freshmen year is the same for all engineering courses with the slight exception noted in the second semester. In reckoning the hours per week required for the various studies, two hours of laboratory, draughting room, field or shop work count as one hour of class-room work, which is the unit in this outline.

FIRST SEMESTER.	Hrs. per Wk.
German 2E,* French 3, or Spanish 1	4
English 1	3
Mathematics 101, Algebra	5
Chemistry 2	3
Mechanical Drawing 1 (Descriptive Geometry)	3
SECOND SEMESTER.	
German 2E, French 3, or Spanish 1	4
English 1	3
Mathematics 102 and 103 (Trigonometry and Analytical Geometry)	5
Chemistry 2	3
Mechanical Drawing 2	3
Topographical Engineering 2 (Civil Engineers)	2
Shop Work 1 and 2 (Mechanical and Electrical Engineers)	2

CIVIL ENGINEERING COURSE.

Sophomore Year.

FIRST SEMESTER.	
Mathematics 103, and 105, (Analytic Geometry and Calculus)	5
Physics 101	5
Topographical Engineering 3, Elementary Surveying	3½
Mineralogy 2 (Blow-pipe Analysis)	2
Topographical Engineering 1, (Elementary Drawing)	1½
Mechanical Drawing 3	3

*The figures in the text refer to the numbers of the courses of study.

SECOND SEMESTER.

	Hrs. per Wk.
Mathematics 105 (Calculus)	3½
Physics 101	4
German 3E, French 7	3
Mechanics 1 and 2	7
†Topographical Engineering 4 (Advanced Surveying)	3½
†Topographical Engineering 6 (Trigonometric Survey)	2 weeks

Junior Year.

FIRST SEMESTER.

Mechanics 3	5
Hydraulics 1, and 3	3
Steam Engineering 7	2
Mechanical Laboratory 2	1
Structural Engineering 1 (Structural Details)	2
Railway Engineering 1	5
Materials of Construction 1	3

SECOND SEMESTER.

Railway Engineering 3 (Maintenance of Way)	2
Topographical Engineering 5 (Geodesy)	2
Structural Engineering 2, 3, 4a (Masonry)	4
Structural Engineering 5a (Bridge Stresses); 7a (Roof Trusses and Girders)	6
Materials of Construction 2 (Testing Laboratory)	3
Astronomy, or Electrical Installations 11	4
Topographical Engineering 6 (Trigonometric Survey)	2 weeks

Senior Year.

FIRST SEMESTER.

Structural Engineering 4b (Dams and Stereotomy)	3
Structural Engineering 5b (Bridge Stresses), 6, 7b (Bridge Design)	6
Railway Engineering 5 (Railway Economics)	2
Municipal Engineering 1 (Water Supply)	3
Elective (Geology 1, 3 hours recommended)	7

†May be taken either semester.

SECOND SEMESTER.

	Hrs. per Wk.
Railway Engineering 7 (Tunnels and Substructures)	2
Rivers and Canals 1	1½
Municipal Engineering 2 (Sanitary Engineering)	3
Municipal Engineering 4 (Roads and Pavements)	1½
Contracts and Specifications	1
Thesis and Elective (Geology 2, 2 hours recommended)	12

Graduate Courses.

For graduate students and students desiring to specialize, opportunity is afforded in the elective courses and in courses arranged on consultation with the instructors, for advanced study in railway, structural, municipal, topographic, or geodetic engineering, and for special laboratory investigations.

SANITARY ENGINEERING COURSE.

Sophomore Year.

Same as Civil Engineering Course.

Junior Year.

FIRST SEMESTER.

Mechanics 3	5
Hydraulics 1 and 3	3
Railway Engineering 1	5
Biology of Water Supplies	5
Chemistry 10	3

SECOND SEMESTER.

Railway Engineering 3 (Maintenance of Way)	2
Structural Engineering 2, 3, 4a (Masonry)	4
Structural Engineering 5a, 7a (Bridge Stresses, Roof and Bridge Design)	5
Chemistry 14 (Water Analysis)	4
Materials of Construction 1, 2	6
Topographical Engineering 6 (Trigonometric Survey)	2 weeks

Senior Year.

FIRST SEMESTER.

	Hrs. per Wk.
Steam Engineering 7 (Steam Engine)	2
Mechanical Laboratory 2	1
Structural Engineering 4b (Dams and Stereotomy)	3
Structural Engineering 6, 7b (Bridge Design)	4
Municipal Engineering 1, 3 (Water Supply)	5
Steam Engineering 8 (Heating and Ventilation)	2
Elective (Geology 1, 3 hours recommended)	3

SECOND SEMESTER.

Railway Engineering 7 (Tunnels and Substructures)	2
Municipal Engineering 2, 3 (Sewerage and Drainage)	5
Municipal Engineering 4 (Roads and Pavements)	1½
Electrical Installations 11	4
Contracts and Specifications	1
Thesis and Elective (Geology 2, 2 hours recommended)	7½

MECHANICAL ENGINEERING COURSE.

Sophomore Year.

FIRST SEMESTER.

Mathematics 103, 104 (Analytical Geometry, Calculus)	5
Physics 101	5
Shop-work, 3, 4, 5, 7, (Vise-work in Iron and Forging)	4
German 3E, or French 7	3
Mechanical Drawing 3 (Descriptive Geometry)	3

SECOND SEMESTER.

Mathematics 104	5
Mechanics 1	5
Physics 101	5
Machine Design 1 (Kinematics)	4
Shop-work 6 (Machine Work)	1

Junior Year.

FIRST SEMESTER.

Mechanics 3	5
Steam Engineering 1, 2 (Thermodynamics, Heat Engines)	5
Mechanical Laboratory 1	1
Machine Design 3 (Elementary Design)	6
Shop-work 8, 9 (Machine Work and Tool Making)	4

SECOND SEMESTER.

	Hrs. per Wk.
Materials of Construction 1	3
Hydraulics 1, 2, 3	5
Steam Engineering 3, 4 (Steam Engines, Boilers)	4
Mechanical Laboratory 1	1½
Machine Design 4 (Crane Design and Graphic Statistics)	5
Shop-work 10 (Machine Construction)	2½

Senior Year.

FIRST SEMESTER.

Applied Electro-Magnetism 2, 3 (Electrical Machinery, Laboratory)	5
Mechanical Laboratory	1½
Materials of Construction 2 (Testing Laboratory)	1½
Shop-work 12 (Construction and Pattern Work)	3½
Steam Engineering 5 (Steam Engine Design, optional)	5
Machine Design 5 (Machine Elements, Transmission of Power, optional)	5
Elective, including thesis	4½

Inspection tour through industrial establishments.

Either Steam Engineering 5, or Machine Design 5, must be taken, and it is recommended that the class work of the study not taken be elected in addition. The study selected must be taken for the entire year.

SECOND SEMESTER.

Contracts and Specifications	1
Alternating Currents 7 (Elementary Applied)	3
Steam Engineering 5 (Steam Engine Design, optional)	5
Machine Design, Machine Elements, Transmission of Power (optional)	5
From Machine Design 5, 6, 10, Steam Engineering 5, 8, 9, Mechanical Laboratory 1, and Shop-work 13	7
Thesis and Elective	5

ELECTRICAL ENGINEERING COURSE.

Sophomore Year.

FIRST SEMESTER.

French 7, or German 3e (Technical Reading)	3
Mathematics 103, 104 (Analytic Geometry and Calculus)	5
Physics 101	5
Chemistry 11, or Shop-work	3
Machine Design 1 (Kinematics)	4

SECOND SEMESTER.

	Hrs. per Wk.
Mathematics 104	5
Physics 101	5
Chemistry 11, or Shop-work 3, 5	2
Mechanics 2	5
Mechanical Drawing 3 (Descriptive Geometry)	3

Junior Year.

FIRST SEMESTER.

Mechanics 3 (Strength of Materials)	5
Physics 104 (Precision of Measurements)	2½
Applied Electro-Magnetism 1 (Electro-Magnets and Dynamos)	3
Steam Engineering 6 (Thermodynamics)	2
Machine Design 3 (Elementary Design)	5
Shop-work 8, 9 (Machine Work and Tool Making)	4

SECOND SEMESTER.

Hydraulics 1, 2	4
Steam Engineering 6 (Thermodynamics)	2
Mechanical Laboratory 1	1½
Applied Electro-Magnetism 1, 2 (Electro-Magnets and Dynamos)	5
Electrical Installations 2 (Electrical Testing)	3
Materials of Construction	3
Elective in Civil and Mechanical Engineering	2 or 3

Senior Year.

FIRST SEMESTER.

Alternating Currents 1, 2	5
Applied Electromagnetism 2 (Testing Direct Current Dynamos)	2
Mechanical Laboratory	1½
Hydraulics 3 (Laboratory)	1
Electrical Installations 3, 5, 7, 8, 10, and Applied Electrochemistry 1	7
Thesis and Elective (See note below)	4 or 5

Inspection tour through industrial establishments.

NOTE.—The thesis should consume at least five hours for one semester. The work should begin in the first semester and should usually continue through the year.

SECOND SEMESTER.

	Hrs. per Wk.
Alternating Currents 1, 2	3
From Electrical Installations 3, 4, 5, 6, 8, Alternating Currents 3, 4, Applied Electro-Chemistry 2	10
Contracts and Specifications	1
Materials of Construction 2 (Testing Laboratory)	1½
Thesis and Elective	5

Graduate Courses.

Graduates and advanced students are offered instruction in advanced theory, design, and experimental investigations relating to electrical engineering and applied electro-chemistry, as is more fully explained in later pages under Departments of Instruction, and also in earlier pages under Department of Graduate Study.

APPLIED ELECTROCHEMISTRY COURSE.

Sophomore Year.

FIRST SEMESTER.

Mathematics 103, 104 (Analytical Geometry, Calculus)	5
Physics 101	5
Machine Design 1 (Kinematics)	3
Shop-work	2
German 3E, or French 7	3
Chemistry 11	2

SECOND SEMESTER.

Mathematics 104	5
Physics 101	5
Mechanics 1	5
Shop-work 7	1
Chemistry 11	2
Mechanical Drawing 3 (Descriptive Geometry)	3

Junior Year.

FIRST SEMESTER.

Mechanics 3	5
Physics 104 (Precision of Measurements)	2½
Applied Electro-Magnetism 1, 2 (Electro-Magnets and Dynamos)	3
Chemistry 12	5
Chemistry 31 (Electrochemistry)	5

SECOND SEMESTER.

	Hrs. per Wk.
Applied Electro-Magnetism 1, 2 (Electro-Magnets and Dynamos)	5
Materials of Construction	3
Chemistry 4	5
Chemistry 31 (Electrochemistry)	5
Elective	3

Senior Year.

FIRST SEMESTER.

Applied Electrochemistry 1	5
Alternating Currents 1, 2	5
Chemistry 20	5
Steam Engineering 7	2
Mechanical Laboratory 2	1
Materials of Construction 2 (Testing Laboratory)	1½
Thesis and Elective in Mineralogy, Structures, etc. (See note below)	2

Inspection tour through industrial establishments.

SECOND SEMESTER.

Alternating Currents 1, 2	3
Electrical Installations 4, Electric Lighting and Power	3
Applied Electrochemistry 2	5
Chemical Machinery 5	2
From Electrical Installations 6, 8, 10, and Alternating Currents 3, 4	4
Contracts and Specifications	1
Thesis and Elective	4

Graduate Courses.

See page 233.

GENERAL ENGINEERING COURSE.

The subjects given below are the ones which are required, though some variation will here be allowed. Elective studies must be arranged to secure continuity of work and must be approved by the class officer. At least 15 hours per week must be taken of the studies listed in the Departments of Instruction in the College of Engineering, p. 251.

NOTE.—The thesis should consume at least five hours for one semester. The work should begin in the first semester and should usually continue through the year.

Freshman Year.

All the studies of this year are required, and are the same as in the specialized engineering courses.

Sophomore Year.

FIRST SEMESTER.

	Hrs. per Wk.
Mathematics 103 and 105 (Analytical Geometry and Calculus)	5
Physics 101	5
Mechanical Drawing 3 (Descriptive Geometry)	3
Elective (History 2, 4 hours recommended)	5 to 8

SECOND SEMESTER.

Mathematics 105 (Calculus)	3½
Physics 101	4
Mechanics	5
Elective (Economics 1, 3 hours recommended)	6 to 9

Junior Year.

FIRST SEMESTER.

Mechanics 3	5
Steam Engineering 7	2
Mechanical Laboratory 2	1
Hydraulics 1, 3	3
Elective	7 to 10

SECOND SEMESTER.

Materials of Construction 1, 2 (Testing Laboratory)	4½
Machine Design 8	3
Elective	9 to 12

Senior Year.

FIRST SEMESTER.

Applied Electro-Magnetism 2 and 3	5
Elective	13 to 16

SECOND SEMESTER.

Thesis and Elective	18 to 21

MINING ENGINEERING GROUP OF ELECTIVES.

Students who take the general engineering course may group their electives in chemistry, mineralogy, and geology in such a way as to prepare them for mining engineering. The arrangement of these electives, together with such other studies as are most desirable in a mining course, is as follows:

Sophomore Year.

FIRST SEMESTER.

	Hrs. per Wk.
Chemistry 11, 12	5
Topographical Engineering 3	3½

SECOND SEMESTER.

Chemistry 11, 12	5
Topographical Engineering 9, 10	4

Junior Year.

FIRST SEMESTER.

Mineralogy 1	5
Geology 1	5

SECOND SEMESTER.

Mineralogy 1	5
Geology 1, 2	5
Structural Engineering 2	2

Senior Year.

FIRST SEMESTER.

Railway Engineering 1	4
Machine Design 3	2
Geology 5 (two or more courses)	5
Mineralogy 3	3
Field Geology and seminary	2 or 3

SECOND SEMESTER.

Railway Engineering 7	2
Structural Engineering 9	3
Geology 2, 5	8
Petrology	5
Field Geology and seminary	2 or 3

The course of study here outlined is arranged with special reference to the needs of those who expect to work in the Lake Superior region.

The members of the geological department of the College of Letters and Science have for many years been engaged in the investigation of the mining resources of the Northwest for the U. S. Geological Survey, and they offer training for mining work in this field, and especially in the iron ores, which is surpassed in no other institution. Students who continue work in geology in a graduate course may qualify themselves for work in mining geology (as dis-

tinguished from technical mining engineering)—judging ore districts and ore deposits, directing exploration and mining development, and better qualifying themselves for mine superintendency.

If desired, students taking the mining group will usually be able to obtain their degree in mining engineering at a mining school in one additional year. Students who thus take a five-year course will secure a broader and better training than they would by entering a mining school at the outset and completing their course in four years.

ELECTIONS FOR STUDENTS IN THE COLLEGE OF LETTERS AND SCIENCE.

Students who plan to graduate in engineering, after taking a degree in the College of Letters and Science, should aim to make the following elections during their undergraduate course, in order that the engineering course may be completed in two additional years:

Freshman Year.

Mathematics, 101, 102, and 103; Mechanical Drawing; Chemistry, 2; Modern Language.

Sophomore Year.

Mathematics, 103 and 105; Physics, 101; Topographical Engineering, 1, 3, and 4, or Machine Design, 1 and 2; Applied Mechanics, 1.

It would be well also to elect some or all of the freshmen and sophomore shop-work, as an extra study.

GRADUATION IN MORE THAN ONE OF THE ENGINEERING COURSES.

Graduates in any of the engineering courses may graduate in any other engineering course after one year of additional study. Students who contemplate doing this should, however, make their elections, especially in the senior year, with this end in view.

DEPARTMENTS OF INSTRUCTION.

The unit of reckoning is one hour of class-room work per week, making a one-fifth study. Two hours of draughting, laboratory, field or shop-work (which require no outside preparation) count as one hour of recitation.

French.

MR. PATZER AND DR. BRAUER.

3. Special Elementary Course for Engineers, essentially as follows: *Roman d'un Jeune Homme Pauvre, La Petite Fadette, Le Cid, Le Misanthrope. Throughout the year; M., Tu., W., Th., at* 8. Mr. PATZER. *M., Tu., W., Th., at* 9. Dr. BRAUER.

7. Scientific French reading for Engineers. Continuation of course 3. Herdler's Scientific Reader, Luquien's Popular Science, and other scientific prose. *First semester; M., W., F., at* 2. Dr. BRAUER.

Any of the other courses in French are open to properly qualified students of the College of Engineering.

German.

MR. MEISNEST, DR. HANDSCHIN, AND MR. GOODNIGHT.

2E. *First Semester:* Narrative and historical prose. Grammar and composition. *Second semester:* Introductory scientific prose. *Four times a week at* 8 *and* 9. *Four sections.* Required of freshmen, unless French is elected.

3E. Advanced prose on subjects of technical science and current engineering literature. *Three times a week for first or second semester at* 12. *Two sections.* For sophomores.

Spanish.

ASSISTANT PROFESSOR GIESE AND PROFESSOR OWEN.

1. Elementary. Translations into English of the Spanish exercises in Sauer's *Conversation Grammar.* Knapp's *Spanish*

Readings and Marsh's *Dona Perfecta. Throughout the year; three times a week.* Professor OWEN.

3. Elementary.. Giese's First Spanish Book. *Throughout the year; M., T., W., F., at* 9. Assistant Professor GIESE.

English.

ASSISTANT PROFESSOR PYRE, MR. DODGE, DR. BEATTY, MR. BLEYER, MR. SYPHERD, MR. COOK, MR. DAGGY, MR. LAIRD.

1. Freshman English. English Prose Style. Composition. *Three hours a week throughout the year.* For hours and rooms see time table of required studies. Required of freshmen in all courses.

14. Elocution. Voice training and plain reading and speaking. *First semester; three times a week.*

Elective for engineers.

Physics.

ASSISTANT PROFESSOR TROWBRIDGE, DR. WILDER, MR. MILLER, MR. WILCOX, MR. ANGELL, MR. KELLY, AND MR. TERRY.

101. General Lectures and Introductory Laboratory Practice. Required of sophomores in engineering. *Lectures M., W., at* 3. Assistant Professor TROWBRIDGE. *Two recitations by the class in sections at hours to be assigned.* Assistant Professor TROWBRIDGE and Dr. WILDER. Laboratory practice. *Twice a week throughout the year.*

104. Advanced Laboratory Course in Electrical and Magnetic Measurements. Testing and calibration of electrical instruments, and determination of constants. Required of juniors in Electrical Engineering. *Two and one-half hours per week during the first semester.* Dr. WILDER.

Chemistry.

PROFESSOR DANIELLS, PROFESSOR KAHLENBERG, ASSISTANT PROFESSOR HILLYER, ASSISTANT PROFESSOR LENHER, AND ASSISTANTS.

2. General Chemistry for freshmen of the College of Engineering and of the School of Commerce. *Three-fifths study. Two lectures, one recitation, and one three-hour laboratory period weekly throughout the year.* Assistant Professor LENHER and assistants.

4. Chemical Preparations. Laboratory course in the preparation of typical inorganic compounds. Assistant Professor LENHER.

11. Analytical Chemistry for Electrical and Electrochemical Engineers. *Two-fifths study for sophomore year. First semester,* qualitative analysis. *Second semester,* quantitative analysis. Professor DANIELLS and Mr. HUTCHINS.

12. Quantitative Chemical Analysis for Engineers; continuation of course 11. *Three-fifths study throughout the junior year.* The analysis of metals, ores, minerals, and economic products. Professor DANIELLS and Mr. HUTCHINS.

14. Water Analysis for students in Sanitary Engineering. *Five-fifths study during the second semester.* Professor DANIELLS.

20. Organic Chemistry. *Five-fifths study throughout the first semester.* Work of a similar character may be continued in the second semester. Required of seniors in applied electrochemistry. Assistant Professor HILLYER.

24. Electrolysis and Electrosynthesis of Organic Compounds. Conferences once a week with laboratory work. *Three-fifths study during second semester.* Assistant Professor HILLYER.

30. Physical Chemistry. General Course. The lectures and recitations are supplemented by laboratory exercises in physico-chemical measurements, thus making a full study. This course must be preceded by course 1 in chemistry. *Five-fifths study throughout the year. Lectures and recitations, first semester; Tu., Th., at* 8. *Second semester; W., F., at* 8. Professor KAHLENBERG.

31. Electrochemistry. Lectures and recitations twice a week. Laboratory work in electro-chemical measurements and in electrolysis of various chemical compounds supplements the lectures and with them makes a *five-fifths* study. *Lectures during the first semester; laboratory work, throughout the year.* Professor KAHLENBERG and Dr. SCHREINER.

32. Thermal Chemistry. *Lectures M. at* 8, *and one period of three hours of laboratory work per week. Second semester.* Professor KAHLENBERG.

33. Special Laboratory Course in Physical Chemistry. This course is for seniors in engineering who desire an acquaintance with the methods of physico-chemical measurement. *Daily, first semester; hours to be arranged.* Professor KAHLENBERG.

36. Research work in Physical Chemistry. *Daily throughout the year; hours to be arranged.* Professor KAHLENBERG.

50. Assaying. A course in practical assaying. *Second semester; hours to be arranged.* Assistant Professor LENHER.

Mineralogy.

PROFESSOR HOBBS.

1. General Course. Prerequisite, a general course in chemistry. Trigonometry should be taken if possible. *First semester; M., Tu. W., Th., F., at* 11. *Second semester; M., Tu., W., Th., F., (a) at* 11; *(b), after Easter, at* 11 *to* 1.
2. Short Course. This course is required of civil engineers in their sophomore year. *Four hours of laboratory work a week. First semester.*
3. Optical Mineralogy. Lectures, quizzes, and laboratory work with the polarizing microscope. A prerequisite to petrology. *First semester; M., W., F.,* 9 *to* 11.

Geology.

PROFESSOR VAN HISE AND ASSISTANT PROFESSORS CLEMENTS AND LEITH.

1. Part I. General Geology. *First semester to holiday recess; M., Tu., W., Th., F., or M., W., F., at* 12. Professor VAN HISE.

   Part II. Historical Geology. Special emphasis is given to the history of the North American continent. *First semester from holiday recess; M., Tu., W., Th., F., or M., W., F., at* 12. Assistant Professors CLEMENTS and LEITH.

   Recommended for seniors in civil engineering. This course is so arranged that it can be taken as a three-fifths or five-fifths study for the first semester.
2. Part I. Economic Geology. Must be preceded by course 1. Two-fifths study. *First six weeks of second semester. M., Tu., W., Th., F., at* 12. Assistant Professor CLEMENTS.

   Part II. Field Geology. Study of selected areas adjacent to Madison. This course may be taken by students having had course 1 as a five-fifths study. Three-fifths study. *The last twelve weeks of second semester. F.,* 2-6, *Sat.,* 9-1, *and* 2-6. Assistant Professor CLEMENTS and Professor VAN HISE.
3. Systematic Paleontology. *First semester; M., W., F. Hours to be arranged.* Assistant Professor CLEMENTS.

4a. Petrology. The characteristics of rocks and their geological field classification. *Second semester; Tu., Th., at* 9-11.

4b. Microscopic petrology. The study of rocks as mineral aggregates with the aid of the petrographical microscope. *Second semester; M., W., F.*, 9-11. Professor HOBBS.

5. Graduate Courses. The epigene and hypogene phenomena of physical geology, as seen in the field and in the laboratory, are treated with reference to the laws of energy.

a. General Physical Geology. Lectures and laboratory work. (Given in 1900-1901.) Professor VAN HISE.

b. Principles of Metamorphism and the Metamorphic Rocks. Lectures and laboratory work. (Given in 1901-1902.) Professor VAN HISE.

c. Principles controlling the Deposition of Ores. (Given in 1902-1903.) Professor VAN HISE.

d. Lake Superior Geology. A systematic study of the iron and copper districts. (Given in 1902-1903.) Assistant Professor LEITH.

All of these subjects are considered from the point of view of the investigator. In any one year only two of the courses, a, b, c, and d are given. The course selected for any year depends upon the needs of the advanced students. Each of the courses runs through the year in such a manner as to be equivalent to a full study for one semester.

6. Graduate work in petrology can be elected by students who have had the necessary preparation.

7. Research Work for Graduates. Research work adapted to the individual applicant is offered.

A full or double study, as desired by the individual students. Professor VAN HISE, Professor HOBBS, and Assistant Professor LEITH.

8. Geological Seminary. *Tuesdays and Thursdays from 4 to 6.* Conducted by Professor VAN HISE.

Astronomy.

PROFESSOR COMSTOCK.

6. Astronomical Practice. The theory and use of instruments of precision and the determination of time, latitude, longitude, the direction of the meridian, etc.

7. Method of Least Squares. *Second semester; M., Tu., W., Th.*, 2-4.

Elective for juniors in civil and sanitary engineering.

Biology of Water Supplies.

MR. FROST.

36. Biology of Water Supplies. Lectures and laboratory work. This course is adapted to the needs of students in sanitary engineering. *First semester. Full study.* Mr. FROST.
Required of juniors in sanitary engineering.

Mechanical Drawing.

ASSISTANT PROFESSOR PHILLIPS AND MR. MILLAR.

1. Elements of Draughting. Geometrical constructions; orthographic, isometric, and cabinet projections; freehand lettering and sketching. Tracy's Mechanical Drawing. *First semester. One lecture, one recitation, and one two-hour draughting period weekly Three-fifths credit.* Assistant Professor PHILLIPS and Mr. MILLAR.
Required of freshmen in engineering.
2. Elements of Draughting. Sections and intersections; freehand lettering; shades, shadows, and perspective. Tracy's Mechanical Drawing. *Second semester. One lecture, one recitation, and one two-hour draughting period weekly. Three-fifths credit.* Assistant Professor PHILLIPS and Mr. MILLAR.
Required of freshmen in engineering.
3. Descriptive Geometry. Problems relating to the point, line, and plane. The generation and classification of lines and surfaces; planes tangent to surfaces of single and double curvature; intersections, developments, and revolutions. Church's Descriptive Geometry. *First semester* for civil and mechanical engineering students. *Second semester* for electrical engineering students. *One lecture, two recitations, and one three-hour drafting period weekly. Three-fifths credit.* Assistant Professor PHILLIPS and Mr. MILLAR.
Required of sophomores in engineering.
4. Freehand Lettering. A continuation of the lettering work in courses 1 and 2. *First semester. One two-hour period weekly. Two-fifths credit.* Assistant Professor PHILLIPS.
Elective for engineering students.
5. Sketching. In perspective. Architectural, bridge, and machine details. *Second semester. One two-hour period weekly. Two-fifths credit.* Assistant Professor PHILLIPS.
Elective for engineering students.

Applied Mechanics.

PROFESSOR MAURER, MR. BURNSIDE, AND MR. DAVIS.

1. Analytic Statics and Strength of Materials. With special reference to the requirements of engineers. *Second semester; M., Tu., W., Th., F., at* 10 *or* 11. Professor MAURER and Mr. BURNSIDE.

   Required of sophomores in engineering.

2. Graphic Statics. Co-ordinated with analytical statics. The work consists mainly of draughting, four hours per week. *Second semester.* Professor MAURER, Mr. BURNSIDE, and Mr. DAVIS.

   Required of sophomores in civil and sanitary engineering.

3. Strength of Materials and Dynamics. In part, a continuation of course 1. Dynamics of rigid bodies mainly. *First semester; M., Tu., W., Th., F., at* 10 *or* 11. Professor MAURER and Mr. BURNSIDE.

   Required of juniors in engineering.

4. Advanced Mechanics. A course supplementary to the theoretical mechanics required of engineers. *First semester; two hours a week.* Mr. BURNSIDE.

5. Advanced Mechanics of Materials. An elaboration of the required course in this subject. *Second semester; two hours a week.* Professor MAURER.

   Open to students who have completed courses 1 and 3, or the equivalent.

The Materials of Construction.

PROFESSOR TURNEAURE, PROFESSOR RICHTER, AND MR. HARTMAN.

1. A review of the principles of mechanics applicable to the strength of material at rupture, the methods of manufacture, the methods of testing, and the physical properties of the materials of engineering construction. *Three hours per week; repeated each semester.* Professor TURNEAURE.

   Required of all juniors in engineering.

2. Testing of Materials of Construction. Each student is required to make a definite series of tests of structural materials. For mechanical and electrical engineering seniors, *one and one-half hours credit;* and for civil engineering juniors *three hours credit.* Professor RICHTER and Mr. HARTMAN.

3. Testing Materials. An advanced course will be offered, the special line of work to be agreed upon after consultation with the professors in charge. *M., W., hours to be assigned.* Professor RICHTER.

Open to graduate students and to those students who have completed course 2.

Topographic and Geodetic Engineering.

ASSISTANT PROFESSOR SMITH AND MR. DAVIS.

1. Topographic Drawing and Free-hand Lettering. *First semester; second half,* 48 *hours in draughting room.*

Required of sophomores in civil and sanitary engineering.

2. Elementary Surveying. Text: Johnson's *Surveying* and Smith's *Field Manual. Throughout the year. Recitations M., W., at* 8 *or* 9. *Field work, S.,* 8 *to* 1. First 9 weeks of first semester or last half of second semester.

Required of freshmen for one semester in civil and sanitary engineering.

3. Elementary Surveying. This course is a continuation of course 2, and includes the field and office work of a variety of practical problems in the use of the engineer's transit and level. *First semester; recitations Tu., Th., at* 8 *or* 9. *Field work first nine weeks;* (51 *hours*). Section B, *M., W., F.,* 8 *to* 10, and *M.,* 2 *to* 4. Section A., *W., and F., at* 2 *to* 4, and *S.,* 8 *to* 1. *Three and one-half hours credit.*

Required of sophomores in civil and sanitary engineering.

4. Advanced Surveying. This course is a continuation of course 3, and includes a study of the higher instruments of precision, and their use in topographic and hydrographic survey. *Second semester; Tu., Th., at* 10. *First thirteen weeks. Field work* (50 hours). Section I., *M.,* 2 *to* 4, *W.,* 2 *to* 6. Section II, *S.,* 8 *to* 1, *T.,* 2 *to* 4. *Last eight weeks. Three and one-half hours credit.*

Required of sophomores in civil and sanitary engineering.

5. Elementary Geodesy. Text: Johnson's *Surveying. Second semester; M., W., at* 10.

Required of juniors in civil and sanitary engineering.

6. Trigonometrical Survey. This course furnishes the necessary field work for illustrating course 5. Each year a portion of the neighboring lake region will be covered by an accurate triangulation, and also by a topographic and hydrographic

survey. Survey begins the Monday of examination week and continues for two weeks (120 hours). Professors SMITH, TURNEAURE, TAYLOR and Mr. DAVIS.

Required of sophomores and juniors in civil and sanitary engineering.

7. Advanced Geodesy. Lectures, assigned readings, field work. Text: Wright's *Adjustment of Observations. First semester. Two hours per week.*

Elective for seniors in civil engineering and for graduates who have taken courses 2, 3, 4, and 5, or their equivalents.

8. Short course in Surveying. This course is planned to meet the demands of M. E. and E. E. students for a general study of the subject, including the use of both transit and level. *First semester; three-fifths credit.* Elective.

9. Rapid Topography. This course is adapted for training topographers for the U. S. Geological Survey.

Elective for seniors in civil engineering and for others who have had course 2.

10. Mining Surveys. Field and office work for an underground survey. *Second semester.* (60 *field hours.*)

Elective for students who have had topographic engineering 2 and 3.

11. City Surveying, topographic and cadastral. Lectures, assigned readings, and field work. *Two hours a week.*

Elective for juniors or seniors in sanitary engineering.

Railway Engineering.

PROFESSOR TAYLOR AND MR. DAVIS.

1. Railway Surveying. The theory and practice in field and office, necessary to survey and construct a new railway line, and to improve or reconstruct an old one.

First semester, full study. Class room, twice a week; 108 hours field and office work in afternoon and Saturday forenoon.

3. Maintenance of Way. *Second semester; Tu., Th., at* 11; 32 *hours in the class room.*

Required of juniors in civil and sanitary engineering.

4. A short course in the above subjects, especially adapted to city and interurban railways, and including masonry constructions and foundations, is offered as an elective to those who have had course 2 in topographical engineering. *First semes-*

ter; 18 hours in class room, and 36 hours in the field and office. M., at 8, and from 2 to 5.

5. Railway Economics. *First semester; Tu., Th., at 9; 36 hours in the class room.*
   Required of seniors in civil engineering.
6. Railway Standards. Continuation of courses 3 and 5. It is intended to give the student some degree of familiarity with designing various railway standards. *First semester.*
   Elective for seniors in civil engineering, and for graduates.
7. Tunneling and Substructures. The various methods of tunneling, shaft-sinking, ordinary and deep-foundation work. *Second semester; M., W., at 9; 32 hours in the class room.*
   Required of seniors in civil engineering.
8. Municipal Railways. *Second semester.*
   Elective for seniors in civil engineering, and for graduates.
9. For course in railway transportation, see course 15 under the head Economic History, which is offered as an elective to seniors and graduates in civil engineering.

Rivers and Canals.

PROFESSOR TAYLOR.

1. River and Harbor Improvement and Canal Construction. *Second semester; M., W., and F., at 11 for the last half of the semester; 24 hours in the class room.*
   Required of seniors in civil engineering.

Hydraulic Engineering.

PROFESSOR BULL, PROFESSOR MAURER, PROFESSOR RICHTER, AND MR. MERRILL.

1. Hydraulics. Civil engineering students, *first semester; Tu., Th., at 9;* mechanical and electrical engineering students, *second semester; first seven weeks; M., Tu., W., Th., at 10.* Required of juniors in engineering. Professor MAURER.
2. Hydraulic Motors and Pumping Machinery. *Second semester.* Required of juniors in mechanical and electrical engineering. *M., Tu., W., Th., at 8. Eleven weeks during second semester (45 hours in class room).* Professor BULL.
3. Hydraulic Laboratory. (*30 hours in laboratory.*) Required of juniors in civil and mechanical engineering. Civil engineering students, *first semester, last nine weeks;* mechanical

engineering students, *second semester*. Professor RICHTER and Mr. MERRILL.

Required of seniors in electrical engineering during the first nine weeks of the first semester.

Structural Engineering.

PROFESSOR TURNEAURE, PROFESSOR TAYLOR, AND MR. DAVIS.

1. Structural Details. The designing of simple forms of members and of joints in wood and iron, and of wooden roof and bridge trusses. *First semester; Tu., Th.*, 8 *to* 10. Professor TURNEAURE.

   Required of juniors in civil engineering.

2. Masonry Construction. Theory governing the design of masonry structures and foundations. *Second semester; Tu., Th., at* 10; 36 *hours in class room.* Professor TAYLOR.

   Required of juniors in civil and sanitary engineering.

3. Engineering Architecture. Treats of those principles of artistic design applicable to engineering structures, especially those of masonry. *Second semester; four lectures in connection with course* 4.

4. Masonry Arches, Dams, and Stereotomy.

   a. Arches. Discussion of the theory of the stability of masonry arches followed by the complete design of an arch with specifications and estimates of cost. *Second semester; two-fifths study; F.*, 8 *to* 10, 2 *to* 4.

   Required of juniors in civil and sanitary engineering.

   b. Dams; Stereotomy. A design for high masonry dam is made, followed by several problems in stereotomy. *First semester; M., W., F.*, 10 *to* 12. Professor TAYLOR and Mr. DAVIS.

   Required of seniors in civil and sanitary engineering.

5. Bridge Stresses.

   a. Simple Bridge Trusses. *Second semester; M., W., F., at* 11. Professor TURNEAURE.

   Required of juniors in civil and sanitary engineering.

   b. Suspension, Swing, Cantilever, and Arch Bridges. *First semester; M., W., at* 9. Professor TURNEAURE.

   Required of seniors in civil engineering.

6. Bridge Design. Theoretical considerations. *First semester; F., at* 9; 18 *hours in class room.* Professor TURNEAURE.

   Required of seniors in civil and sanitary engineering.

7. Designs and Estimates. In this course each student makes a complete design of one structure of each class mentioned below, prepares detail drawings and makes an estimate of the quantity of material and cost; complete working drawings are made of at least one structure.

(a) Roof Trusses and Plate Girders. *Second semester; M., Tu., Th.,* 8 *to* 10; 96 *hours in draughting room.* Professor TURNEAURE.

Required of seniors in civil and sanitary engineering.

(b) Riveted and Pin-Connected Trusses. *First semester; Tu., Th.,* 10 *to* 1; 96 *hours in draughting room.* Professor TURNEAURE.

Required of seniors in civil and sanitary engineering.

(c) Swing Bridges. Design of truss, turn-table and operating machinery. *Second semester;* 72 *hours in the draughting room.* Professor TURNEAURE.

Elective for seniors and graduates in civil engineering.

8. Advanced Theory and Experimental Work. Higher structures, secondary stresses, and tests on bridges under moving loads. *Two hours a week, one or two semesters.* Professor TURNEAURE. Open to seniors and graduates.

9. Structural Design. Short general course in the designing of roofs and buildings. *Second semester; three-fifths study.* Professor TURNEAURE.

Elective for students in electrical and mechanical engineering who have had mechanics 3.

Municipal and Sanitary Engineering.

PROFESSOR TURNEAURE, PROFESSOR TAYLOR, AND MR. KIRCHOFFER.

1. Water Supply Engineering. *First semester; M., W., F., at* 8. Mr. KIRCHOFFER.

Required of seniors in civil and sanitary engineering.

2. Sanitary Engineering. Sewerage and sewage disposal works. *Second semester; M., W., F., at* 10. Mr. KIRCHOFFER.

Required of seniors in civil and sanitary engineering.

3. Designs of Water Supply and Sewerage Systems. Complete designs and estimates of water supply and sewerage systems and purification plants. *First and second semesters; four hours draughting a week.* Mr. KIRCHOFFER.

Required of seniors in sanitary enginering; elective for others.

4. Roads and Pavements. *Half of second semester; M., W., F., at* 11. Professor TAYLOR.

Steam Engineering.

PROFESSOR BULL AND MR. THORKELSON.

1. Thermodynamics. This course covers those principles of the mechanical theory of heat which are preliminary to the study of the various kinds of heat engines. *First semester, first ten weeks; M., Tu., W., Th., F., at* 12 (50 *hours in class room*). Mr. THORKELSON.

   Required of juniors in mechanical engineering.

2. Theory of Heat Engines. The study is partly given by lectures; for a large part of the work Peabody's *Thermodynamics* is used. *First semester, last eight weeks; M., Tu., W., Th., F., at* 12 (40 *hours in class room*). Mr. THORKELSON.

   Required of juniors in mechanical engineering.

3. Steam Boilers. The general subject of combustion and its application to steam boilers. Peabody's and Miller's *Steam Boilers.* The study is partly taught by lectures. *Second semester, first nine weeks; T., W., Th., F., at* 9 (36 *hours in class room*). Mr. THORKELSON.

   Required of juniors in mechanical engineering; open to all who have had either course 1 or course 6.

4. Valve Gears of Steam Engines. Peabody's *Valve Gears for Steam Engines. Second semester, last nine weeks; Tu., W., Th., F., at* 9 (36 *hours in class room*). Mr. THORKELSON.

   Required of juniors in mechanical engineering.

5. Design of the Steam Engine. Taught by lectures supplemented by the work in the draughting room, where each student is required to work out a complete problem. Class work: *First semester, M., W., at* 10; *second smester, Tu., Th., at* 11 (72 *hours in class room*). Draughting: *First semester, Tu., Th.,* 8 *to* 11; *second semester, M., W., F.,* 11 *to* 1 (216 *hours in draughting room*). Professor BULL.

   Required of seniors in mechanical engineering.

6. Short Course in Thermodynamics, the Steam Engine, and the Steam Boiler. *First and second semester, Tu., Th., at* 8 (72 *hours in class room*). Professor BULL and Mr. THORKELSON.

   Required of juniors in electrical engineering.

7. Course in Steam Engineering for Civil Engineers. *First semester; first* 12 *weeks, M., W., F., at* 11; 36 *hours.* Mr. THORKELSON.

Required of juniors in civil engineering, and of seniors in sanitary engineering and in the course of applied electrochemistry.

8. Heating and Ventilation. *First semester; M., W., F., at* 11; 36 *hours.* Professor BULL.

9. Gas and Gasoline Engines. Treated both from a theoretical and an experimental point of view. *Second semester; M., W., F., at* 9 (54 *hours in class room*). Professor BULL.

10. Advanced Course in Steam Engineering. Lectures and assigned readings. *First and second semester; M., W., F., at hours to be assigned.* Professor BULL.

Open to graduate students and to those who have completed courses 1, 2, 3, 4, and 5 in steam engineering.

11. Compressd Air and its Applications. Text book: Hiscox's *Compressed Air. First semester; two hours a week.* Mr. THORKELSON.

Elective for all who have had a course in thermodynamics.

Mechanical Laboratory.

PROFESSOR RICHTER AND MR. MERRILL.

1. Mechanical Laboratory. Determination of the efficiencies of and losses occurring in the steam boiler, and steam, gas and gasoline engines, air compressors, refrigerating plants, transmission of power, etc. The class makes a complete 24-hour test of a large power plant not connected with the University. Professor RICHTER and Mr. MERRILL.

Four hours a week during the last nine weeks of the first semester, and three hours a week during the second semester of the junior year. Also three hours a week during the first semester of the senior year.

Required of juniors and seniors in mechanical engineering.

Three hours a week during the second semester, junior year, and first semester, senior year.

Required of juniors and seniors in electrical engineering.

2. Mechanical Laboratory. Abridged course for civil engineers. *Three hours a week during the last twelve weeks of the first semester; M., W., F.,* 11 *to* 1. Professor RICHTER and Mr. MERRILL.

Required of juniors in civil engineering, of seniors in sanitary engineering, and in the course of applied electrochemistry.

3. Advanced Courses in Laboratory Work. Advanced courses will be offered in any of the different lines of experimental work, to conform with the special line of work the student wishes to follow. Stress will be laid on original research and investigation. *Tu., Th., at hours to be assigned.* Professor RICHTER.

Open to graduate students and to those who have completed the required courses in the line they wish to follow.

Machine Design.

ASSISTANT PROFESSORS MACK AND ZIMMERMAN.

1. Kinematics of Mechanisms. The relative motions of machine parts, including belting, toothed gears, cams, and linkages. *First semester,* electrical engineers; *second semester,* mechanical engineers; *two hours in class room, and four hours draughting per week.* Assistant Professor ZIMMERMAN.

Required of sophomores in mechanical and electrical engineering.

3. Elementary Machine Design. A continuation of mechanical drawing and kinematics. *First semester; two hours in class room and six hours in draughting room* for electrical engineering students, and *one hour in class room and ten hours in draughting room a week* for mechanical engineering students. Assistant Professor MACK.

Required of juniors in mechanical and electrical engineering.

4. Machine Elements and Power of Transmission Devices. The form, strength and proportions of the frames and moving parts of machines are studied in connection with the stresses due to the load supported, the moving parts, and the work done by the machine. *Second semester; two hours in class room and six hours draughting a week.*

Required of juniors in mechanical engineering. Assistant Professor MACK.

5. Continuation of course 4, and design of complete machines of different types, including punching machinery, machine tools, special and automatic machinery. A study is made of various methods of construction relative to cost, facilities, etc. *Throughout the year. Two hours class and six hours draughting a week.* Assistant Professor MACK.

Elective for seniors in mechanical engineering.

6. Patent Office Drawing. A course giving practice in the preparation of drawings as required by the U. S. Patent Office. *Amount and time arranged upon consultation.* Assistant Professor MACK.

Open to all who have had course 1 in mechanical drawing.

7. Special and Automatic Machinery. *Four hours draughting a week.* Assistant Professor MACK.

Elective for seniors in mechanical engineering.

8. General Survey of Kinematics and Elements of Machine Design. Practice in making of working drawings. *Throughout the year. One hour class and four hours draughting a week.* Mr. ZIMMERMAN.

Elective for general engineering students.

9. Similar to course 8, but suited to the requirements of students in civil and sanitary engineering. *Throughout the year. One hour class and four hours draughting a week.* Assistant Professor MACK.

Elective for juniors and seniors in civil and sanitary engineering.

10. Mechanical Engineering Seminary. The seminary gives an opportunity for the study and discussion of general and special features and problems which are not included in regular courses. The current mechanical engineering literature is regularly reviewed.

Elective for seniors in mechanical and electrical engineering. *Throughout the year. Two hours a week.* Professor BULL and Assistant Professor MACK.

Applied Electromagnetism and the Construction of Dynamos.

ASSISTANT PROFESSOR SWENSON, MR. SHUSTER, AND MR. SCOTT.

1. Electromagnets and Dynamos. A discussion of the simple forms of electromagnets; the development of the laws of magnetization by electric currents; the laws of simple magnetic circuits and the windings of electromagnets; the practical design, construction, management, and testing of dynamos. *Three times a week throughout the year.* Assistant Professor SWENSON.

Required of juniors in electrical engineering and in applied electrochemistry.

2. Testing Direct-Current Dynamos. Laboratory work with generators, motors, and accessory apparatus. *Twice a week throughout the year.* Mr. SHUSTER and Mr. SCOTT.

Required of juniors in electrical engineering and applied electrochemistry during second semester and of seniors during first semester. Required of seniors in mechanical engineering during first semester.

3. Electrical Machinery and Appliances. A short course in the theory, construction, management, and testing of direct-current generators, motors, and sundry appliances. *Three times a week during the first semester and twice a week during the second semester.* Assistant Professor SWENSON.

Required of seniors in mechanical engineering during the first semester and elective during the second semester.

4. Advanced Design and Construction of Large Direct-Current Dynamos. By seminary method, following the treatment of the subject outlined by Fischer-Hinnen and E. Arnold. This course includes the working out of complete designs. *Either a three or five-hour course throughout the year.* Assistant Professor SWENSON.

Open to graduates and others who have had the equivalent of courses 1 (or 3) and 2.

Alternating Currents and Alternating-Current Machinery.

PROFESSOR JACKSON, MR. SHUSTER, AND MR. SCOTT.

1. Theory and Application of Single-Phase Alternating Currents. The theory of the generation and utilization of alternating electric currents; the design, construction, and operation of single-phase alternating-current dynamos and transformers; and methods for testing alternating-current machinery. *Three times a week during the first semester, and once a week during the second semester.* Professor JACKSON.

Required of seniors in electrical engineering and applied electrochemistry. Elective for graduates.

2. Testing Alternating Current Machinery and Appliances. The testing and operation in the laboratory of single-phase alternating-current generators, motors, transformers, meters, and other appliances. *Twice a week throughout the year.* Mr. SHUSTER and Mr. SCOTT.

Required of seniors in electrical engineering and applied electrochemistry. Elective for graduates.

3. Elementary Polyphase Currents. Following the treatment in Jackson's *Alternating Currents and Alternating-Current Ma-*

chinery. Twice a week during the second semester. Professor JACKSON.

Open to students who have had the equivalent of courses 1 and 2.

4. Testing Polyphase Machinery and Appliances in the Laboratory. *Once a week during the second semester.* Mr. SHUSTER.

Open to students who are pursuing or have completed course 3.

5. Vector Theory of Alternating Currents. Open to adequately prepared students who desire to obtain a reasonably brief vector treatment of alternating currents and the properties of alternating current circuits. *Once a week throughout the year.* (Omitted in 1903-1904.) Professor JACKSON.

Open to seniors and graduates.

6. Advanced Course in Alternating Currents (including Polyphase Currents and Machinery). A study of the methods of treatment presented by Rodet, Kraemers, Steinmetz, Kapp, and Loppé et Bouquet, with lectures which treat in detail the properties of alternating-current circuits and machinery. *Three times a week throughout the year.* Two hours of laboratory work may be elected in addition. Professor JACKSON.

Open to graduates and others with requisite preparation.

7. Elementary Applied Alternating Currents. A short course in the theory, construction, management, and testing of alternating-current machinery and appliances. *Three times a week during the scond semester.* Professor JACKSON.

Required of seniors in mechanical engineering. Open to all who have completed the equivalent of one semester of applied electromagnetism 3.

Applied Electrochemistry and Electrometallurgy.

ASSISTANT PROFESSOR BURGESS.

1. Laws, Principles, and Theories Involved in Electrolytic Phenomena. Primary and secondary cells; the electro-deposition of metals in plating, electrotyping, and refining. Class room and laboratory instruction. Must be preceded by courses in chemistry. *Five times a week throughout first semester.* Assistant Professor BURGESS.

Required of seniors in applied electrochemistry. Open to seniors and graduates.

2. Industrial Applications of Electrochemistry. The various electrochemical products and processes which have become of tech-

nical importance. *Two times a week in class and two or more times a week in laboratory through second semester.* Assistant Professor BURGESS.

Required of seniors in applied electrochemistry. Open to all students who have completed course 1.

3. Laboratory Work. Lines of experimental investigation assigned by the instructors, together with occasional conferences and written dissertations. *Three or five times a week throughout the year.* Assistant Professor BURGESS.

Elective for students who have completed courses 1 and 2 and the course in theoretical electrochemistry.

4. Electricity Applied to the Treatment of Metal Surfaces. Electrolytic principles involved in the corrosion of metals; methods for preventing corrosion, including electroplating, galvanizing and cleaning metal surfaces. *Once a week throughout first semester.* Assistant Professor BURGESS.

Elective for students in civil and mechanical engineering.

5. Chemical Machinery and Appliances. Consideration of machinery and appliances used in the chemical industries, and chemical engineering problems. *Second semester; twice a week.*

Required for seniors in applied electrochemistry. Open to seniors and graduates.

Electrical Installations.

PROFESSOR JACKSON, ASSISTANT PROFESSOR SWENSON, AND MR. SHAAD.

2. Electrical Testing. The construction, testing, maintenance, and operation of lines and appliances, used in telephony, telegraphy, and electric signalling. *Second semester; three times a week.* Mr. SHAAD.

Required of juniors in electrical engineering.

3. Testing Wires and Cables. Laboratory practice in insulation and breakdown tests, location of faults, testing insulators, etc. Study of the phenomena produced by high pressures on electric circuits. *Either semester; twice a week.* Mr. SHAAD.

Open to seniors and graduates.

4. Electric Lighting and Transmission of Power. Theory and practice in the construction and operation of lines. The construction of appliances for the transmission and distribution of electrical power. *Second semester; three times a week.* Mr. SHAAD.

Open to seniors and graduates. Required of seniors in applied electrochemistry.

5. Graduate Conference. A conference or seminary for the detailed study of engineering problems.

Open to seniors and graduates.

6. Electric Railways. The road-bed, rolling stock, electric circuits, and power plants. Location, construction and operation. *Second semester; three times a week.* Assistant Professor SWENSON.

Open to seniors and graduates.

7. Electricity in Mining and Quarrying. The practice in mining and quarrying where electrical machinery can be satisfactorily applied. *First semester; once a week.* Professor JACKSON.

Open to senors and graduates.

8. Central Station Design, Management, and Estimates. *First semester, twice a week; second semester, three times a week.* Professor JACKSON.

Open to seniors and graduates.

9. Inspection Tours. An inspection tour is made at the Easter recess and another at the end of the second semester. Each student is expected to accompany two of the parties during the last two years of his course if possible. The tours comprise visits to Chicago, Milwaukee, and other manufacturing centers, for the purpose of inspecting manufacturing plants and great engineering works under operation or construction.

10. Illumination and photometry. The distribution and measurement of light and comparison of sources of illumination. Manufacture and use of electric lamps. *First semester; three times a week.* Assistant Professor SWENSON and Mr. SHAAD.

Open to seniors and graduates.

11. Elements of Electric Lighting and Power Distribution. A short general course particularly designed for students in civil engineering. *First semester, twice a week; second semester, four times a week.* Assistant Professor SWENSON.

Open to juniors and seniors.

Engineering Contracts and Specifications.

The law of contracts as applied to engineering work, together with typical forms of specifications governing both the commercial and technical features of engineering construction, and

of all the related documents pertaining to engineering contracts. *Three hours a week for six weeks. Second semester.* Required of all seniors.

Shop Work.

PROFESSOR KING, MR. LOTTES, MR. KRATSCH, MR. ANDERSON, MR. MCINTOSH, MR. HANKINSON, AND MR. BONN.

1. Bench Work in Wood. *Twice a week, first or second semester; (36 hours); one-fifth credit.*
   Required of freshmen in mechanical and electrical engineering.
2. Lathe, Pattern, and Foundry Work. *(36 hours); one-fifth credit.*
   Required of sophomores in mechanical and electrical engineering.
3. Bench Work in Iron. *First semester; (36 hours); one-fifth credit.*
   Required of sophomores in mechanical engineering.
4. Production of Flat Surfaces and Straight Edges. Training in the use of file and scraper on surfaces of large area. *First semester; (18 hours).*
   Required of sophomores in mechanical engineering.
5. Machine Work in Iron. *First semester; (36 hours); one-fifth credit.*
   Required of sophomores in mechanical and juniors in electrical engineering.
6. Practice on the Planing and Milling Machines. *Second semester; (36 hours); one-fifth credit.*
   Required of sophomores in mechanical and juniors in electrical engineering.
7. Forge Work. *First semester; sophomore mechanical engineers 54 hours, one and one-half fifths credit: Second semester: sophomore electrical engineers 36 hours, one-fifth credit.*
8. Practice at the Lathe and Milling Machine. *First semester; (54 hours); one and one-half fifths credit.*
   Required of juniors in mechanical and electrical engineering.
9. Tool Making. The methods of making taps, dies, reamers, and milling cutters are the prominent features. *First semester; (90 hours); two and one-half fifths credit.*
   Required of juniors in mechanical and electrical engineering.
10. Machine Construction. Lectures on the development of the locomotive. *Second semester; (90 hours); two and one-half fifths credit.*

Required of juniors in mechanical engineering.

12. Construction and Pattern Work. Practice in pattern work, and fitting together machine parts. *First semester;* (126 *hours*); *three and one-half fifths credit.*

Required of seniors in mechanical engineering.

13. This course is similar to course 10, but to it will be added practice in the erection of line shafting and machinery. Lectures on Shop Design, Erection, and Management will be given. *Second semester;* (36 *to* 180 *hours*).

Elective for seniors in mechanical and electrical engineernig.

COLLEGE OF LAW.

Staff of Instruction.

E. A. Birge, Ph. D., Acting President of the University.
E. E. Bryant, Dean of the Law Faculty, Professor of Elementary Law, Practice and Pleading, Jurisdiction, Constitutional Law and Bankruptcy.
J. H. Carpenter, LL. D., Jackson Professor of Law. (Emeritus.)
B. W. Jones, A. M., LL. B., Professor of the Law of Evidence, Taxation, Public Corporations, and Domestic Relations.
J. M. Olin, A. M., LL. B., Professor of the Law of Real Property, Wills and Torts.
R. M. Bashford, A. M., LL. B., Professor of Commercial Law, Private Corporations, Banking, and Insurance.
H. L. Smith, A. B., LL. B., Professor of the Law of Public Officers, Contracts, Equity Jurisprudence, Partnership, Sales and Quasi-Contracts.
E. A. Gilmore, A. B., LL. B.. Assistant Professor of the Law of Agency, Bailments, Public Service Companies, Police Powers and Public Policy, and Trusts.
J. B. Parkinson, A. M., Professor of Constitutional and International Law.
R. T. Ely, Ph. D., LL. D., Professor of Political Economy.
F. J. Turner, Ph. D., Professor of American History.
D. C. Munro, A. M., Professor of European History.
W. A. Scott, Ph. D., Professor of Economic History and Theory.
D. B. Frankenburger, A. M., Professor of Rhetoric and Oratory.
E. R. Stevens, B. L., LL. B., Lecturer in Criminal Law.

General Statement.

The advantages of professional schools for training students in the elementary principles of law and fitting them to enter the legal profession, are now universally acknowledged by the members of the bar.

Among the advantages afforded to the student by the law school over the law office or private or solitary pursuit of the study, the following are the most obvious:—

He is well instructed in elementary principles.

He is taught to trace the growth, progress, and expansion of our body of law.

His studies are directed to give him a comprehensive, general view and analysis of the law as a system. By the inductive or case method he is taught to seek the law in its original sources and deduce principles from decided causes.

While studying the substantive law he is at the same time familiarized with the principles of procedure and general rules of practice, their necessity and application.

Having access to large, well-selected libraries, he becomees familiar wih the literature of the law, and learns where to readily find the law of any subject in the reports, treatises and digests.

Constantly examined, orally and in writing, upon his reading, he becomes more proficient in expression.

By constant association, study, discussion, and friendly controversy, with fellow students, he acquires self-reliance, overcomes timidity, and learns the value of thorough preparation. His mental faculties are quickened, and his resources brought under command.

In the preparation and argument of cases in the moot court, and in the debating societies and clubs, he acquires an experience of utility in fitting him for the actual controversies of professional life.

The College of Law of the University of Wisconsin offers a course which gives as much valuable and practical instruction and training as possible in a three years' course of study. The elementary instruction in substantive law usual in all law schools is here fully given. Little is imparted by means of the lecture alone; the "case system" is in large part used, and much original work, carefully directed, is required. Examinations are rigid and frequent.

The aim of this college is to prepare students for practice in the several states of the Union, and to this end thorough instruction is given in the principles of law, including:—

First. THE COMMON LAW, its history, development, and present state in the United States, with the statutory modifications generally adopted in the several states.

Second. EQUITY, its history, development, and present state in the United States.

Third. THE LAW OF PROCEDURE, including the practice and pleading in common-law courts, courts of equity, and under the codes of civil procedure, and in the federal courts.

Fourth. THE PUBLIC LAW of the United States, and constitutional law.

International law, Roman law, and comparative constitutional law, are taught in the University in classes open to students of the College of Law.

Illinois Pleading and Practice.

Owing to the presence of a large number of students who intend to practice in the state of Illinois, special instruction, which a student may take at option, is given in Illinois pleading and practice.

ADMISSION.

Students applying for admission to the College of Law may be admitted, as are students in other departments, by either of two methods:

1. On certificates from accredited schools or colleges.
2. On examination at the University.

The requirement for admission certificates is the same as that stated for admission to the other colleges of the University on p. 66. The examination required is the regular examination upon the studies of group I. and in addition those of some of the groups II.-VI. for admission to the freshman class, and is conducted at the same time and by the same members of the Faculty as the examination of candidates for admission to the College of Letters and Science.

These examinations for the junior class will be held June 11 and 12 and September 22 to 25, 1903, beginning at 9 o'clock A. M.

Those intending to apply for examination, either for admission as a junior or for advanced standing, should notify the Dean before the beginning of the year, and apply for directions, as examinations cannot be had later. No student of the junior class who fails to pass an examination in the studies of the junior year, will be admitted to the middle class, except conditionally; and the work of the middle year must be completed before the student is entitled to full rank as a senior.

Admission of Graduates.

Candidates will be admitted without examination upon presenting certificates of graduation from any reputable college or university, state normal school, accredited high school or academy.

While students are admitted as above, yet those who are only able to satisfy the minimum requirements for admission will be likely to find difficulty in doing the work of the College satisfactorily. Such further preparation as may be derived from a college course, or, at least, the first years of it, is strongly recommended.

Admission to Advanced Standing.

Candidates eligible for entrance, who have studied elsewhere, and can pass examinations upon the studies of the junior year or middle

year, or their equivalent, can enter the middle or senior year, but such examination will be searching and thorough, embracing all the studies of the junior and middle years, respectively. The examinations will be oral and written, extending over all the topics of the first two years, except as above indicated.

Students applying for admission to the middle or senior class, upon examination, must report in person for the examination, which begins on the Tuesday of the week preceding the opening of the academic year, as the examination will occupy about five days; *and no such examinations can be held after the appointed time.* Such examinations begin September 22, 1903.

Candidates presenting duly accredited certificates from other law schools of good standing and a three years' course, may be admitted to corresponding standing in this college, without examination.

Students entering any class after the beginning of the academic year will be required to pass examinations in the work of the class which has been done prior to their admission. All who desire to enter the classes should begin at the opening of the year, as the disadvantage of entering a class some weeks after it is organized hampers the late-coming student throughout his entire course.

Students who have graduated from the University of Wisconsin, and who have elected and taken six hours per week of the junior year's work in the College of Law, and passed examinations therein, will be permitted to graduate upon taking the two remaining years' course in the College of Law.

Admission of Special Students Twenty-three Years of Age.

The Regents, in June, 1897, adopted a resolution by which persons twenty-three years of age will hereafter be permitted to take special studies in the College of Law upon giving satisfactory evidence that they are prepared to take the desired studies advantageously. If they subsequently desire to become candidates for a degree or to take a regular course, they must pass the required entrance examinations before their graduation.

Under this rule students of the required age can be received without passing the entrance examination, and can prepare themselves to take and pass the entrance examinations during their law course, the passing of which is a condition precedent to taking a degree.

Regulations Concerning Elective Studies.

The following regulations have been authorized respecting elective studies:

1. Students of the College of Letters and Science will be permitted to elect, as part of their undergraduate course, junior studies in the College of Law to an amount not exceeding altogether six (6) hours a week for one year. The studies to be so elected are to be designated by the College of Law, and the studies for which they may be substituted, by the College of Letters and Science.

2. Students of the junior class of the College of Law may elect studies in the College of Letters and Science, and substitute them for studies in the junior year of the law course, to an amount not exceeding four hours a week for that year. The studies to be elected are to be designated by the College of Letters and Science, and those for which they may be substituted, by the College of Law.

3. Graduates of the College of Letters and Science who have elected six hours of study a week for one year in the College of Law are to be admitted to the middle class of the College of Law.

4. The fees for such elective studies in law are fixed by the Regents at $25 per annum.

COURSE OF INSTRUCTION.

The methods of instruction and course of study in this college, subject to necessary modifications, are substantially as follows:—

Junior Year.

FIRST SEMESTER.

Elementary Law. Bryant's *Outlines of Law. Two hours a week.* Dean BRYANT.

Contracts. Keener's *Cases on Contracts. Two hours a week.* Professor SMITH.

Domestic Relations. Browne on *Domestic Relations. One hour a week.* Professor JONES.

Commercial Paper. Tiedeman on *Commercial Paper. One hour a week.* Professor BASHFORD.

The Law of Real Property. Tiedeman on *Real Property;* to topic, Trusts, in first year, accompanied by select cases on real property by Finch. *One hour a week.* Professor OLIN.

Public Officers. Mechem on *Public Officers* and select cases. *One hour a week.* Professor SMITH.

Agency. Wambaugh's *Cases on Agency. Two hours a week.* Assistant Professor GILMORE.

The Faculty Moot Courts meet several times weekly. These courts give each student opportunity to prepare and argue a case on a submitted statement of facts as often as once each semester.

Written examinations at the close of topics, or at the end of the semester, are required throughout the course.

SECOND SEMESTER.

Taxation. Bryant's *Notes on Taxation. One hour a week, eight weeks.* Professor JONES.

Contracts. Continued as in first semester. *Two hours a week.* Professor SMITH.

Real Property. Continued as in first semester. *One hour a week.* Professor OLIN.

Municipal Corporations. Elliot's *Elements of Municipal Corporations. One hour a week, nine weeks.* Professor JONES.

Common-Law Pleading and Practice, continued. *One hour a week, sixteen weeks.* Dean BRYANT.

Courts and Jurisdiction, Notes and Statutes. *One hour a week, twelve weeks.* Dean BRYANT.

Commercial Paper, continued. *One hour a week.* Professor BASHFORD.

Partnership. Mechem on *Partnership,* text and cases. *One hour a week.* Professor SMITH.

Agency, continued. *Two hours a week, eight weeks.* Assistant Professor GILMORE.

Bailments. Selected cases. *Two hours a week, eight weeks.* Assistant Professor GILMORE.

Middle Year.

FIRST SEMESTER.

Real Property. Tiedeman on *Real Property,* commencing with the subject of Trusts, and ending with the subject of Title by Devise, accompanied by select cases on real property by Finch. *One hour a week throughout the year.* Professor OLIN.

Private Corporations. Clark on *Corporations. One hour a week.* Professor BASHFORD.

Equity Jurisprudence. Keener's *Cases on Equity Jurisdiction. Two hours a week.* Professor SMITH.

Equity Pleading and Practice. Shipman's and Story's *Notes on Equity Pleading. One hour a week, eight weeks.* Dean BRYANT.

Code Pleading. Bryant on *Code Pleading. Two hours a week, fourteen weeks.* Dean BRYANT.

Law of Sales. Adams' *Select Cases on Sales. One hour a week.* Professor SMITH.

Evidence. Jones on *Evidence*. *One hour a week.* Professor JONES.

Carriers. Beale and Wyman's *Cases on Public Service Companies*. *Two hours a week.* Assistant Professor GILMORE.

SECOND SEMESTER.

Real property. Tiedeman on *Real Property*, accompanied by select cases on real property by Finch. The subjects of Title by Public Grant and Mining Law are treated in this semester. *One hour a week.* Professor OLIN.

Equity Jurisprudence, continued, as in first semester. *Two hours a week.* Professor SMITH.

Code Pleading. *Exercises two hours a week, nine weeks.* Dean BRYANT.

Criminal Law and Procedure. Clark and Marshall on *Crimes*. *One hour a week.* Mr. STEVENS.

Private Corporations, continued. Wisconsin Statutes and Cases. *One hour a week.* Professor BASHFORD.

Equity Pleading and Practice in Federal Courts. Text: *Federal Court Rules*. *One hour a week, nine weeks.* Dean BRYANT.

Evidence. Jones on *Evidence*. *One hour a week.* Professor JONES.

Carriers, continued. *One hour a week.* Assistant Professor GILMORE.

Sales, continued as in first semester. *One hour a week.* Professor SMITH.

Senior Year.

FIRST SEMESTER.

Constitutional Law. Notes and study of leading cases. *One hour a week.* Dean BRYANT.

Code Practice. *Two hours a week.* Dean BRYANT.

The Law of Evidence. Jones on *Evidence*. *One hour a week.* Professor JONES.

Banking. Lectures and select cases. *One hour a week.* Professor BASHFORD.

Probate Law. *Two hours a week.* Lectures, notes, and select cases. Professor SMITH.

The Law of Wills. Cassoday on *Wills*, accompanied by Mechem's *Select Cases*. *Fourteen weeks, one hour each week.* Professor OLIN.

The Law of Torts. Bigelow on *Torts* (Edition of 1901), accompanied by Bigelow's *Cases on Torts*, students' series. *One hour each week for four weeks.* Professor OLIN.

Trusts. Ames's *Cases on Trusts* (2d ed.). *Two hours a week.* Assistant Professor GILMORE.

Equity Jurisprudence, continued. *Two hours a week.* Professor SMITH.

Damages. Beale's *Cases on Damages,* and Hale on *Damages. Two hours a week.* Assistant Professor GILMORE.

Elective study: Illinois pleading and practice and select cases. *Lectures, notes, and select cases. Two hours a week.* Dean BRYANT.

SECOND SEMESTER.

Bankruptcy. Black on *Bankruptcy;* the statutes and leading cases in federal courts. *One hour a week, twelve weeks.* Dean BRYANT.

The Law of Evidence. Jones on *Evidence. One hour a week.* Professor JONES.

Insurance. Elliott on *Insurance.* Lectures and cases. *One hour a week.* Professor BASHFORD.

Code Practice, continued. *One hour a week.* Dean BRYANT.

Select Wisconsin Cases in Law of Contracts and Personal Property. *One hour a week.* Professor SMITH.

The Law of Torts. Continued as in the first semester. *One hour a week.* Professor OLIN.

Procedure. Methods in different systems contrasted. *One hour a week, eight weeks.* Dean BRYANT.

The Trial of Actions. *One hour a week.* Dean BRYANT.

Quasi-Contracts. Keener's *Cases on Quasi-Contracts. One hour a week.* Professor SMITH.

Police Powers and Public Policy. Notes and selected cases. *One hour a week.* Assistant Professor GILMORE.

Elective study: Illinois pleading and practice, and select cases continued as in first semester. Dean BRYANT.

Resources of the College of Law.

The Regents annually make such an appropriation as is needed for the support of this college. The matriculation fees charged for its course constitute only a part of the resources by which it is maintained.

By the will of the late Judge Mortimer M. Jackson, funds to the amount of twenty thousand dollars were bequeathed to the University to found and maintain a Professorship of Law. The act of 1891, by which the legislature provided for the erection of the building for the college, provided also for its equipment; and as fast as this appropriation can be realized the library will be en-

larged, and the appointments of the college kept up to maintain it in the greatest utility. One thousand dollars per year is appropriated by the legislature to the support of its library.

The advantages which the city of Madison affords to the law student, it is believed, are equal, and in many respects superior, to those to be found in any other place where a law school is established in this country. Among them are the following:—

Courts.

The Supreme Court of the state is in session during most of the academic year, and students have opportunity to listen to carefully prepared arguments by some of the ablest lawyers of the country.

Two terms of the United States Circuit and District Courts are held here annually, and important cases are here tried, both on the law side of the court before juries and in equity causes, illustrating the procedure in the federal courts.

The Circuit Court for Dane County holds three terms each year, giving the student opportunity to observe the methods and practice under the code system, which is substantially like that in twenty-seven states and territories.

The Municipal Court of Dane County sits daily for the trial of criminal cases.

Facilities conveniently at hand for becoming familiar with the practice in courts and the methods pursued by able and successful practitioners are thus afforded.

The statutes of the state provide that "any resident graduate of the Law department of the University of Wisconsin shall be admitted to the bar of any court, upon the production of his diploma, and may be admitted to the Supreme Court when not in session by an order signed by one of the justices thereof and filed with the clerk" (R. S. Wis., Sec. 2586). Under this statute and a rule of the Federal court, it is customary for the graduating class, on motion of a member of the faculty, to be admitted to the Supreme Court of the state and the Circuit and District Courts of the United States, immediately upon graduation. This entitles them to admission to the bar of all courts of record in Wisconsin, and all Federal courts.

The Legislature.

One or two sessions of the legislature are held at Madison during each course, enabling students to observe the processes of legislation.

The University.

The University of Wisconsin has a corps of instructors selected from the best scholars in their respective specialties. On obtaining a proper certificate from the Dean, students of the College of Law may pursue studies for which they are prepared in any other department of the University without extra charge, in so far as the work of the College of Law leaves them time. Many students of law avail themselves of the privilege. The site of the University buildings is one of the most beautiful in the United States. Large sums have been and are being expended in building, libraries, and apparatus in all the departments. The attendance of students from the best youth of the country is large and steadily increasing. The student of the College of Law is surrounded by the best influences. He is not only in a "legal atmosphere," but his associations are with those who, in other lines of study, are striving for excellence.

Law College Building.

The liberality of the state has provided the means, and the Regents have erected a building, for the College of Law, which is one of the most commodious in the country. Constructed at a cost of $86,000 from brown Superior sandstone, this building has been located in a commanding site upon the University campus. Its large lecture rooms and library are capable of seating several hundred students. It has the most approved systems of lighting, heating, and ventilation. Rooms for moot courts and class debates are provided.

The Schools of Economics and Political Science and of History.

These schools, under the direction of Dr. Richard T. Ely and Dr. Frederick J. Turner, with an able corps of instructors and special lectures are established in the State Historical Library and Law Buildings. Students of the College of Law are enabled to pursue the studies of this school and attend lectures upon political economy, institutional history, constitutional and international law, civil polity, and American history, and special lectures on such topics as the distribution of wealth, socialism, taxation, government of cities, pauperism, criminology, public finance, economics of agriculture, and various other topics ably treated by advanced teachers and thinkers on these and similar topics. These subjects are of especial importance and value to the student of American law, and add greatly to the advantages of the College of Law, giving

its students especially convenient facilities for including the economic studies in their course. To a limited extent the law students are permitted to elect studies in this school during the first year.

Libraries.

The College of Law has an excellent and rapidly increasing library of the best law books and reports. This is enlarged by an annual appropriation made by the legislature for that purpose. It is open for the use of law students during the day and evening.

The law library of the state, the largest and most complete in the Northwest, is located in the Capitol building; and students in the College of Law are during the day permitted, under reasonable restrictions, to use its books for reference, and conveniences are afforded them for the use of the books in preparing briefs or pursuing topical investigations.

The Library of the State Historical Society, with about 110,000 volumes and 105,000 pamphlets, a collection of books of the greatest value in historical study and research, is open to all students of the University.

The general University Library, including the department libraries catalogued with it, contains about 78,000 volumes and 25,000 pamphlets, and is open every week-day and evening to students. About three hundred of the best American and foreign periodicals are taken and kept on the files.

The Bar.

The bar of Dane County is an unusually strong one, especially noted for the thoroughness of its members in preparing their cases for trial, and for their correct and precise methods in practice.

Examination for Graduation.

For graduation each student will be required to have passed a satisfactory examination upon all studies pursued during the three years of the course. Examinations are held either at the end of each semester, or on completion of a particular topic. In addition, he must have prosecuted or defended to judgment such moot course cases as shall have been assigned by the Faculty, carefully preparing briefs, and must also have prepared such legal papers, pleadings, etc., as have been assigned for practice; and at least one month before the close of the senior academic year, and at such time as the Dean shall appoint, must have prepared and submitted to the Faculty, a satisfactory thesis.

As the real ground-work of legal proficiency is laid in the beginning of the course, all should strive to take the full course, rather than trust to such progress as can be made in a law office or reading in private. If but one year can be spent at a law school, the first year will be the most valuable. The student can, upon the proficiency thus gained, more easily be admitted to the profession on examinations by the State Board of Examiners for admission to the bar, and in his future studies have the benefit of elementary training.

Students, who are able to do so, should furnish their own text-books, and books of selections of cases. They will need them in practice after graduation, and can hardly afford to be without them during their course. Arrangements have been made by which they can be ordered through the Secretary of the Regents, and obtained at a considerable discount from quoted prices. It is believed that the books required for the first year can be obtained for about sixty dollars; for the second and third years, for about one hundred dollars.

Societies.

The Forum and the Columbian are incorporated literary societies, composed entirely of law students. Each of them holds weekly meetings in one of the rooms of the college for debates and other literary exercises. Opportunity is afforded to each student frequently to take part in debate.

The Luther S. Dixon, Andrew A. Bruce, John Marshall and the Edwin E. Bryant law clubs are student organizations, modeled on the law clubs of Harvard Law School, which afford those who attain membership, valuable practice in the trial and argument of cases.

Fees and Expenses.

The matriculation fees in the College of Law are as follows:

For the full course of three years or its equivalent..$150 00

The fees are apportioned thus for students graduating in three years:—

First year	$75 00
Second year	50 00
Third year	25 00
For students graduating in two years:—	
First year	75 00
Second year	50 00
For students admitted to the senior class and graduating in one year	100 00

Students of the College of Letters and Science taking the elective studies in the junior class will pay for the first year	25 00
And such students will pay for the middle year	75 00
For the senior year	50 00
Graduate fees per year	50 00

All fees are payable in advance at the office of the Secretary of the Regents. Admission to membership in the classes is not permitted until the fees are paid. No deductions are made for absences nor for failure to begin at the opening of a year, nor is extension of time allowed for payment of fees. Fees must in all cases be paid in advance.

Students will register at the office of the Dean, and receipts showing the payment of tuition must be filed with him within 10 days after entry.

The expenses of living are moderate. Good board can be obtained at from $2.50 to $4 per week, and by forming or joining clubs the expenses can be considerably reduced. Students desiring information in regard to boarding places, or general information as to expenses, should address their inquiries to the Secretary of the Regents.

A careful perusal of this general statement it is believed will supply all needed information; but should further inquiries as to admission, examination, etc., be necessary, they should be addressed to the Dean of the College of Law, Madison, Wis.

COLLEGE OF AGRICULTURE.

Staff.

E. A. Birge, Ph. D., Acting President of the University.
W. A. Henry, B. Agr., Dean, Professor of Agriculture.
S. M. Babcock, Ph. D., Professor of Agricultural Chemistry.
W. L. Carlyle, B. S. A., Professor of Animal Husbandry.
E. H. Farrington, M. S., Professor of Dairy Husbandry.
H. L. Russell, Ph. D., Professor of Bacteriology.
A. R. Whitson, B. S., Professor of Agricultural Physics.
E. P. Sandsten, M. S., Associate Professor of Horticulture and Economic Entomology.
F. W. Woll, M. S., Assistant Professor of Agricultural Chemistry.
R. A. Moore, Assistant to Dean, in charge of Short Course.
F. J. Wells, B. S., Instructor in Agricultural Physics.
Frederick Cranefield, Instructor in Horticulture.
A. S. Alexander, M. D. C., V. S., Lecturer in Veterinary Science.
*T. F. McConnell, Instructor in Animal Husbandry.
J. C. Brown, M. S., Assistant in Agricultural Chemistry.
G. A. Olson, B. S., Assistant in Agricultural Chemistry.
U. S. Baer, Instructor in Cheese Making.
Hugh Nesbit, Assistant in Cheese Making.
F. H. Zimmerman, Assistant in Cheese Making.
Fred Marty, Assistant in Foreign Cheese Making.
J. H. Godfrey, Assistant in Creamery.
Martin Meyers, Assistant in Creamery.
Ole Esker, Assistant in Creamery.
John McCready, Assistant in Milk Testing.
Peter Dukleth, Assistant in Farm Dairying.
J. A. Ford, Assistant in Farm Dairying.
G. H. Benkendorf, Assistant in Dairy Machinery.
Wm. Verthein, Assistant in Pasteurizing.

*Resigned, Jan., 1903.

Professors in Other Colleges Who Give Instruction to Students in Agriculture.

E. A. BIRGE, Ph. D., Sc. D., Professor of Zoology.
C. A. CURTIS, A. B., Captain U. S. Army, Professor of Military Science and Tactics.
W. W. DANIELLS, M. S., Professor of Chemistry.
D. B. FRANKENBURGER, A. M., Professor of Rhetoric.
W. D. FROST, M. S., Instructor in Bacteriology.
R. A. HARPER, Ph. D., Professor of Botany.
H. W. HILLYER, Ph. D., Assistant Professor of Organic Chemistry.
C. I. KING, Professor of Practical Mechanics.
A. W. RICHTER, M. E., Assistant Professor of Experimental Engineering.
A. R. HOHLFELD, Ph. D., Professor of German.
E. T. OWEN, Ph. D., Professor of French.
F. G. HUBBARD, Ph. D., Professor of the English Language.
B. W. SNOW, Ph. D., Professor of Physics.
C. R. VAN HISE, Ph. D., Professor of Geology.
C. A. VAN VELZER, Ph. D., Professor of Mathematics.
H. C. TAYLOR, Ph. D., Instructor in Commerce.

General Information.

Four of the University buildings are devoted to agricultural instruction and research. The legislature of 1901 appropriated $150,000 for an agricultural building, to be used in place of South Hall, which the College had outgrown. The new structure, now about completed, is situated at the west end of Observatory Hill, facing the south, in close proximity to the Dairy and Horticultural buildings. It is four stories in height, 200 feet in length by 64 in width, and is constructed of Bedford limestone and buff pressed brick with red Spanish tile roof. In the rear is a two-story octagon 66 feet in diameter. In the main structure are accommodations for the executive department of the College, the Farmers' Institute headquarters, and the departments of Agricultural Chemistry, Animal Husbandry, Bacteriology, and Agronomy, with rooms for two additional departments, which we hope to have in the near future. In the octagon is an auditorium with seating capacity of 800, and a library and reading room. It is expected that the legislature of 1903 will provide means by which the necessary equipment for this building may be purchased, in which case the building will be first occupied by the incoming college classes of 1903.

Hiram Smith Hall is devoted to dairying. The main structure of brick and stone has a frontage of 95 feet by 48 feet in depth, and is three stories in height. It contains an office, lecture room, reading room, dairy laboratory, and rooms devoted to creamery practice, cheese making and farm dairying. Two large additions recently completed provide rooms for the manufacture of foreign cheese, for curing cheese, for butter working, and for pasteurizing dairy products. A ten-ton ammonia refrigerating machine has been added to the equipment.

The Horticulture-Physics building, three stories in height, has a frontage of 78 feet and a depth of 60 feet. At the rear are glass houses covering a space of 88x75 feet. The right wing of the building with its greenhouses is devoted to plant life and horticulture. The left wing with its large glass house is devoted to instruction and investigation in the physics and mechanics of agriculture.

A central plant provides heat for the Horticulture-Physics building, the Dairy building, and the central agricultural college building, all of which are connected with it by tunnels. This structure is 35x50 feet in area, two stories in height over a 16-foot basement in which are five steam boilers of 370 horse-power capacity. The first story is used for instruction in the care and management of the steam engine, in the placing of shafting, and in the proper setting of power cream separators, pumps, etc. The second floor is used for instruction in pipe-cutting, soldering, belt-lacing, etc.

At the college farm are the fields, barns and live stock. Here, as elsewhere, all arrangements have in view instruction and research in agriculture.

By its association with the various University laboratories of science and the practical arts, open to agricultural students, with departments in which are taught all the foreign languages that contain much agricultural literature, with an active experiment station equipped with special laboratories and library, and with a farm where practical tests are carried on, the College of Agriculture affords exceptional opportunities to those who desire to become agricultural experts.

Libraries.

The library contains 6,000 bound volumes and several hundred pamphlets relating strictly to agriculture. Students have access also to the various other libraries of the University and the city.

Societies.

Short course and dairy students maintain literary societies. These organizations afford opportunity for drill in parliamentary practice, for training in declamation, debate and essay-writing, as well as for discussion of the many professional and practical questions relating to agriculture and dairying.

Fees and Expenses.

I. GRADUATE COURSE AND LONG COURSE.

Tuition for residents of the State of Wisconsin....	FREE.
Tuition for non-resident students, per semester....	$15 00
Incidental fee, payable by all students, per semester..	10 00

II. SHORT COURSE IN AGRICULTURE.

Tuition for residents of the State of Wisconsin....	FREE.
Incidental fee for resident students, per term.....	$ 5 00
Incidental, tuition, and laboratory fees for non-resident students, per term.....	40 00

III. DAIRY COURSE.

Tuition for residents of the State of Wisconsin....	FREE.
Incidental and laboratory fees for resident students, per term	$15 00
Incidental, tuition, and laboratory fees for non-resident students, per term.....	50 00

The expenses of resident students in the graduate and long courses are practically the same as for those pursuing regular University courses.

Expenses of the resident students pursuing the short course in agriculture will vary from $65.00 to $75.00 for the term for room, board, washing, and necessary books.

The expenses of the resident dairy students will vary from $60.00 to $70.00 for the term.

Plan of Agricultural Education.

The University system of agricultural education has three aims:

First, to develop agricultural science through investigation and experiment, and to disseminate the same through bulletins and reports;

Second, to give instruction in agriculture at the University;

Third, to disseminate agricultural knowledge among the farmers of the state by means of institutes and popular publications.

Courses of Instruction.

Systematic courses in agriculture have been arranged to meet the wants of students having different purposes in view.

THE GRADUATE COURSE offers to advanced students opportunities for professional training and original investigation, made possible through an active experiment station, associated with numerous scientific laboratories. The special lines of study will be left largely to the selection of the student, subject to the approval of the Agricultural Faculty. It will be practicable to a large extent for such students to participate in experiments in progress, and, after suitable experience, to conduct independent investigations. When contributions to knowledge of permanent value are made they will be published through the bulletins of the Experiment Station under the name of the contributor.

THE LONG COURSE offers scientific training in agricultural chemistry, agricultural physics, horticulture, animal husbandry, and dairying. Besides the strictly professional branches it embraces general training in chemistry, physics, botany, zoology, geology, bacteriology, and similar branches which have an application in agriculture. The field is so broad, however, that it is impossible for the student in four years to pursue all the courses offered in addition to acquiring the necessary fundamental studies, and hence a large liberty of selection is allowed.

THE SHORT COURSE is provided for those who can devote only a limited time to study, and who wish to return at once to the active operations of the farm, and therefore desire the greatest amount of directly useful knowledge that can be acquired in the brief time allowed.

THE DAIRY COURSE is designed for those who intend to operate creameries and cheese factories.

Terms of Admission.

GRADUATE COURSE IN AGRICULTURE. Graduates of this University and of other colleges and universities in good standing are admitted to this course without examination.

LONG COURSE IN AGRICULTURE. The requirements for admission to this course are the same as those for the general science course given on p. 70.

SHORT COURSE IN AGRICULTURE. Students in this course must be at least sixteen years of age, and have a good common school education. No entrance examinations are required, but those who

come poorly prepared cannot expect to receive the full benefits of the course.

DAIRY COURSES. The terms of admission to the winter course are the same as for the short course, excepting that the candidates must have had not less than six months' experience in a creamery or cheese factory before entering the course. For admission to the summer course in dairying no previous experience is required.

SPECIAL STUDENTS IN AGRICULTURE. As many of the youth of the farming communities are not within reach of schools giving instruction in all the branches required for admission to the long course, limited concessions will be made to young men of exceptional strength and maturity by which they will be permitted to enter the University as special students in agriculture.

Degrees.

The degree of *Bachelor of Science in Agriculture* is conferred on students who successfully complete the long course in agriculture. The degree of *Master of Science in Agriculture* is conferred on *Bachelors of Science in Agriculture* who complete one year of advanced study at the University and present an acceptable thesis on a topic approved by the Faculty.

Long Course in Agriculture.

Freshman Year: Biology, 5*; German, 4; mathematics, 3; English, 3; military drill, 2; gymnastics, 2; 34 unit-hours for the year, of which 30 are in class exercise.

Sophomore Year: German, 3; French, 4; physics, 5; chemistry, 5; electives, 3-5; military drill, 2; gymnastics, 2; 34 unit-hours for the year, of which 30 are in class room and laboratory.

Junior and Senior Years: Two years in one of the following subjects: Agricultural chemistry, agricultural physics, animal husbandry, dairying, bacteriology, or horticulture, as a major study; one year in one other of the above subjects to be assigned as a minor study by the class officer.

In addition to the above requirements, each student before beginning his senior studies, must have spent at least twelve months in practical work upon a farm in order to familiarize himself with farm operations.

*The figures denote the number of recitations per week.

During the last two years of the course the student must pursue not less than 50 unit-hours of study in branches taught in the College of Agriculture. In all 120 unit-hours of class and laboratory work, in addition to drill and gymnastics, is required for graduation.

DEPARTMENTS OF INSTRUCTION.

THE LONG COURSE IN AGRICULTURE.

Agricultural Chemistry.

PROFESSOR BABCOCK, ASSISTANT PROFESSOR WOLL, AND MR. BROWN.

1. Agricultural Chemistry. Lectures. *Twice a week; second semester.* Professor BABCOCK.
2. The Chemistry of the Dairy. Lectures and laboratory practice. *First semester; once a week.* Professor BABCOCK.
3. Agricultural Analysis. Laboratory work during the year. *Three times a week.* Assistant Professor WOLL and Mr. BROWN.
4. Advanced and Original Work. Laboratory work during the year. *Five times a week.* Professor BABCOCK, Assistant Professor WOLL, and Mr. BROWN.

Agricultural Physics.

PROFESSOR WHITSON AND MR. WELLS.

1. Meteorology. The course deals chiefly with the agricultural phases of the subject. Lectures and laboratory work. *Twice a week; second semester.*
2. Farm Engineering. Farm machines and engines, the construction and maintenance of country roads, and the construction of farm buildings. *Twice a week; first semester.*
3. Soil Physics. Drainage and irrigation. *Three times a week throughout the year.*
4. Original investigations in the physical laboratory and field. *Full study throughout the senior year.*

Horticulture.

PROFESSOR SANDSTEN AND MR. CRANEFIELD.

1. General Principles of Horticulture. Lectures, recitations, and laboratory work. *Full study; first semester.*
2. Economic Horticulture. Instructions in the culture of the principal fruits and vegetables of our climate. Lectures, recita-

tions, and laboratory work. *Three times a week; second semester.*

3. Aesthetic Horticulture. The principles of ornamental planting and of laying out gardens and pleasure grounds. Lectures and recitations. *Twice a week; second semester.*
4. Special investigation in subjects relating to the propagation and rearing of economic plants. Field and laboratory work. *Full study throughout the year.*

Animal Husbandry.

PROFESSOR HENRY, PROFESSOR CARLYLE, AND DR. ALEXANDER.

1. The Breeds of Live Stock. Students taking this course are trained in selecting and judging live stock. *Five times a week; second semester.* Professor CARLYLE.
2. Breeding. Principles and methods. Darwin's *Animals and Plants under Domestication;* Warfield's *Cattle Breeding,* and Miles' *Stock Breeding. Five times a week; second semester.* Professor CARLYLE.
3. Veterinary Science. References: Fred Smith's *Veterinary Physiology and Veterinary Hygiene;* Fleming's *Obstetrics;* Neumann's *Parasites and Parasitic Diseases;* Strangeway's *Anatomy.* Dr. ALEXANDER.
4. Feeds and Feeding. Henry's *Feeds and Feeding,* and Jordan's *The Feeding of Animals. Five times a week; first semester.* Professor HENRY.
5. Advanced Work in Feeding and Breeding. Having completed the previous courses the student will assist in conducting feeding and breeding investigations at the station. *Five times a week; one year.* Professor HENRY and Professor CARLYLE.

Bacteriology.

PROFESSOR RUSSELL AND MR. FROST.

1. General Bacteriology. See course 1, p. 153. Lectures or equivalent. *Full study; first semester; M., W., and F., at* 11. Professor RUSSELL and Mr. FROST.
2. Dairy Bacteriology. The relation of bacteria to dairy problems. Laboratory work with conferences. *Full study; second semester.* Professor RUSSELL.
3. Agricultural Bacteriology. Bacteria as affecting agricultural problems in general, including animal diseases. Laboratory

work with conferences. *Full study; second semester.* Professor RUSSELL.

Dairy Husbandry.

PROFESSOR FARRINGTON AND ASSISTANTS.

1. Milk Inspection. Lectures and Laboratory practice. *One hour a week.* Professor FARRINGTON and Mr. BAER.
2. Creamery Butter Making. Cream separation, cream ripening, churning, butter working, butter printing, etc. *Five hours a week.* Professor FARRINGTON and Mr. GODFREY.
3. Cheese Making. Lectures and factory work in making and curing Cheddar, Swiss, Brick, Limburger and Edam cheese. *Five hours a week.* Professor BABCOCK and Mr. BAER.
4. Dairy Machinery. Shop practice with engines, boilers, artificial refrigeration machinery, pipe fitting, etc. *One hour a week.* Professor FARRINGTON and Mr. BENKENDORF.
5. Milk and Cream Pasteurization. *One hour a week.* Professor FARRINGTON and Mr. VERTHEIN.

Agricultural Economics.

DR. TAYLOR.

This course treats of those principles which underlie the prosperity of the farmer and of all other classes in so far as they are dependent upon agriculture. The subject is divided into two parts. Part one considers the point of view of the farmer, and those economic principles which underlie the management of a farm in such manner as will make it yield the largest net return. Part two discusses the point of view of the nation as a whole and those principles which should guide the statesman in his efforts to regulate and improve the agriculture of a country. *Three times a week; first semester.*

THE SHORT COURSE IN AGRICULTURE.

This course covers two terms of fourteen weeks each, beginning the first of December each year.

FIRST YEAR.

Twenty-one lectures in feeds and feeding. Professor HENRY.

Twenty-eight lectures in the breeds of live stock, with score-card practice additional in stock judging. Professor CARLYLE.

Thirty-five lectures with 70 hours' laboratory practice in agricultural physics. Professor WHITSON.

Thirty-five lectures with 70 hours' laboratory practice in plant life. Professor SANDSTEN.

Twelve lectures with clinics in veterinary science. Dr. ALEXANDER.
Twelve lectures in dairying. Professor BABCOCK.
Seventy-two hours' practice in farm dairying and dairy laboratory. Mr. DUKLETH.
A course in farm book-keeping. Mr. MOORE.
Twenty-eight hours of recitation and drill in parliamentary practice. Mr. MOORE.

SECOND YEAR.

Twenty-eight lectures or equivalent in essay writing on animal nutrition. Professor HENRY.
Twenty-eight lectures in the breeds of live stock, with seventy-two hours' practice in stock judging. Professor CARLYLE.
Seventy hours of lectures and laboratory practice in agricultural physics and meteorology. Professor WHITSON.
Seventy hours of lectures and laboratory practice in horticulture. Professor SANDSTEN.
Thirty-five lectures and recitations in elementary agricultural chemistry. Professor BABCOCK.
Sixteen lectures with demonstrations in veterinary science. Dr. ALEXANDER.
One hundred and twenty hours at work-bench and forge. Professor KING.
Twelve lectures in agronomy. Mr. MOORE.
Twelve lectures in agricultural economics. Dr. TAYLOR.
Twenty lectures in bacteriology as applied to agricultural conditions. Professor RUSSELL.

Students completing the studies of this course in a satisfactory manner are granted short course certificates.

An illustrated circular describing the short course in detail will be sent on application to R. A. Moore, Assistant to Dean, College of Agriculture, Madison, Wis.

COURSES IN DAIRYING.

Instruction in the winter course in dairying is divided as follows:—

1. Lectures and class room work.

Twenty lectures on the constitution of milk, the conditions which affect creaming and churning, methods of milk testing, the preservation of milk, etc. Professor BABCOCK.
Sixteen lectures on creamery management and accounts. Professor FARRINGTON.
Sixteen lectures on practical cheese making. Mr. BAER.

Sixteen lectures with demonstrations on the influence of bacteria in the dairy. Professor RUSSELL.

Eight lectures on heating, ventilation, and other physical problems directly connected with dairy practice. Professor WHITSON.

Sixteen lectures and demonstrations on the care and management of the boiler and engine. Professor RICHTER.

Eight lectures on the feeding and management of dairy stock. Professor HENRY.

Eight lectures on breeding and selection of dairy stock. Professor CARLYLE.

Eight exercises in parliamentary practice. Mr. MOORE.

2. Milk Testing. This embraces instruction in the laboratory in estimating the fat and other constituents in milk, butter, and cheese by methods adapted to the factory and factory operators. *Fifteen hours per week.* Professor FARRINGTON and assistants.

3. Butter Making. Butter making is carried on daily on the creamery plan. The student learns to operate the several forms of power centrifugal separators on the market. They attend to the ripening of the cream, churning and packing butter, carrying on all the operations as they would be conducted in a creamery. *Fifteen hours per week.* Professor FARRINGTON and assistants.

4. Cheese Making. In this course daily instruction is given in the manufacture of cheddar cheese, the operations being carried on as in the regular factory, the students being required to take careful notes and make reports upon the process.

Special instruction is also given in the making of Swiss, brick and Limburger cheese. *Sixteen hours per week.* Mr. BAER and assistants.

5. Dairy Machinery. This course provides instruction in firing and caring for boilers, running engines, putting up shafting, cutting and fitting iron pipe, belt lacing, soldering, etc. *Thirty hours per week.* Professor FARRINGTON and assistants.

THE SUMMER DAIRY COURSE.

In the summer course in dairying the student may enter at any time and remain for an indefinite period. No previous preparation is required. The student will assist in all of the different operations of the University creamery, thus gaining much practical experience.

Laboratory exercises and theoretical instruction will be given as required.

ADVANCED DAIRY WORK.

Being desirous of securing pupils who have had much experience in factory work before joining us, we offer the following inducements:—

Such as can pass satisfactory examinations in the practical work of the creamery or cheese factory will be advanced early in the term to the experimental dairy section, where problems connected with this branch will be studied.

Advanced dairy instruction will consist of the following courses:—

1. Instruction by Professor Babcock on milk and its products.
2. Experimental investigations in butter making by Professor Farrington.
3. Investigations in cheese production by Mr. BAER.
4. Dairy bacteriology by Professor Russell. This work will include two lines:
   a. A special course in the preservation of milk and cream for commercial purposes.
   b. Students familiar with the use of the microscope will be admitted to the bacteriological laboratory for experimental work in dairy bacteriology.

Examinations and Certificates.

To secure a dairy certificate a student must have spent a full term in the Dairy School and successfully passed all examinations; and, further, he must have had not less than two seasons' experience in a creamery or cheese factory, one of which must follow the period spent in the Dairy School. During the second season the candidate will report the operations of his factory monthly on blanks, and have his work inspected by an authorized agent of the University.

This course opens about the middle of November each year and lasts twelve weeks.

An illustrated circular giving additional information concerning the dairy course will be sent on application to Professor E. H. Farrington, Madison, Wis.

THE AGRICULTURAL EXPERIMENT STATION.

Officers of the Experiment Station.

E. A. BIRGE, Ph. D., Acting President of the University.
W. A. HENRY, Director.
S. M. BABCOCK, Assistant Director and Chief Chemist.
E. P. SANDSTEN, Horticulturist.
H. L. RUSSELL, Bacteriologist.
E. H. FARRINGTON, Dairy Husbandman.
W. L. CARLYLE, Animal Husbandman.
A. R. WHITSON, Agricultural Physicist.
F. W. WOLL, Chemist.
R. A. MOORE, Agriculturist.
*T. F. MCCONNELL, Assistant in Animal Husbandry.
J. C. BROWN, Assistant in Chemistry.
G. A. OLSON, Assistant in Chemistry.
FREDERICK CRANEFIELD, Assistant Horticulturist.
U. S. BAER, Cheese Maker.
E. G. HASTINGS, Assistant Bacteriologist.
F. J. WELLS, Assistant Agricultural Physicist.
LESLIE H. ADAMS, Farm Superintendent.
IDA HERFURTH, Clerk.

The purpose of the Experiment Station is the promotion of agricultural science by investigation and experimentation. In the choice of subjects it endeavors to select those which possess the greatest importance to the farmers of Wisconsin, so far as the facilities at hand permit. The endeavor at all times is to give the investigations a fundamental character in order that the results may be real contributions to agricultural science. The station is also a means of disseminating general and miscellaneous information on agricultural topics, and its staff cheerfully devotes the necessary time to private and public correspondence and to personal interviews.

By direction of the general government, which supplies a portion of the funds for maintaining the station, there are issued an annual

*Resigned, Jan., 1903.

report and frequent bulletins. Nineteen reports and ninety-seven bulletins have been issued to date. Fifteen thousand copies of the reports are printed annually, and the edition of the bulletins comprises from three to twenty thousand copies. These bulletins and reports are free to all residents of the state upon application. The station mailing list now embraces about twelve thousand names of farmers and others to whom the reports and bulletins are regularly sent.

FARMERS' INSTITUTES.

Institute Staff.

GEO. MCKERROW, Superintendent.
NELLIE E. GRIFFITHS, Clerk.

INSTITUTE CONDUCTORS.*

Corps No. 1—W. C. BRADLEY, Hudson.
Corps No. 2—L. E. SCOTT, Neenah.
Corps No. 3—R. J. COE, Ft. Atkinson.
Corps No. 4—H. M. CULBERTSON, Medina.
Corps No. 5—H. H. SCRIBNER, Rosendale.

REGULAR ASSISTANTS.*

W. F. STILES, Lake Mills.
DAVID IMRIE, Roberts.
GEO. C. HILL, Rosendale.
E. NORDMAN, Polar.
DELBERTE UTTER, Caldwell.

OTHER ASSISTANTS.*

C. P. GOODRICH, Ft. Atkinson.
THOS. CONVEY, Ridgeway.
A. A. ARNOLD, Galesville.
C. E. MATTESON, Pewaukee.
N. E. FRANCE, Platteville.
L. P. MARTINY, North Freedom.
E. JACOBS, Menomonie.
J. W. HUTCHINS, Hanover, Mich.
E. A. CROMAN, Grass Lake, Mich.
R. E. ROBERTS, Western Union.
JAS. FISHER, JR., Eastman.
MRS. ADDA F. HOWIE, Elm Grove.
GEORGE B. MCGILVRA, Baraboo.
MRS. JENNIE A. JAMISON, Instructor in Cooking Schools.
MRS. HELEN ARMSTRONG, Instructor in Cooking Schools.

The third division of work of the College of Agriculture is the instruction of farmers who are unable to come to the University for study. This is made possible through generous legislative provisions, by which a carefully supervised system of farmers' institutes is maintained. The institutes are in immediate charge of a superintendent, who elaborates and controls the organization and maintenance of the institutes. He is aided by special conductors, who assist in perfecting details and carrying the whole into effect.

*Appointed each year.

Members of the agricultural faculty render as much assistance as is consistent with their other duties. Experts in different departments are engaged to present special important themes. Lecturers are often brought from other states to treat on specific topics in which they are recognized authorities. Local talent is used to some extent and not the least of the educational benefits is the development of latent ability in writing, speaking and experimenting which has followed as a natural result from the interest awakened by this important stimulus.

During the institute season of 1902-1903 one three-day, one hundred two-day, and ten one-day institutes will be held at as many places in the state. Cooking schools will be held at eleven points.

How to Secure an Institute.

Institutes are placed for the most part in localities which show the greatest interest in this movement. Applications for institutes will be received by the Superintendent and presented to the agricultural committee not later than Sept. 30th. The committee goes over the list and carefully considers the needs and interests of each locality, and places the institutes where, in its judgment, they will prove the most helpful. In the past there have been more applications for institutes than it was possible to supply. Applications should be received before September 15th each year.

The Farmers' Institute Bulletin.

To disseminate still more widely the best matter presented and discussed at the institutes, and to give such material permanency for its own sake and for its historical value, a bulletin giving a stenographic report of the closing institute of each year is issued. Bulletin No. 16, the last issued, contains a stenographic report of the closing institute held at Oconomowoc in March, 1902. Sixty thousand copies of this bulletin have been issued. Eight thousand cloth bound copies will be placed in the school district libraries of the state; thirty-five thousand will be given to the farmers in attendance at the institutes, and the remainder distributed through cheese factories, creameries, etc. Copies will be sent to all applicants living within the state, upon receipt of 10 cents, to pay postage and mailing, if paper covers are desired, and 25 cents for cloth-bound covers. To those outside of Wisconsin, 25 cents for paper covers, and 40 cents for cloth-bound copies will be charged, to cover mailing and cost of publication.

SCHOOL OF MUSIC.

Staff of Instruction.

E. A. Birge, Ph. D., Acting President of the University.
F. A. Parker, *Director*, Musical History, Harmony, Counterpoint, and Organ.
Ada Bird, Piano.
Alice Regan, Piano.
Mary Maud Fowler, Piano.
Adelaide Foresman, Voice.
Elias A. Bredin, Voice, Organ, and Theory.
Genevieve Church Smith, Voice.
Charles Nitschke, Violin, 'Cello, and other orchestral instruments.
Elizabeth Keeley Anderson, Harp.
Frank Charles Bach, Mandolin.
Mrs. Mary E. Brand, Guitar and Banjo.
Olive Lipe, Secretary.

General Announcement.

It is the purpose of the School of Music to furnish superior facilities for the study of music in any or all of its departments, theoretical or practical. The members of the faculty are teachers of acknowledged ability and large experience. Instruction is offered in piano, organ, harp, singing, orchestral instruments, mandolin, guitar, and banjo, and in musical theory, choral practice, harmony, counterpoint and composition. In the study of piano or singing (voice culture) instruction is given by means of private or individual lessons, or, should a sufficient number of students desire it, classes limited to three will be organized. In the study of other instruments, private lessons only are employed. In the theoretical studies students are recommended to join the University classes, but private lessons may be arranged for if preferred.

To meet the convenience of students residing either permanently or temporarily in distant parts of the city, an office and studios have been opened in the Kroncke building, in addition to those in Library Hall at the University. Application for lessons may be made at

either place, the lessons being given where it is found to best suit the convenience of instructor and student.

The lessons vary in length and number per week, for the purpose of adequately meeting the wants of all classes of students, from those who take a large amount of work in other departments of the University to those who devote themselves especially to the study of music with little or no collateral work. In like manner the fees for special instruction vary according to the length and frequency of lessons. These fees, which are given on page 298, are believed to be as low as possible for competent instruction.

It should be observed that special instruction in vocal or instrumental music of any kind may be taken by students not otherwise connected with the University, and that such students are not required to pay the incidental fee.

The general classes in musical theory, harmony, counterpoint, history of music, and musical composition may be taken as electives by students of the College of Letters and Science, who will receive credit for them, as for other studies. These classes are likewise open to students of the other colleges and schools of the University without extra fees.

Students of the School of Music, not otherwise connected with the University, may be admitted to these classes on the payment of the usual incidental fee charged to students of the College of Letters and Science ($10 per semester). The tuition fee required for students in the University who are not residents of the state is not required in the School of Music.

A statement of courses and classes follows. For a statement of credits, see announcements under Music, page 155.

COURSES OF THE SCHOOL.

There are two general courses in the School of Music, viz.: (1) The Collegiate Course, and (2) the Academic Course.

I. The Collegiate Course.

In this course the requirements for admission are the same as for the general courses in the College of Letters and Science, or for adult special students, together with such proficiency in some department of music, as is stated in connection with the outlined courses of study. A graduate's diploma will be granted on the completion of this course. Three years of study are required, including the courses in musical theory, harmony (one year), and history of music, or their equivalents. It is, however, recommended that stu-

dents extend the time to four years to enable them to take a larger proportion of general studies.

II. The Academic Course.

This course is open to persons not members of the University, and also to University students who do not desire to enter the collegiate course pursuant to graduation. Students of this course may, however, be admitted to the musical classes of the University on the payment of the usual incidental fees charged to students of the College of Letters and Science, but will not be considered candidates for graduation or for a diploma. A certificate of excellence will be granted worthy students of this course on examination, after not less than three years of study.

OUTLINE OF COURSES OF STUDY.

I. Collegiate Course.

PIANO.

Applicants for admission will be expected to play music of the grade of Haydn's *Sonata* No. 2, or Mozart's *Sonata* No. 1, Cotta edition, and Heller's *Etudes, Op.* 47.

Mason's or Zwintscher's *Technics* throughout the course.

First year: Kuhner, *Instructive Albums,* II and III. Loew, *Etudes, Op.* 233. Loeschorn, *Op.* 52 and *Op.* 66. Czerny, *Studies in Velocity.* Bach, *Little Preludes and Inventions.*

Second Year: Heller, *Op.* 46 *and* 45. Czerny, *Fingerfertigkeit.* Jensen, *Op.* 32. Cramer-Buelow, *Etudes:* Marmontel, *Mecanisme.* Bach, *Well-Tempered Clavichord.*

Third Year: Tansig, *Studies.* Kullak, *Octave School.* Moscheles, *Op.* 70. Clementi, *Gradus ad Parnassum.* Chopin, *Preludes* and *Etudes.*

Selections of the grade of *Perpetual Motion* by Weber; *Arabeske* by Schumann; *Impromptu, Op.* 29, by Chopin; *Variations, Op.* 54, by Mendelssohn; *Sonata Appassionata* by Beethoven.

It is not supposed that a rigid course can be given which will meet the requirements of individual students, but the foregoing outline represents, in a general way, the character of each year's work. Etudes especially are named, because they indicate grade and character of requirements more clearly than can be done otherwise. No single student is expected to take more than a portion of the studies mentioned, and equivalents are liberally used to suit individual cases. On the other hand, these studies are supplemented

by ample selections from classic and modern authors for use in the parlor or concert room.

ORGAN.

No previous knowledge of organ playing is required. The student must be well grounded in piano playing, be possessed of a correct technique, and be able to read plain four-part music.

The course of study is continuous, beginning with Stainer's *Organ School* or Whiting's *First Six Months on the Organ* and following with the larger works of Rink and Best, supplemented by special studies by Thayer, Buck, Ritter, Schneider, Volckmar, and others. Selections from Bach's organ works, Mendelssohn's Sonatas and the compositions of modern composers are used.

Careful training is given in playing church music and voluntaries, the use of stops and the mechanism of the instrument.

VOICE.

The student must be able to read plain music and must have had an amount of training equal to the first half of Concone's *Fifty Lessons*, and comprising the usual technical study for the same period.

First Year: Tone Placing, Breathing, and Phrasing; Ballad Singing and the Sostenuto style. Technical and other studies of the grade of Bonaldi's *Six Vocalizes*, Concone's *Fifteen Vocalizes*, Marchesi's *Exercises, Op.* 21, Book I., etc. Easy forms of Italian and German songs.

Second Year: Studies of the grade of Schubert's *Manual of Vocal Technique*, Schubert's *Special Studies*, Marchesi's *Vocalizes, Op.* 21, Book II., Bordogni's *Bravura Studies*. More difficult German and French songs, and easy oratorio and operatic arias.

Third Year: Study of cadenzas and larger forms of execution. Recitative and the more difficult oratorio and operatic arias.

On graduation the student will be expected to sing acceptably selections (according to voice and school) from such songs and arias as: "He Was Despised," "Angels Ever Bright and Fair," "I Know That My Redeemer Liveth," and "Thou Shalt Break Them," by Handel; "With Verdure Clad," "Rolling in Foaming Billows," and "In Native Worth," by Haydn; "If With All Your Hearts," "It is Enough," and "O Rest in the Lord," by Mendelssohn; "Ah Non Giunge," by Bellini; "Infelice," by Verdi; "Roberto, tu che Adoro," by Meyerbeer; "Vedrai Carino," by Mozart; "Una Voce," and "Pro Peccatis," by Rossini.

VIOLIN.

First Year. Hermann, *Scale Studies.* Kayser, *Violin Instructor, I. and II.* Herbert Ries, *Violin School, Part I.* Easy melodious solos.

Second Year. Kayser, *Violin Instructor, III.* Kayser, *Etudes, Op.* 29. Schubert, *Violin School, IV.* Herbert Ries, *Violin School, Part III.* Solos by *Viotti, Rode, De Beriot.*

Third Year. Schradieck, *Violin Technic.* De Beriot, *School, Part II. Etudes* by Dont, Kreutzer, and Schubert.

Solos by De Beriot, Leonard, Vieuxtemps, and Wieniawski.

Theoretical Studies.

MUSICAL THEORY AND CHORAL PRACTICE.

A one year course, twice a week, in the general theory of music, including notation, scale construction, intervals, distinctions of rhythm, etc., combined with a practical study of sight reading and choral singing.

This course is especially recommended to all students, whether of instrumental or vocal music, as furnishing a substantial foundation for all other work; it will also be found useful for those who contemplate teaching in public, or similar, schools.

HARMONY AND COUNTERPOINT.

The student must be able to read and play simple four-part music.

First Year: Review of scales, and intervals, triads, seventh chords, augmented sixth chords, modulation, synopsis of suspension and appoggiatura.

Second Year: Detailed treatment of modulation, suspension, appoggiatura, etc. Harmonizing melodies. Simple strict counterpoint.

Third Year: Double counterpoint, canon and fugue.

HISTORY OF MUSIC.

A course of lectures twice a week, extending through the year. In the first semester the lectures give a general survey of music before the Christian era, and down to the eighteenth century.

The second semester is devoted to the eighteenth and nineteenth centuries.

MUSICAL COMPOSITION.*

A one year course, twice a week. One year of harmony is required as preparation.

II. Academic Course.

There are no requirements for entrance. Students are received and graded according to ability and amount of previous study. This course in all departments leads up to and overlaps the collegiate course. Students after reaching the proper stage of preparation may be transferred to the collegiate course, or may remain in the academic course, the work of the last three years being identical in both courses. But no certificate of excellence will be issued to any student who is not thoroughly fitted to enter the second year of the collegiate course.

GUITAR, BANJO AND MANDOLIN.

In response to the demand growing out of the popularity of these attractive instruments, the School of Music provides ample and excellent opportunities for their study. Special attention is given to expression, technique, and proper fingering. In general, correct methods leading to the highest proficiency are employed.

Text-books for Guitar: Carcassi, Sor, Ferranti, Holland, and Langey.

Text-books for Banjo: Dobson, Stewart, Henning, and others.

Text-books for Mandolin: School of Wessenberg, and Progressive Studies by Guiseppi Branzoli, supplemented by solo selections.

ORCHESTRA.

Should a sufficient number of students present themselves for this purpose at the beginning of the year, an orchestra will be organized, and a rehearsal will be held each week. It is open to all students who have sufficient knowledge of any orchestral instrument to pursue the work profitably. Those who take the rehearsals regularly are entitled to a one-fifth credit.

BAND.

A military band has been organized, open to all students. Two rehearsals are held each week. Freshmen and sophomores belonging to the band are exempt from military drill.

*The courses in counterpoint, etc., and in musical composition are inserted here under their proper headings, because they are frequently taken as electives, but they represent graduate work for the students of the School of Music.

CHORAL UNION.

The choral union is an organization of students of the University and citizens of Madison for the purpose of studying the oratorios and larger choral work of ancient and modern authors, interspersed with lighter part-songs and glees, and of adequately presenting the same in public performance. Very successful performances of Handel's *Messiah* and *Judas Maccabaeus*, Haydn's *Creation*, and Mendelssohn's *Elijah* and *St. Paul* have been given, and other works of similar magnitude will follow.

Applicants for membership are expected to be able to read plain music at sight. The rehearsals are held weekly from October until May. The annual membershap fee is one dollar.

RECITALS AND CONCERTS.

Student recitals, free to all students, and open to all others by invitation, are held at intervals during the collegiate year. Recitals and concerts by eminent artists are given from time to time at a low price to students of the school of Music.

Tuition.

The school year is divided into two semesters of eighteen weeks each, but the tuition for musical instruction may be paid by the half-semester.

Half-Semester of Nine Weeks.
Two Lessons a Week.

PIANO.

	½-hour lessons.	¾-hour lessons.	Hour. lessons.
Miss Bird	$13.50	$20.00	$25.00
Miss Regan	18.00	25.00	30.00
Miss Fowler	12.00	16.00	20.00
VOICE.			
Miss Foresman	$18.00	$25.00	
Miss Smith, or Mr. Bredin	13.50	20.00	
ORGAN.			
Professor Parker, or Mr. Bredin	$13.50	$20.00	$27.00
VIOLIN, GUITAR, BANJO, HARP.			
Mr. Nitschke, Mrs. Brand, Mrs. Anderson.	$ 9.00	$13.50	$18.00
MANDOLIN.			
Mr. Bach	$ 6.00	$ 9.00	$12.00

One Lesson a Week.

PIANO.

	½-hour lessons.	¾-hour lessons.	Hour. lessons.
Miss Bird	$ 7.50	$11.00	$13.50
Miss Regan	10.00	13.50	17.00
Miss Fowler	6.00	8.00	10.00

VOICE.

Miss Foresman	$10.00	$13.50	
Mr. Bredin, or Miss Smith	7.50	11.00	

ORGAN.

Professor Parker, or Mr. Bredin	$ 7.50	$11.00	$13.50

VIOLIN, GUITAR, BANJO, HARP.

Mr. Nitschke, Mrs. Brand, Mrs. Anderson.	$ 4.50	$ 6.75	$ 9.00

MANDOLIN.

Mr. Bach	$ 3.60	$5.40	$ 6.75

Diploma Fee, $5.00.

No engagements for less than nine lessons will be made.

Theoretical studies are taken in the University classes, and those who are not otherwise connected with the University are expected to pay the incidental fee of the College of Letters and Science which is $10.00 a semester. The fee, however, is not required of those taking only individual lessons in singing, or on some instrument.

Students are not received for less than a half semester except by permission of the Director of the School of Music. Students are expected to pay the tuition fees by the half semester or semester in advance.

No student is entitled to lessons until tuition has been paid and a receipt secured from the Secretary of the Regents.

No deduction can be made for absence from lessons, except for long continued illness, in which case the School of Music will share the loss equally with the student.

No student is expected to take part in any public entertainment without the consent of his teacher and the Director.

Students who, by reason of deficient musical ability, neglect of study, or any other valid reason, fail to make satisfactory progress, may be dropped from the classes.

The pianos in Library Hall may be used for practice for a limited number of hours daily by students of the University on payment of a fee of from four dollars to ten dollars per semester. Pianos may be rented from dealers at from three to six dollars a month.

The office of the Director in Library Hall at the University

will be open for several days before the opening of each semester for the reception of pupils and assignment of lessons. After the opening of the University the Director may be found daily at Library Hall, from 10 to 11, or at the office in the Kroncke building from 9 to 10.

For further information, address

F. A. PARKER, Director, 14 W. Gilman St., or
MISS OLIVE LIPE, Secretary, 632 State St.,
Madison, Wis.

DEGREES.

CONFERRED ON COMMENCEMENT DAY, 1902.

COLLEGE OF LETTERS AND SCIENCE.

Bachelor of Arts.

ANCIENT CLASSICAL COURSE.

Paul Marie Binzel.
Wilhelmina Georgii Case.
Harvey Phineas Clawson.
Emma Belle Glasier.
Grace Ginevra Godard.
Carolyn Virginia Hayner.
Bessie Miriam Krape.
James Garfield McFarland.
Agnes Merrill.
William Francis Moffat.
Henry Edward Murphy.
C rnelia Emma Notz.
Harold Stuart Peterson.
Katharine Wentworth Sanborn.
Harry Sauthoff.
Richard Frederick Scholz.
Florence Madeline Shaw.
Philip Loring Spooner.
John Burroughs Stearns.
Mary Adelaide Stoppenbach.
Mary Brayton Swain.
Henry Overbeck Winkler.

Bachelor of Letters.

MODERN CLASSICAL COURSE.

Ruby May Acker.
Celia Minerva Astle.
John Vincent Brennan.
Mary Lucile Cheever.
Bessie Etta Cottrell.
Otto Björn Dahle.
Ella Lydia Esch.
Thomas Francis Frawley, Jr.
Blanche Fulton.
Nellie Galusha.
Adah Georgina Grandy.
Ella Streeter Hardy.
August Frederick Hasse.
Ruth Heaton.
Kate L. Hocking.
Carolyn Gestina Holah.
Alice Fanny Jackson.
Maude Abigail Latta.
Edna Marie Leihy.
Mayme Karnes McMahon.
Sadie Lovina Millington.
Florence Harriet Ramsey.
Josephine Ross.
Eleanor Julia Sawyer.
Sarah Jennie Seeber.
Selma Alvina Steinfort.
Maud Martha Stephenson.
Freda Dorothea Stolte.

Carrie Edith Thompson.
Ella Frances Tormey.
George Bryant Vinson.
Florence Ellis Weissert.
Florence Mary White.
Emma Susan Witwen.

CIVIC HISTORICAL COURSE.

Bernice M. Ballard.
Lelia Bascom.
Horace Herbert Bass.
Dwight Eastman Beebe.
Lucius Seymour Bergstrom.
William Beye.
John Edwin Brindley.
Elsie Clare Cady.
William Campbell.
Fred Hiltman Carpenter.
Hattie May Chamberlin.
Robert Kirtland Coe.
Victor Doughty Cronk.
Robert Moses Davis.
Esther Donnelly.
George Herman Gabel.
Anna Mercedes Gapen.
Denny Clough Gates.
Arthur Dudley Samuel Gillett.
Dana Irving Grover.
Robert Wilber Haight.
Genevieve Mary Hayes.
Kenneth Edwin Higby.
Edna Lydston Hooley.
Avis Ethel Hughes.
Arthur Philip Henry Inbusch.
Henry Lorenzo Janes.
Chester Lloyd-Jones.
James Batson Lindsay.
†Lewis George Lohr.
John Quinton Lyman.
George Francis Markham.
Norah Bryant McCue.
Edith Bonar Martin.
Walter Reginald Menzel.
Myrtle N. Morrissey.
Louis John Paetow.
John Bartow Patrick.
Alfred John Rhodes.
Jeanette Limbert Sage.
Laura Elisabeth Sage.
Charlotte Emma Shedd.
Jennie Bentley Sherrill.
William Edward Smith.
Florence Mitchell Spence.
Max Hugo Strehlow.
Arthur Benedict Uihlein.
Waldemar Carl Wehe.
Mary Wright.

Lewis Welling Mills, is of the Class of 1901.

ENGLISH COURSE.

Maude Elinor Abbott.
Ella Andrea Barton.
Frank Winslow Bucklin.
Kittie Louise Button.
Emily Blanche Clark.
Agnes Viola Davison.
Clarence John Du Four.
Charlotte Augusta Ehrlich.
Ida Elliott.
Henry Minor Esterly.
Bess Carolynn Ferguson.
Ivah Lulu Gilbert.
Alfred Grotophorst.
Henry Adolph Gunderson.
Grace Mae Hayden.
Julia Christine Holland.
Walter Sawyer Hopkins.
Solomon Huebner.

Tinora Luthera Kasberg.
Margaret Julia Kennedy.
Harriet White Kerns.
Nicholas Claude Kirch.
Bessie Mae Kratz.
Jessie Pamelia Kroehnke.
Frederick Oscar Leiser.
Ada Crang Lloyd.
Benjamin Franklin Lounsbury.
Lillie McDonald Merrill.
John Calkins Miller.
Nelly Catherine Moldstad.
Esther Marion Newman.
Michael Balthasar Olbrich.
John Albert O'Meara.
John Francis Powers.
Lehman Peter Rosenheimer.
William Ryan.
Zella Mary Shimmins.
Harriet Belle Stewart.

COMMERCE COURSE.

Robert Lachmund.
Frederick August Vogel.

GERMAN GROUP.

Lorine Anna Knauf.
Norma Mildred Stark.

HEBREW GROUP.

Fred Herman Rehberg.

HISTORY GROUP.

Alice Emily Chamberlain.
William Arthur Lee.
Mary Gifford Peckham.
Merle Sears Pickford.

MATHEMATICS GROUP.

Alfred Frank Fairbank.
Rose Alice Pesta.
Clara Johnson Van Velzer.

PHILOSOPHY GROUP.

George Henry Gohlke.
William Albert Vivian.

Bachelor of Science.

GENERAL SCIENCE COURSE.

Martin Fuller Angell.
Agnes Embree Case.
Arthur Hale Curtis.
Homer Rodger Dopp.
Gerhard Olaus Fortney.
Paul Clark Foster.
†Ada Lovisa Hawley.
Henry Fred Helmholz.
Samuel George Higgins.
Marie Gardiner Hinkley.
Charles Dana Hunter.
Leora Einsel Klahr.
Charles Edwin Long.
Cora Emma Meyer.
Harry Dale Murdock.
Hal Murley.
John Wilson Nevius.
Arthur Reitman.
Berl De Witt Richardson.
Frances Mary Roddis.
Otto Ernst Ruhoff.
George Henry Scheer.

Edwin Henry Schorer.
Percy Edward Schroeder.
Charlotte Mayo Simonds.
Warren Du Pre' Smith.
Glenn S. Steere.
Otellia Anna Stucki.
Helen Gladys Thompson.
Willis Willard Waite.
Christian Westergaard.
Hugo August Winkenwerder.

ENGLISH GROUP.

Blanche Hilma Ranum.

MATHEMATICS GROUP.

Adele Eiche.

Bachelor of Philosophy in Pedagogy.

Ida Maud Brewster.
Mira Congdon.
Irene Minerva Durley.
Louise Sarah Foote.
John Edward Hanzlik.
Harry Gilbert Hayden.
John Henry Jordan.
William Hartt Kelly.
Charles Emory Lamb.
Nellie Margaret Lamoreux.
Genevieve Stilson McDill.
Edward McGrath.
Alma Louise McMahon.
Reginald Anderson Nestos.
William Henry Parker.
Mabel Sarah Perrin.
Samuel Beatty Ray.
Arthur Lee Rhodes.
Bertha Lavina Robinson.
Elizabeth Howe Shepard.
Charles Edgar Slothower.
William James Sutherland.
Madge Elizabeth Thompson.

COLLEGE OF MECHANICS AND ENGINEERING.

CIVIL ENGINEERING COURSE.

William Carl Berg.
Anton Daniel Ehrnbeck.
Rudolph Hartmann.
Walter Franklin Mabbett.
Sherman Moore.
Chester Harris Stevens.
Louis Richard Stockman.
Arthur Carl Olsen.
Sidney Olson.
George Andrew Polley.
Ira Craft Sunderland.

MECHANICAL ENGINEERING COURSE.

Bertram Francis Adams.
Gustave Alexander Anderson.
Felix William Boldenweck.
Charles Melville Cole.
Harry West Cole.
Herbert William Dow.
William Johnson Gibson.
John Chester Grey.
James Garfield Hammerschlag.
Irving Raymond Hippenmeyer.
George Edward McEvoy.
Arthur Bernard Saunders.
Kurt Schapper.
Robert Tynes Smith, Jr.
Sanford Putnam Starks.
William Louis Thorkelson.

ELECTRICAL ENGINEERING COURSE.

Milan Ray Bump.
Frederic Abraham De Lay.
Roy Raymond Earle.
Gustave William Richard Ehreke.
Stephen Gardner.
Patrick John Kelley.
Oliver Bernard Kohl.
William Frederic Lathrop.
John McKenzie Lea.
Preston Winfield Pengra.
George Alvin Scott.
Frederick Carl Stieler.
Lewis Augustus Terven.
James Webster Watson.
Henry Walter Young.

GENERAL ENGINEERING COURSE.

Hawley Daniel Lennon.

COLLEGE OF AGRICULTURE.

AGRICULTURAL COURSE.

George Alfred Olson.
John Agard Ross.
Frank George Swoboda.
Joseph Frank Wojta.

COLLEGE OF LAW.

Bachelor of Laws.

Thorwald Peter Abel.
Lake Cohen Alexander.
John Burton Andrews.
Chauncey Goodrich Austin, Jr.
Worth Sherman Bardwell.
William Carl Berg.
Adelbert E. Bleekman, Jr.
Ralph von Blethen.
August Ernest Braun.
Louis Arthur Brunckhorst.
William Arthur Campman.
Jorge Wilmer Carow.
Charles Henry Cashin.
Edward James Cockerill.
Louis Albert Copeland.
Gilbert John Davelaar.
Thomas Francis Davlin.
Henry Minor Esterly.
Raymond Clarence Fairbank.
Henry Mathias Fellenz.
Alexander Philip Greenthal.
Edward Charles Griesel.
Earl Bertram Harkin.
Harry Roland Hewitt.
Harry Mears Hobbins.
Walter Wellington Hughes.
John James Jeffrey.
Lawrence Marius Jeger.
Robert Albert Kaftan.
Harry F. Kelley.
Harry Gladstone Kemp.
Charles Kirwan.
Isaac Milo Kittleson.
Josph Koffend, Jr.
Philip C. Kopplin.
Albert Frederick Larson.
George Edward Larson.
Lewis Lawson.
Otto Augustus Lemke.
Herbert Alvin Lundahl.
John James Mann.
James Cooper McKesson.
Daniel Paul Meyers.
James Andrew Michaelson.
Lewis Welling Mills.
Harry James Mortensen.

Harry John Murrish.
Warren Jefferson Neville.
Victor Joseph O'Kelliher.
Ernest Andrew O'Neill.
Louis Belknap Reed.
Harry Lee Reevs.
John Whitcome Reynolds.
Victor Eugene Rogers.
Dennis Francis Scanlan.
Emil Scow.
Herman Henry Taylor.
Ferdinand George Charles Voigt.
Edmund W. Wheelan.
Bunn Thatcher Wilson.
Charles G. Yankey.

SCHOOL OF PHARMACY.

PHARMACY COURSE.

Helen Sherman.
Susan Swarthout.

Graduate in Pharmacy.

Ralph Waldo Danuser.
Berton Elmer Ketcham.
Harry Briggs North.
Otto Arthur Soell.
Reginald Owen Schoen.
Melvin Eugene Tweeden.

SCHOOL OF MUSIC.

Graduate in Music.

Anna Elizabeth Ackerman.
Anna Louise Anderson.
Anna Mercedes Gapen.
Janette Louise Montgomery.
Lyla Albina Ransom.
Madge Ella Stedman.

HIGHER DEGREES.

Master of Arts.

Herman Churchill, A. B. (Syracuse University), in English Literature and History—

Thesis: Heredity as treated by some of the principal New England authors.

Hattie Josephine Griffin, A. B. (University of Wisconsin), in Latin and Greek—

Thesis requirement satisfied by baccalaureate thesis of 1898.

Stephen Augustus Hurlbut, A. B. (University of Wisconsin), in Greek and Latin—

Thesis requirement satisfied by baccalaureate thesis of 1901.

Marie McClernan, A. B. (University of Wisconsin), in Greek and Latin—

Thesis requirement satisfied by baccalaureate thesis of 1900.

Florence Beatrice Mott, A. B. (Lawrence University), in History and Latin—

Thesis: A study of Lincoln Cathedral chapter from 1427 to 1447.

Edward Rissman, (Student Freiburg University, Germany), in Greek and Latin—

Thesis: Plataea.

Frederic Milo Van Horn, A. B. (University of Wisconsin), in Latin and Greek.

Thesis requirement satisfied by baccalaureate thesis of 1900.

Guy Maurice Wilcox, A. B. (Carleton College), in Physics and Chemistry—

Thesis: The optical rotary power of cane sugar when dissolved in pyridine and in amines.

Daniel Jenkins Williams, A. B. (University of Wisconsin), in Hebrew language and Literature—

Thesis: The attitude of the early prophets toward the high places.

Louis Bernard Wolfenson, A. B. (University of Wisconsin), in Hebrew language and Literature—

Thesis requirement satisfied by baccaalureate thesis in 1901.

Master of Letters.

Rachel Kelsey, Ph. B. (University of Wisconsin), in English literature and History—

Thesis requirement satisfied by baccalaureate thesis in 1901.

Eva McNally, B. L. (Lincoln University), in English—

Thesis: The relation of William Morris to Geoffrey Chaucer.

Helen Belknap Richardson, A. B. (Tulane University), in Latin and History—

Thesis: Burial rites and cult of the dead as found in Virgil.

Master of Science.

Irving Walter Brandel, B. S. (University of Wisconsin), in Pharmaceutical Chemistry and Physical Chemistry—

Thesis: Bibliography of volatile oils.

Roy Dykes Hall, B. S. (University of Wisconsin), in Chemistry and Mineralogy—

Thesis: Action of tellurium and selenium on gold and silver salts.

George Edward King, Ph. B. (Baker University), in Mathematics and Astronomy—

Thesis: An investigation of terrestrial refraction.

Arthur Alexander Koch, B. S. (University of Wisconsin), in Chemistry and Mineralogy—

Thesis requirement satisfied by baccalaureate thesis of 1900.

John Frederick Nicholson (University of Wisconsin), in Bacteriology and Agricultural Chemistry—

Thesis: On the changes affecting the solubility of casein.

John Wesley Raymer, B. S. (University of Wisconsin), in Chemistry and Physics—

Thesis: Molecular refraction of silver nitrate in non-aqueous solutions.

Winifred Titus, B. S. (University of Wisconsin), in Chemistry and Physiology—

Thesis: Some double halogen salts of tellurium with the alkaloids.

Master of Philosophy.

August William Weber, Ph. B. (University of Wisconsin), in Philosophy and Pedagogy—

Thesis: Some theories of visual space.

Master of Pharmacy.

Thomas Guy Windes, Ph. G. (University of Wisconsin)), in Chemistry and Physiology—

Thesis: Glycerophosphoric acid and glycerophosphates.

Electrical Engineer.

Ferdinand John Foote, B. S. (University of Illinois), in Alternating Currents—

Thesis: Design of induction motors.

Doctor of Philosophy.

Herman Gustav Adolph Brauer, A. M. (University of Wisconsin), in French Literature, Ethics and German Literature—

Thesis: The Philosophy of Ernst Renan.

Charles Hart Handschin, A. B. (German Wallace College), in German Philology, English and Norse—

Thesis: Das sprichwort bei Hans Sachs.

Benjamin Horace Hibbard, B. S. A. (Iowa State College), in Economics, History and Sociology—

Thesis: The history of agriculture in Dane county, Wisconsin.

Lawrence Marcellus Larson, A. M. (University of Wisconsin), in History, English and Old Norse—

Thesis: The household of the English kings before the Norman conquest.

Harrison Eastman Patten, A. B. (Northwestern University), in Chemistry, Applied Electro-Chemistry and Pharmaceutical Chemistry—

Thesis: Influence of the solvent in electrolytic conduction.

Anna Yeomans Reed, A. M. (University of Nebraska), in American history, European history, and Philosophy—

Thesis: The revolution in Hawaii.

Margaret Anna Schaffner, A. M. (University of Wisconsin), in Economics, Sociology, and American History—

Thesis: The labor contract with special reference to collective bargaining in the United States.

Oswald Schreiner, Ph. G., M. S. (University of Wisconsin), in Chemistry, Physical Chemistry, and Mathematics—

Thesis: The sesquiterpenes.

Arthur Curtis Scott, B. S. (R. I. Coll. of Agr. and Mech. Arts), in Alternating Currents of Electricity, Experimental Physics and Geology—

Thesis: Rotations reduced by alternating currents.

Henry Charles Taylor, M. S. (Iowa Agricultural College), in Economies, History and Sociology—

Thesis: The decline of land owning farmers in England.

Allyn Abbott Young, Ph. B. (Hiram College), in Economies, History and Statistics—

Thesis: Studies in age statistics.

HONORARY DEGREE.

Doctor of Laws.

William Wallace Campbell,
Director of the Lick Observatory, Mount Hamilton, Calif.

William Trelease,
Director of the Missouri Botanical Garden, St. Louis, Mo.

Minton Warren,
Professor of Latin, Harvard University, Cambridge, Mass.

Honors in Special Studies.

Martin Fuller Angell, in Physics—

Thesis: The absorption of infra-red radiations by a series of liquids.

Arthur Dudley Samuel Gillett, in Economics—

Thesis: The banking facilities of the United States, with regard to distribution.

Solomon Huebner, in Economics—

Thesis: Inheritance taxation in the American commonwealths.

Charles Dana Hunter, in Chemistry—

Thesis: The reactions between ferrous salts and nitric oxide.

Louis John Paetow, in European History—

Thesis: The arts course at the French universities in the thirteenth and fourteenth centuries.

Rose Alice Pesta, in Mathematics—
Thesis: The operator Δ in tangential co-ordinates.

Merle Sears Pickford, in American History—
Thesis: The beginnings of Madison, Wisconsin.

Richard Frederick Scholz, in Greek—
Thesis: The tyrant in Greek thought with a critical discussion of Aristotle's theory of tyranny.

Charlotte Emma Shedd, in Psychology—
Thesis: An experimental contribution to the psychology of spelling.

John Burroughs Stearns, in Latin—
Thesis: The position of woman in Roman satire.

SUMMARY OF GRADUATES.

		1902
Number of first degrees granted, 1854—1902	4,723	337
Ancient Classical Course, 1854—1902	450	22
Modern Classical Course, 1876—1902	514	38
English Course, 1887—1902	414	46
Civic-Historical Course, 1893—1902	343	51
General Science Course, 1866—1902	696	33
School of Commerce, 1902	2	2
Philosophical Course, 1898—1902	96	23
Normal Course, 1865—1868	25	..
Civil Engineering Course, 1873—1902	166	11
Mechanical Engineering Course, 1876—1902	137	16
Electrical Engineering Course, 1892—1902	114	15
Metallurgical Engineering Course, 1876—1896	16	..
General Engineering Course, 1901—1902	2	1
Law Course, 1869—1902	1,477	61
Pharmacy Courses, 1884—1902	216	8
Agricultural Course, 1878—1902	20	4
School of Music	35	6
Higher degrees on examination.		
Master of Arts, Letters, and Science, 1879—1902	194	22
Engineers, 1875—1902	58	1
Doctors of Philosophy, 1892—1902	53	11

STUDENTS.

GRADUATES.

Fellows.

Barnett, James Duff, A. M., College of Emporia, ... 916 W. Dayton.
Fellow in Political Science.

Boyle, James Ernest, A. M., Univ. of Kan., 1210 W Dayton.
(Social Settlement Fellowship of Milwaukee.)

Brandel, Irvin Walter, B. S., Univ. of Wis., 117 S. Butler.
Honorary Fellow in Pharmacy.

Clark, Robert Carlton, A. M., Univ. of Texas, ... 811 W. Dayton.
Fellow in American History.

Fernekes, Gustave, B. S., Univ. of Wis. . 221 Wisconsin Ave.
Fellow in Chemistry.

Hadley, Stephen Marshall, A. M., Harvard Univ., ... 935 W. Johnson.
Honorary Fellow in Mathematics.

Hauhart, William Frederic, A. M., Univ. of Mo., ... 724 W. Johnson.
Fellow in German.

Kelsey, Rachel Marjorie, M. L., Univ. of Wis., ... 939 University Ave.
Fellow in English Literature.

Knight, Henry Seymour, A. B., Williams College . . . . . 919 University Ave
Fellow in Hellenistic Greek (Biblical Alliance Fellowship.)

Leavitt, Orpha Euphemia, A. B., Doane College, ... 209 W. Gilman.
Honorary Fellow in American History.

McClernan, Marie, A. M., Univ. of Wis. . 303 W. Washington Ave.
Fellow in Greek.

Mott, Florence Beatrice, A. M., Univ. of Wis., ... Chadbourne Hall.
Fellow in European History.

Newman, Mark Humphrey, A. B., Univ. of Wis., ... 2 Langdon.
Honorary Fellow in Geology.

Nichols, Susie Percival, B. S., Cornell Univ., Chadbourne Hall.
Fellow in Biology.

Perdue, Rosa Maud, A. M., Kansas Univ.,
(Social Settlement Fellowship of Chicago.)

Pesta, Rose Alice, B. L., Univ. of Wis., . 113 Charter.
Fellow in Mathematics.

Pfund, August Herman, B. S., Univ. of Wis., ... 9 N. Hancock.
Fellow in Physics.

Quaintance, Hadly Winfield, A. M., Univ. of Illinois, ... 302 Lake.
Honorary Fellow in Economics.

Rosebush, Judson George, A. M., Alfred Univ., ... 441 Lake.
Fellow in Economics.

Ruger, Henry Alford, A. B., Beloit College, 901 University Ave.
Fellow in Philosophy.

Scholz, Richard Frederick, A. B., Univ. of Wis., ... 119 N. Bassett.
Fellow in Latin.

Scholars.

Baldvin, Oliver Helgason, A. B., Univ. of Toronto, ... 433 Frances.
Henrik Wergeland Scholar (Norse).

Breslich, Arthur Louis, A. B., Berea College, 116 E. Mifflin.
Graduate Scholar in Hebrew and Hellenistic Greek.

Haight, Robert Wilber, B. L., Univ. of Wis., 619 Frances.
Scholar in American History.

Haussmann, John Fred, A. B., Univ. of Mich., ... 308 Murray.
Sheboygan Graduate Scholar (German Philology.)

Huebner, Solomon, B. L., Univ. of Wis., . 412 Charter.
Scholar in Economics.

Ingersoll, Leonard Rose, B. S., Colorado College, ... 1104 W. Johnson.
Scholar in Mathematics.

Kamiyama, Bentaro, Chinzei Gakkwan College, ... 315 Lake.
B. K. Miller, Jr., Scholar.

Kawakami, Karl Kiyoshi, A. M., Univ. of Iowa, ... 709 University Ave.
Scholar in Political Science.

Ketchum, Florence Josephine, B. L., Univ. of Wis., ... 1111 E. Johnson.
John C. Freeman Scholar (English.)

Paetow, Louis John, B. L., Univ. of Wis., 119 N. Bassett.
Scholar in European History.

Stearns, John Burroughs, A. B., Univ. of Wis., ... 512 Wisconsin Ave.
William F. Allen Scholar (Greek and Latin).

Watson, James Webster, Univ. of Wis., . 606 Frances.
Scholar in Engineering.

—33

Resident Graduates.

Adams, Bertram Francis, B. S., University of Wisconsin. *Madison.*
Economics, English, French.

Albrecht, Sebastian, B. S., University of Wisconsin, *Milwaukee.*
Mathematics, Astronomy.

Allen, Charles Elmer, B. S., University of Wisconsin, *Madison.*
Botony, Zoology.

Anderson, Lewis Albert, B. L., University of Wisconsin, *Mt. Horeb.*
Political Science, Economics, History.

Anderson, William Ballantyne, B. S., University of Wisconsin, *Madison.*
Physics, Mathematics, Physical Chemistry.

Angell, Martin Fuller, B. S., University of Wisconsin, *Delavan.*
Physical Chemistry, Physics.

Ball, Sydney Hobart, A. B., University of Wisconsin, *Oak Park, Ill.*
Geology, Petrology, Physical Chemistry.

Bass, Horace, Herbert, B L., University of Wisconsin, *Platteville.*
History.

Bergh, August Bernhard, A. B., St. Olaf College, *Beloit.*
History, English.

Blackburn, Arthur William, A. B., University of Wisconsin, *Madison.*
History.

Blodgett, Maude Catharine, B. L., University of Wisconsin, *Sharon.*
English, German.

Boggess, Arthur Clinton, A. B., University of Illinois, *Catlin, Ill.*
History, French.

Bouska, Frank William, M. S., Iowa State College, *Protivin, Ia.*
Bacteriology, Agricultural Chemistry, Botany.

Bowen, Charles Franklin, B. S., Brigham Young College, *Samaria, Idaho.*
Geology, Mineralogy, Chemistry.

Brigham, Bertha Blanche, B. L., University of Wisconsin, *Madison.*
English, Latin.

Brindley, John Edwin, B. L., University of Wisconsin. *Boscobel.*
Economics, American History.

Brown, John Clarence, M. S., Iowa State College, *Dexter, Ia.*
Agricultural Chemistry, Bacteriology, German.

Bruner, Matilda Elizabeth, B. S., Drake University, *Des Moines, Ia.*
Chemistry, Geology.

Bruns, Frederick, A. B., Wartburg College, *Sheffield, Ia.*
German, Greek.

Burgess, Charles Frederick, E. E., University of Wisconsin, *Madison.*
Applied Electro-Chemistry, Electro-

Chemistry, Electrical Transmission of Power.

Bussewitz, Maxillian Alfred, A. M., University of Wisconsin, *Milwaukee.*
Pedagogy, Psychology, Philosophy.

Cartwright, Forest Simpson, Ph. B., University of Chicago, *Madison.*
Economics, Political Science.

Castenholz, William Burtice, A. B., University of Indiana, *Indianapolis, Ind.*
History.

Castle, Mildred Alice, B. L., University of Wisconsin, *Madison.*
French, Spanish, Italian.

Clemons, William Voltaire, Ph. B., University of Wisconsin, *Prairie du Sac.*
Philosophy, Mathematics.

Crathorne, Arthur Robert, B. S., University of Illinois, *Champaign, Ill.*
Mathematics.

Denniston, Rollin Henry, B. S., University of Wisconsin, *Madison.*
Botany, Zoology.

Ela, Mary Hazeltine, B. L., University of Wisconsin, *Rochester.*
American History, Latin.

Frost, William Dodge, M. S., University of Minnesota, *Madison.*
Bacteriology, Botany, Chemistry.

Goodnight, Scott Holland, A. M., Eureka College, *Madison.*
German, French.

Grimsby, Henry Julius Peterson, A. B., St. Olaf College, *Viroqua.*
History, English.

Hancock, Eugene Thomas, B. S., University of Wisconsin, *Madison.*
Geology, Chemistry.

Hayden, Cassius Clay, B. S., Ohio State University, *Oakdale, O.*
Dairy Bacteriology, Dairy Chemistry.

Herfurth, Sabena Mildred, M. L., University of Wisconsin, *Madison.*
German, English, Norse.

Hockett, Amy Francisco, B. L., Earlham College, *Madison.*
Economics, Policital Science.

Hocking, Kake L., B. L., University of Wisconsin, *Mineral Point.*
English.

Holden, Roy Jay, B. S., University of Wisconsin, *Sheboygan Falls.*
Chemistry, Mineralogy, Geology.

Huddle, Wiley Jerome, A. B., Indiana University, *Attica, Ind.*
Chemistry.

Huffman, Lenna May, Ph. B., Cornell College, *Marion, Ia.*
German, English, Latin.

Hutchins, Edgar Burton, Jr., M. S., Ottawa University, *Madison.*
Chemistry.

Icke, John Frederick, B. S., University of Wisconsin, *Madison.*
Civil Engineering.

Inouye, Naojiro, Osaka College of Pharmacy, *Harima, Japan.*
Pharmaceutical Chemistry.

Janes, Henry Lorenzo, B. L., University of Wisconsin, *Racine.*
Political Science, History.

Johnson, Perry Spencer, A. B., Luther College, *Decorah, Ia.*
Political Science, Economics.

Johnson, Roswell Hill, B. S., University of Chicago, *Madison.*
Zoology, Botany, Economics.

Kelly, William Hartt, Ph. B., University of Wisconsin, *Madison.*
Physics, Mathematics.

King, Bessie Susan, B. L., University of Wisconsin, *Neillsville.*
Latin, Greek.

Knauf, Lorine Anna, B. L., University of Wisconsin, *Chilton.*
German, English, Philosophy.

Krape, Bessie Miriam, A. B., University of Wisconsin, *Freeport, Ill.*
Latin, History, Geology.

Laney, Francis Baker, B. S., Drury College, *Springfield, Mo.*
Geology, Chemistry, Mineralogy.

Lee, William Arthur, B. L., University of Wisconsin, *Madison.*
Hebrew, Hellenistic Greek.

Lorenz, Max Otto, A. B., University of Iowa, *Iowa City, Ia.*
Economics, Political Science, Sociology.

Lovdal, Bjarne, Graduate of Technical High School, Munich, *Bergen, Norway.*
Bacteriology, Agriculaural Chemistry, English.

McKenny, Charles, A. M., Olivet College, *Milwaukee.*
Psychology, Pedagogy, Philosophy.

McMahon, Alma Louise, Ph. B., University of Wisconsin, *Ripon.*
English, History.

Meisnest, Frederick William, B. S., University of Wisconsin, *Madison.*
German Literature, German Philology, English Philology.

Millar, Adam Vanse, M. S., University of Illinois, *Mattoon, Ill.*
Mathematics.

Nelson, John Mandt, B. L., LL. B., University of Wisconsin, *Madison.*
English Literature, Philosophy.

Newell, Albert Bulkley, B. S., Ottawa University, *Stella, Nebr.*
Chemistry.

Noelke, Augusta Elizabeth, B. L., University of Wisconsin, *La Crosse.*
German, English, French.

Patzer, Otto, M. L., University of Wisconsin, *Wausau.*
French, Spanish.

Persons, Warren Milton, B. S., University of Wisconsin, *Madison.*
Mathematics, Economics.

Pooley, William Vipond, A. B., University of Illinois, *Galena, Ill.*
History, Economics, Political Science.

Redmond, William, A. B., Indiana University, *Ridgeville, Ind.*
History, Economics, Political Science.

Rosa, Charles Darwin, Ph. B., Beloit College, *Madison.*
History.

Rosa, Grace Lilian, A. B., Beloit College, *Madison.*
History.

Ross, Harry Lloyd, A. B., Colorado College, *Madison.*
Economics, Political Science.

Ruediger, William Carl, Ph. B., University of Wisconsin, *Alma.*
Philosophy, History, Pedagogy.

Ruger, Georgie Johns, Ph. B., Oberlin College, *Janesville.*
Botany, Hellenistic Greek, Hebrew.

Sakagami, Yasuzo, M. L., University of Minnesota, *Madison.*
Political Science, Economics, History.

Schultz, Alfred Reginald, B. S., University of Wisconsin, *Tomah.*
Geology, Chemistry, Mineralogy.

Sears, Rolla Gilbert, B. L., A. B., Christian University, *Center, Mo.*
Hebrew, Greek, German.

Seymour, Arthur Romeyn, M. L., University of Wisconsin, *Reedsburg.*
French, Spanish.

Shaw, Florence Madeline, A. B., University of Wisconsin, *Sioux City, Ia.*
English, History.

Shinn, Frederick Lafayette, A. M., Indiana University, *Montpelier, Ind.*
Physical Chemistry, Organic Chemistry, Mathematics.

Smith, Warren Du Pré, B. S., University of Wisconsin, *Madison.*
Geology, Mineralogy, Philosophy.

Smith, William Noble, B. L., University of Wisconsin, *Madison.*
Geology, Petrology, Physical Chemistry.

Stone, Jesse Raymond, A. B., University of Wisconsin, *Burnett Jct.*
English Literature, History, Economics.

Strong, Edgar Freeman, B. L., University of Wisconsin, *Madison.*
Economics, History, Sociology.

Terry, Earle Melvin, A. B., University of Michigan, *Battle Creek, Mich.*
Mechanics, Mathematics, Physics.

Timberlake, Hamilton Greenwood, M. S., University of Michigan, *Madison.*
Botany, Zoology.

Tuttle, Arthur Barnes, Iowa Wesleyan University, *Newton, Ia.*
Chemistry.

Veerhusen, Elsbeth, A. B., University of Wisconsin, *Madison.*
German, English, Norse.

Vorheis, Charles Taylor, B. S., Iowa Wesleyan University, *Mt. Pleasant, Ia.*
Biology, Chemistry, Geology.

Wolfenson, Louis Bernard, A. M., University of Wisconsin, *Madison.*
Syriac, Comparative Philology.

Graduate Studying in Absentia.

Lynch, Samuel Adams, A. M., University of Chicago, *West Superior.*
English, Pedagogy, Philosophy. —86

UNDERGRADUATES.

College of Letters and Science.

SENIOR CLASS.

Anderson, Julia Marjorie,	*Racine,*	M. C.
Anderson, Mina Aletha,	*Argyle,*	Eng.
Anderson, Peter Olson,	*Brodhead,*	S. C.
Andrews, Ruth Catherine,	*Hudson,*	Eng.
Ap Roberts, Percy,	*International Falls, Minn.*	Eng.
Atwater, William Whittlesey,	*Chicago, Ill.,*	C. H.
Barkhausen, Clara Marie,	*Green Bay,*	C. H.
Barnard, David Luther,	*Madison,*	G. S.
Barney, Sybil,	*West Bend,*	Eng.
Barry, Hamlet J.,	*Milwaukee,*	C. H.
Bauer, Oscar Hugo,	*Brownsville,*	Eng.
Beck, Joseph David,	*Madison,*	Phil.
Beers, Leslie Weymouth,	*Rhinelander,*	Eng.
Bennett, Persis May,	*Belleville,*	G. S.
Bevans, Alice Jean,	*Decatur, Ill.,*	M. C.
Bigelow, George Tyler, Jr.,	*Milwaukee,*	A. C.
Birge, Edward Grant,	*Madison,*	G. S.
Bishop, Edwin Sherwood,	*Somers,*	C. H.
Bishop, Jean Frank,	*Dillon, Mont.,*	Eng.
Bissell, Lizzie Cacendra,	*Madison,*	G. S. (Physics)
Bossard, Gertrude Melin,	*Kaukauna,*	M. C.
Bradley, Grace Marie,	*Madison,*	Eng.
Bray, Francis Moore,	*Cuba City,*	Phil.
Bray, Frank Cronin,	*Cuba City,*	Phil.
Brayton, Fannie Elizabeth,	*La Crosse,*	A. C.
Bready, James Ely,	*Dubuque, Ia.,*	A. C.
Brindley, Willis Edge,	*La Crosse,*	C. H.
Byrne, Eugene Hugh,	*Baraboo,*	C. H.
Carpenter, Henry Fayette,	*Janesville,*	C. H.
Case, Helen Alice,	*Milwaukee,*	Phil.
Challoner, George,	*Oshkosh,*	M. C.
Chapman, Raymond, Morgan,	*Milwaukee,*	G. S.
Christman, Arthur Henry,	*Menomonee Falls,*	G. S.
Clark, Wallace Reeves,	*Madison,*	C. H.
Clough, Paul Wiswall,	*Portage,*	G. S.
Coleman, Mary Persis,	*Chippewa Falls,*	M. C.
Cook, Edna Browning,	*Madison,*	Phil.
Cook, Herbert Leigh,	*Madison,*	G. S.

Cook, Lilian Adelle,	*Madison,*	Phil.
Cook, Luella Davey,	*Madison,*	G. S.
Corstvet, Alexander Oscar,	*Deerfield,*	Eng.
Craigo, Cathaleen Mae,	*Monroe,*	M. C.
Crawford, Robert Storey,	*Mineral Point,*	Eng.
Cunningham, Mary Florence,	*Chippewa Falls,*	C. H.
Davis, William Lloyd,	*Mauston,*	Phil.
Dean, Alletta Friscone,	*Iron River,*	Phil.
Dernehl, Paul Herman,	*Milwaukee,*	G. S.
Dessaint, Edna,	*Davenport, Ia.,*	A. C.
Disque, Robert Conrad,	*Burlington, Ia.,*	M. C.
Dixon, Grace Shirley,	*Milwaukee,*	M. C.
Dodson, Truman Monroe,	*Berlin,*	G. S.
Donelly, Theo Elizabeth,	*Milwaukee,*	M. C.
Dougherty, James Francis,	*Lyndon Station,*	Eng.
Eggers, Harold Everett,	*Two Rivers,*	G. S.
English, Callista Angeline,	*Kenosha,*	A. C.
Erickson, Oscar Gustav,	*Madison,*	Eng.
Fehr, Margaret,	*St. Cloud, Minn.,*	Phil.
Filbey, Edward Joseph,	*Appleton,*	A. C.
Fish, Herbert Clay,	*Madison,*	C. H.
Fish, Irving Andrews,	*Madison,*	A. C.
Fleming, Lucinda Elizabeth,	*Madison,*	G. S. (Math.)
Flint, Joseph Turner,	*Menomonie,*	Eng.
Foelske, Henry Edward,	*National Home,*	C. H.
Foster, Wilbur Thomas,	*River Falls,*	C. H.
Francis, William Edgar Roy,	*McGregor, Ia.,*	A. C.
Frank, Hermann August,	*Waupun,*	Eng.
Friedman, Rufus Judah,	*Iron River,*	C. H. (Math.)
Froelich, Clara Garner,	*Milwaukee,*	Eng.
Fuller, Stuart Jamieson,	*Madison,*	M. C.
Gaffin, Charles Harold,	*Leaf River, Ill.,*	C. H.
Gates, Charles Baldwin,	*Milwaukee,*	Phil.
Gehrand, Gustav William,	*Madison,*	Phil.
Germond, Marie Blanche,	*Oshkosh,*	Phil.
Gesell, Arnold Lucius,	*Alma,*	Phil.
Gibbons, Robert Oliver,	*Cottage Grove,*	Eng. (Math.)
Gilbert, Newell Clark,	*De Kalb, Ill.,*	G. S.
Gillespie, Edwin Simpson,	*Madison,*	G. S.
Gilson, Grace Alice,	*Harvey, Ill.,*	C. H.
Goddard, Jane Mae,	*Freeport, Ill.,*	C. H.

Graber, John Francis,	*Appleton,*	Phil.
Gregory, Clarence William,	*West Depere,*	M. C.
Grimm, August,	*Two Rivers,*	Phil.
Gromann, Ralph Sasse,	*Madison,*	C. H.
Hagenah, William John,	*Madison,*	Eng.
Haight, William Harrison,	*Cambridge,*	Eng.
Hamilton, William George,	*Marinette,*	C. H.
Hammersley, Charles Edward,	*Madison,*	C. H.
Harvey, Isabel,	*Lake Mills,*	M. C.
Haugen, Constance,	*Madison,*	Phil.
Haumerson, Emil John,	*Ft. Atkinson,*	Eng.
Hein, Willard Henry,	*Ripon,*	Phil.
Hennessey, Denis Lawrence,	*Hudson,*	Phil.
Heuer, George Julius,	*Madison,*	G. S.
Heyward, Aaron,	*Madison,*	Phil.
Hockett, Homer C.,	*Madison,*	C. H.
Hollen, Richard Hamlin,	*Eau Claire,*	S. C.
Holty, Joseph Gerard,	*Newark, Ill.,*	G. S.
Hopkins, Andrew Winkle,	*Morrisonville,*	Eng.
Hubbard, Ira Odell,	*Westfield,*	Phil.
Hughes, Harriet Louise,	*Oshkosh,*	C. H.
Humphrey, May Martin,	*Bloomington,*	A. C.
Hunter, Elizabeth Joyce,	*Wauwatosa,*	A. C.
Jaeck, Emma Gertrude,	*Omro,*	M. C.
Jenkins, Mary Lucretia,	*Swaledale, Ia.,*	C. H.
Jenkins, Sara Davis,	*Ithaca, N. Y.,*	Phil.
John, Herbert Frank,	*Milwaukee,*	S. C.
Johnson, Evelyn Lena,	*Winona, Minn.,*	Eng.
Johnson, Harry C.,	*Madison,*	C. H.
Kasberg, Alexander,	*Madison,*	Eng.
King, Anna Belle,	*Madison,*	Eng.
Kircher, Henry William,	*Madison,*	Phil.
Kreutzer, Oscar William,	*Cedarburg,*	Eng.
Laube, Herbert David,	*Brodhead,*	C. H.
Lemke, Charles Fred,	*Wausau,*	A. C.
Lerum, Arne Christopher,	*Cottage Grove,*	Eng.
Libby, Lyman Arnquist,	*New Richmond,*	S. C.
Liljeqvist, Lawrence Andrew,	*Wausau,*	C. H.
Lusk, William Foster,	*River Falls,*	Phil.
Madison, Carl Theophilus,	*Grand Rapids,*	Eng.
Maguire, Beach Woodruff,	*Rockford, Ill.,*	Eng.

Marquette, William George,	*Watertown,*	G. S.
Marshall, Frances Belle,	*Madison,*	Eng.
Mathews, Joseph Howard,	*Auroraville,*	G. S.
Matteson, Gertrude Sarah,	*Davenport, Ia.,*	A. C.
McCrossen, James Woodward,	*Wausau,*	C. H.
McCulloch, Dorothy,	*Madison,*	G. S.
McMahon, Stephen John,	*Manitowoc,*	Phil.
McMillan, Mary Bell,	*Grand Rapids,*	Phil.
McNeil, Anne Holmquist,	*Madison,*	Phil.
McNown, Chester William,	*Mauston,*	Phil.
Middleton, Anna Dale,	*Oak Park, Ill.,*	G. S. (Math.)
Mihills, Guinevieve,	*Fond du Lac,*	M. C.
Milbradt, Herman Gustav,	*Edgar,*	M. C.
Miller, Grace Elizabeth,	*Janesville,*	M. C.
Minahan, Eben Roger,	*Green Bay,*	Eng.
Morrison, Bess Lorraine,	*Dixon, Ill.,*	Eng.
Murphy, John Vincent,	*Adell,*	S. C.
Nelson, Florence Eugenie Van Slyke,	*Madison,*	C.H.
Nicholas, Walter Alvin,	*Livingston,*	Phil.
Nichols, Maurice Barstow,	*West Superior,*	Phil.
Odell, Mabel,	*Des Moines, Ia.,*	M. C.
Oftelie, Ezra Thaddeus,	*Madison,*	S. C.
Osborne, Julia Sherlock,	*Madison,*	C. H.
Osborne, Patricia Mary,	*Madison,*	M. C.
Otjen, Henry Heames,	*Milwaukee,*	Eng.
Parks, Howell Albro-Gardiner,	*Oconomowoc,*	A. C.
Pauly, Hugo Albert,	*Milwaukee,*	G. S.
Pelton, Anna May,	*Madison,*	M. C.
Pelton, Jessie Mary,	*Madison,*	M. C.
Pelton, Jessie Myrtle,	*Madison,*	Eng. (Hist.)
Perham, George Addison,	*Racine,*	C. H.
Peterson, Alma Marie,	*Soldiers' Grove,*	Phil.
Petersen, Peter Verner,	*Marinette,*	S. C.
Pfund, Adolf,	*Madison,*	A. C.
Phipps, Stephen Carpenter,	*Hudson,*	A. C.
Pickford, Theo Beatrice,	*Madison,*	Eng. (Math.)
Pickard, Rawson Joseph,	*Chicago, Ill.,*	G. S.
Poage, George Coleman,	*La Crosse,*	C. H.
Post, Beulah Celecta,	*Dubuque, Ia.,*	M. C.
Pritchard, Grace Louvan,	*Manitowoc,*	M. C.
Pritchard, Mary Fellows,	*Manitowoc,*	M. C.

Pullen, Lloyd Winston,	*Milwaukee,*	C. H. (Pol. Sci.)
Putnam, Daphne Wilton,	*Waukesha,*	M. C.
Pyre, Amelia France,	*Madison,*	M. C.
Rahr, Louis Frederick,	*Kenosha,*	C. H.
Richards, Lillian Ethel,	*Lake Geneva,*	Eng.
Riedesel, Bertha,	*Battle Creek, Ia.,*	M. C.
Rindlaub, Julia Hill,	*Platteville,*	M. C.
Robertson, Wiliam Burt,	*Ft. Atkinson,*	Phil.
Roemer, Emma Marie,	*Madison,*	Eng. (Ger.)
Roethke, Adolph Herman,	*Chilton,*	Eng. (Pol. Sci.)
Ross, Samuel Crawford,	*Mineral Point,*	C. H.
Rumsey, Edith Arabel,	*Madison,*	C. H.
Runzler, William Theodore,	*Milwaukee,*	A. C.
Russell, Elinore Emilie,	*Superior,*	Phil.
Ruste, Mabel Beatrice,	*Charles City, Ia.,*	A. C.
Safford, Ruth Bogardus,	*Peebles,*	M. C.
Salter, Vera Belle,	*Unity,*	Eng.
Savage, May Lillian,	*Madison,*	A. C.
Schuette, Paul August,	*Manitowoc,*	C. H.
Schubert, Albert Henry,	*Menasha,*	Phil.
Schule, Paul Adolph,	*Chicago, Ill.,*	A. C.
Shaw, Lulu Pearl,	*Wauwatosa,*	A. C.
Showers, Albert Edward,	*Madison,*	Eng.
Skrivseth, Benedick Oliver,	*Russia, Minn.,*	Phil.
Slinde, Imelia Josephine,	*De Forest,*	Eng.
Smith, Adolph Belmont,	*Brooklyn,*	G. S.
Smith, Phebe Maud,	*Juda,*	Eng.
Smythe, Herman Augustine, Jr.,	*Madison,*	G. S.
Spaulding, Grace Pratt,	*Milton,*	A. C.
Sprecher, John Henry,	*Independence,*	Eng.
Stair, Henry C.,	*Brodhead,*	Phil.
Stevenson, Robert George,	*Marinette,*	Eng.
Stiles, Mary Estella,	*Cherokee, Ia.,*	Eng.
Stinson, Orin Lorenzo,	*Madison,*	A. C.
St. John, Janet Scoular,	*Waupun,*	Phil.
Stone, Charles Harry,	*Reedsburg,*	Eng.
Stoner, Mary Gertrude Hemenway,	*Madison,*	M. C.
Storm, Anna,	*Plainfield,*	Eng.
Telford, Mae Pearl,	*Mason City, Ia.,*	M. C.
Terry, Abbie Celina,	*Waukesha,*	Phil.
Thomas, Stephen Miles Waterbury,	*Mineral Point,*	Phil.

Thuerer, Edward Walter,	*Baraboo,*	Eng.
Tibbals, Charles Austin, Jr.,	*Marlborough, N. Y.,*	G. S.
Ticknor, Elizabeth Goffe,	Madison,	A. C.
Titus, Robert Hill,	*West Superior,*	C. H.
Townsend, Clyde Louis,	*Madison,*	A. C.
Turner, Edmon Francais Cecil,	*Mineral Point*	M. C.
Van Orden, Lucas Schuyler,	*Baraboo,*	C. H.
Washburn, Stuart Erdman,	*Racine,*	C. H.
Weber, Minna Elizabeth,	*Watertown,*	M. C.
Wegemann, Carrol Harvey,	*Lake Mills,*	G. S.
Wells, Josephine Adelaide,	*Portage,*	C. H.
Whitcomb, Georgiana Mary,	*Madison,*	C. H.
Wood, Norma Curtis,	*Madison,*	A. C.
Warbetz, Voyta,	*Kewaunee,*	Eng. (Math.)
Wright, Mignon,	*Madison,*	M. C.
Yule, Hasa La Maude,	*Kenosha,*	Phil.
Zinns, Roland,	*Milwaukee,*	A. C.
		—219

JUNIOR CLASS.

Abbott, Allen Cruxhombe,	*Oshkosh,*	S. C.
Adams, Elma Lucille,	*Milwaukee,*	G. S.
Andrews, John Bertram,	*South Wayne,*	C. H.
Ap Roberts, Elizabeth,	*River Falls,*	Phil.
Askew, Amelia Alice,	*Madison,*	M. C.
Augustine, Elizabeth Barbara,	*Racine,*	M. C.
Beatty, Carlotta McCutcheon,	*Madison,*	A. C.
Bergen, Paul,	*Richwood,*	Phil.
Bernard, Ransom Drips,	*Madison,*	G. S.
Beule, Ervin John,	*Fox Lake,*	G. S.
Blackman, Loren Dwight,	*Neenah,*	C. H.
Blake, James Bronson,	*Winona, Minn.,*	C. H.
Blake, John Tapley,	*Racine,*	A. C.
Bomersheim, John Baptist, Jr.,	*Milwaukee,*	S. C.
Bradley, Mabel Josephine,	*Madison,*	M. C.
Breslauer, Arthur,	*Milwaukee,*	A. C.
Bridgman, Benjamin William,	*Darlington,*	Phil.
Brown, Ralph Dexter,	*Rhinelander,*	C. H.
Buck, Ethelwyn Berenice,	*Platteville,*	Phil.
Buck, Solon Justus,	*Berlin,*	C. H.
Burdick, Lawrence Wylie,	*Albion,*	Phil.
Bush, William Paul,	*Sparta,*	M. C.

Carey, Katherine Lee,	*Bloomington,*	Phil.
Carrico, Fred Kilburn,	*Rockford, Ill.,*	Eng. (Pol. Sci.)
Carroll, William Peter,	*Wales, Mo.,*	M. C.
Case, Lucie Nell,	*Milwaukee,*	C. H.
Chynoweth, Herbert Edgar,	*Madison,*	S. C.
Coerper, Elsie Luella,	*Hartford,*	Eng.
Comstock, Bessie,	*Milwaukee,*	Phil.
Concklin, Esther Rachel,	*East Troy,*	M. C.
Congdon, Mirah,	*La Crosse,*	A. C.
Conry, Maud Evlynn,	*Madison,*	G. S.
Cook, Nettie May,	*Madison,*	G. S.
Cooper, Elva,	*Milwaukee,*	Eng. (Math.)
Cowell, William Albert,	*Kewaunee,*	Eng. (Pol. Sci.)
Cunneen, William Aloysius,	*Mazomanie,*	C. H.
Dahle, Isaac James,	*Mt. Horeb,*	S. C.
Derge, Herman Ferdinand,	*Eau Claire,*	G. S.
Derge, Julius Ferdinand,	*Eau Claire,*	S. C.
Dodge, Florence Adele,	*Windsor,*	A. C.
Donley, Julia Callista,	*Kenosha,*	Eng.
Du Four, Laura Edna,	*Racine,*	C. H.
Dunbar, Frank Winsor,	*Elkhorn,*	Phil.
Edwards, Ernest Albert,	*Ashland,*	S. C.
Egan, Mary Amelia,	*Madison,*	M. C.
Ellis, Ralph Burchard,	*Madison,*	M. C.
Etter, Alpharetta Nellie,	*Monroe,*	Eng.
Evans, Lillian Helen,	*Spring Green,*	Eng.
Evans, Magdalen,	*Madison,*	G. S.
Evans, Mary Margaret,	*Spring Green,*	Eng. (Math.)
Farr, Hermon Ashley,	*Newton,*	Phil.
Ferguson, Donald Nivison,	*Milwaukee,*	C. H.
Fox, Morris Fuller,	*Madison,*	S. C.
Fries, Scott Winters,	*Richland Center,*	C. H.
Gath, Minna Evangeline,	*Madison,*	A. C.
Gaylord, Maurice Almer,	*Moline, Ill.,*	C. H.
Giese, Charlotte Ilseley,	*Madison,*	G. S. (Math.)
Gillen, Marie Alice,	*Racine,*	Eng.
Gove, George Ross,	*Madison,*	A. C.
Grove, William Edward Henry,	*Madison,*	G. S.
Groves, Regina Eunice,	*Madison,*	Eng.
Hacker, Henry Christian,	*Wilson, Minn.,*	Phil.
Hagopian, Hovhan,	***Van, Asia Minor,***	**C. H.**

Halbach, Norma Catherine,	*Marinette,*	Eng. (Ger.)
Hale, Ben Severin,	*Waupaca,*	M. C.
Hale, Winifred Emma,	*Prospect,*	Phil.
Hall, Kathryn,	*Watertown, N. Y.,*	M. C.
Hall, Margaret Spencer,	*Madison,*	C. H.
Hamilton, Elmer William,	*Arena,*	S. C.
Harvey, Harriet Ann,	*Racine,*	C. H.
Haseltine, Winfred David,	*Mazomanie,*	C. H.
Hatch, Bernice Clara,	*Sturgeon Bay,*	Eng.
Hayden, John Gilbert,	*Milwaukee,*	C. H.
Headsten, Lilian Matilda,	*Escanaba, Mich.,*	M. C.
Hendrickson, Annie Louise,	*Madison,*	M. C.
Hendrickson, Norman,	*Madison,*	C. H.
Hinn, Albert George,	*Fennimore,*	S. C.
Hoffmann, Albert John,	*Brookfield,*	M. C.
Holbrook, Burke,	*Springfield, Mo.,*	S. C.
Howley, John Edward,	*Madison,*	Eng.
Hudson, Franham Allen,	*Madison,*	C. H.
Hunt, Fred Ralph,	*Sioux City, Ia.,*	A. C.
Hutton, James,	*Waukesha,*	C. H.
Inbusch, Fred Clarence,	*Milwaukee,*	C. H.
Jackman, Margaret Clarice,	*Janesville,*	M. C.
Jackson, Marshall Hubbard,	*Oak Park, Ill.,*	S. C.
James, Frances Sophia Courtenay,	*Eau Claire,*	M. C.
James, James Charles,	*Aurora, Ill.,*	C. H.
Jebens, Henry Hans,	*Davenport, Ia.,*	C. H.
Johnston, John Thor,	*Milwaukee,*	A. C.
Juneau, William Joseph,	*West Allis,*	Eng.
Keating, Grace Maye,	*Elgin, Ill.,*	Eng.
Kelling, Max John,	*Milwaukee,*	C. H.
Kelsey, William Thomas,	*Baraboo,*	C. H.
Kemmerer, George Irving,	*Clinton Junction,*	G. S.
Kinne, Blanche Marie,	*Elkhorn,*	M. C.
Kuhns, Hattie,	*Madison,*	A. C.
Kuzuhara, Ihei,	*Igori, Japan,*	S. C.
La Follette, Fola,	*Madison,*	C. H.
Landt, Ernest Wilber,	*Milwaukee,*	S. C.
Lauderdale, Clara Mary,	*Elkhorn,*	Eng.
Law, David Sydney,	*La Crosse,*	C. H.
Liver, John Irving,	*Hartford,*	Eng.
Lord, John Solon,	*Dixon, Ill.,*	Eng. (Pol. Sci.)

Love, Mattie,	*Waukesha,*	Phil.
Lyman, Charles Adelbert,	*Sun Prairie,*	C. H.
Manchester, Frederick Alexander,	*Richland Center,*	Eng.
Marquette, George John,	*Watertown,*	G. S.
Marquisse, Victor Grant,	*Altoona,*	M. C.
Mashek, Anna Magdalene,	*La Crosse,*	C. H.
Mason, Harriet,	*Fond du Lac,*	G. S.
Mattke, Edward Gustav,	*Baraboo,*	G. S. (Chem.)
Mattson, Gustaf Adolph,	*Lund,*	Phil.
McComb, Earl Vinten,	*Brillion,*	G. S.
McCormick, Bartie Eldred,	*Waterloo,*	G. S.
McDonald, Anna Eulalia,	*Baraboo,*	C. H.
McEldowney, William Franklin,	*Chicago Heights, Ill.,*	C. H.
Meisnest, Charles William,	*Branch,*	S. C.
Merrick, Jessie Bee,	*Madison,*	Phil.
Milbrath, David Gallus,	*Whitefish Bay,*	G. S.
Miller, Nelle,	*Monroe,*	Eng. (Math.)
Miller, Marie Grace,	*Madison,*	C. H.
Moe, Maurice Winter,	*Milwaukee,*	M. C.
Moffatt, Florence Susannah,	*Davenport, Ia.,*	C. H.
Moores, Helen Hazen,	*Milwaukee,*	Eng. (Math.)
Mortenson, Thorina Olena,	*Racine,*	Eng.
Moulton, Lewis Henry,	*Oshkosh,*	Phil.
Mutchler, Kate,	*Madison,*	Eng.
Nelson, Martin,	*Viroqua,*	Phil.
Nelson, Mary Lillian,	*North La Crosse,*	M. C.
Neuhaus, Alma Josephine,	*Burlington,*	Phil.
Nichols, Roy Theodore,	*River Falls,*	Phil.
Nichols, William Crane,	*Fargo, N. D.,*	G. S.
Ogilvie, Lottie May,	*Madison,*	Eng.
Olmstead, Sophia Helen,	*Boone, Ia.,*	M. C.
Osen, Clyde Augustus,	*Mendota,*	Phil.
Osthelder, Edwin Clark,	*Sheboygan Falls,*	S. C
Parks, Lewis Woodworth,	*Watertown,*	S. C.
Patten, Elizabeth May,	*De Kalb, Ill.,*	Phil.
Paust, Benjamin Alexander,	*Milwaukee,*	A. C.
Pease, Peter Laurence,	*Cumberland,*	Phil.
Pengra, Delia Idell,	*Madison,*	Eng.
Pfeifer, Fred Julius,	*Plymouth,*	G. S.
Phillips, Ruth Mary,	*Madison,*	M. C.
Pomeroy, Harry Ralph,	*Edgerton,*	C. H.
Pratt, Mabel D.,	*Milwaukee,*	Phil.

Redfield, Ethel Ione,	*Racine,*	M. C.
Rice, Claudia Bee,	*Davenport, Ia.,*	M. C.
Richardson, Clarence Lemuel,	*Chippewa Falls,*	Eng.
Rider, Melinda Catherine,	*Madison,*	C. H.
Robinson, Amy Anna,	*Wyanet, Ill.,*	Eng. (Ger.)
Robinson, Mae Josephine,	*Sparta,*	M. C.
Royce, Asa Marshfield,	*Oconto,*	Phil.
Sands, Mary Christena,	*Milwaukee,*	G. S.
Sardeson, Glenn Romaine,	*Argyle,*	Eng. (Pol. Sci.)
Sargent, Frank Byron,	*Seymour,*	Eng.
Saucerman, Charles Harold,	*Winslow, Ill.,*	S. C.
Schedler, Paul Arthur,	*Oconto,*	S. C.
Schofield, Harvey A.,	*Augusta,*	Phil.
Schrieber, William Earle,	*Madison,*	G. S.
Sharp, Robert Nicholson,	*Chicago, Ill.,*	S. C.
Shattuck, Georgia Mabel,	*Medford,*	Eng.
Shields, Harry Elliott,	*Madison,*	S. C.
Shockley, Dale Curry,	*Lamont,*	G. S.
Stark, Henry Walter,	*Milwaukee,*	C. H.
Stemple, Carolyn,	*Madison,*	M. C.
Stephenson, Eugene James,	*Albany,*	S. C.
Stevens, Genevieve,	*Boone, Ia.,*	C. H.
Stevens, Mary Holmes,	*Rochester, N. Y.,*	A. C.
Stewart, Mitchell Charles,	*Wausau,*	Eng.
Stockman, Ruth Chapin,	*Mason City, Ia.,*	C. H.
Streeter, Adah Otilie,	*La Crosse,*	M. C.
Sutherland, Sarah Sayre,	*Janesville,*	M. C.
Tanner, Kenneth Boyd,	*So. Kaukauna,*	G. S.
Taylor, Charles Arthur,	*Barron,*	G. S.
Taylor, George Edwards,	*La Crosse,*	S. C.
Thiede, Arthur Emil,	*Columbus,*	S. C.
Thom, Walter Henry,	*Madison,*	S. C.
Tompkins, Lillian Rosalie,	*Madison,*	C. H.
Tompkins, Pearl Esther,	*Madison,*	C. H.
Trump, Rodger Murphy,	*Milwaukee,*	C. H.
Turner, Frederick James,	*Waupun,*	C. H.
Turner, Lura Jane,	*Columbus,*	M. C.
Urner, Charles Anderson,	*Elizabeth, N. Y.,*	G. S.
Usher, Robert James,	*So. Wayne,*	S. C.
Warner, Julius Herbert,	*Windsor,*	C. H.
Welsh, Ada Mary,	*Madison,*	A. C.

Werder, Hudson Bernard,	*Charles City, Ia.,*	Eng.
Wheelwright, Orville William,	*Belleville,*	G. S.
Whittier, Martha Taylor,	*Madison,*	A. C.
Winslow, Horatio Gates,	*Madison,*	M. C.
Wooledge, Gaius Sibley,	*Antigo,*	Eng. (Pol. Sci.)
Works, George Alan,	*Augusta,*	Phil.
Worthing, Archie Garfield,	*Oakfield,*	G. S.
Zinn, Edna Bertha,	*East Troy,*	M. C.
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SOPHOMORE CLASS.

Abaly, Elizabeth,	*Madison,*	M. C.
Abbott, Chauncey, Jr.,	*Schuyler, Neb.,*	C. H.
Allen, Iva Clair,	*Madison,*	Eng.
Allen, Ruth Florence,	*Sturgeon Bay,*	G. S.
Annis, David Wheeler,	*Madison,*	S. C.
Arvold, Alfred Gilmeiden,	*Whitewater,*	Eng.
Bailey, Ralph Williams,	*Waupaca,*	S. C.
Baker, Frances May,	*Madison,*	Eng.
Baker, John Franklin,	*Alma Center,*	Eng.
Barber, George Stanley,	*Waukesha,*	G. S.
Barker, Raymond,	*Racine,*	M. C.
Barry, John Sumner,	*Phillips,*	C. H.
Bartelt, Arthur Herman,	*Ft. Atkinson,*	Eng.
Bartlett, Edwin Ball,	*Milwaukee,*	C. H.
Beaver, Grace May,	*Baraboo,*	C. H.
Bernard, Anna Katherine,	*Galena, Ill.,*	C. H.
Binnie, Helen Archibald,	*Poynette,*	Eng.
Bird, Wayne Doty,	*Madison,*	S. C.
Boaler, Richard Allen,	*Green Bay,*	S. C.
Bogue, David,	*Poynette,*	Eng.
Bolte, Rudolph Emil,	*Davenport, Ia.,*	C. H.
Brahany, Kathryn Isabella,	*Madison,*	C. H.
Braley, Arche Berton,	*Madison,*	S. C.
Broenniman, Leonard Edwin,	*Watertown,*	C. H.
Brush, Jesse Platt,	*Stewartville, Minn.,*	S. C.
Carey, John Greer,	*Bloomington,*	S. C.
Chinnock, Mabel Amy,	*River Falls,*	C. H.
Christensen, Vera Marie,	*Baldwin,*	Eng.
Clark, Arthur John,	*Janesville,*	G. S.
Clarke, Bertha,	*Minonk, Ill.,*	M. C.
Cline, Genevieve Elida,	*Hudson,*	A. C.

Clifford, John Adams,	*Madison,*	S. C.
Coerper, Saidee Belle,	*Hartford,*	G. S.
Coffin, Margaret Ellen,	*Eau Claire,*	M. C.
Cole, Edgar George,	*Burnett Junction,*	S. C.
Cole, Julia Ann,	*Milwaukee,*	M. C.
Confer, Francis Marion,	*Madison,*	G. S.
Conlin, Frank Matthew,	*Madison,*	G. S.
Cook, Eudora Idalia,	*Madison,*	M. C.
Cook, Hazel Margaret,	*Chetek,*	M. C.
Cook, Henry Allen,	*Madison,*	A. C.
Cook, Leo Marshall,	*Madison,*	S. C.
Coonen, John Edgar,	*Appleton,*	Eng.
Cooper, Cornelia Lida,	*Lake Mills,*	Eng.
Corlett, Ralph,	*Harvard, Ill.,*	G. S.
Cowles, Herbert Van,	*Madison,*	Eng.
Creutz, Lester Raymond,	*Moline, Ill.,*	C. H.
Crocker, Frank Albert,	*Neillsville,*	S. C.
Cross, Ira Brown,	*Madison,*	C. H.
Culbertson, Berniece,	*Augusta,*	Eng.
Daniells, John Eckley,	*Madison,*	M. C.
Darling, Walter Gregory,	*Milwaukee,*	G. S.
Davis, John Archibald,	*Racine,*	G. S.
Drought, Orville Hay,	*Waukesha,*	M. C.
Dudgeon, Richard Cone,	*Madison,*	S. C.
Elliott, Isaac,	*Menomonie,*	G. S.
Ellis, Grace Victoria,	*Bristol,*	Eng.
Epstein, Charlotte Wilmina,	*Portage,*	M. C.
Faust, Howard Harry,	*Merrill,*	S. C.
Feldkamp, Bernard Eilart,	*Danville, Ill.,*	S. C.
Fisher, Arthur Oscar,	*Baraboo,*	G. S.
Foley, Elizabeth Viola,	*Wauwatosa,*	C. H.
Frey, Philip George,	*Hartford,*	Eng.
Fruit, Clarence Henry,	*La Crosse,*	C. H.
Fryette, Leora Blanche,	*Madison,*	M. C.
Fuller, Litta Maurie,	*Plymouth,*	M. C.
Fulton, David Langdon,	*Hudson,*	Eng.
Geisse, Harold Llewwllyn,	*Chilton,*	Eng.
Gilkey, George Leland,	*Oshkosh,*	S. C.
Gratiot, Charles Gross,	*Shullsburg,*	C. H.
Green, Alice Evangeline,	*Fond du Lac,*	A. C.
Green, Edward Emerson,	*Basco,*	G. S.

Griggs, Victor Rockwell,	*Madison,*	C. H.
Grinde, Hildah Christine,	*Madison,*	Eng.
Griswold, Willard Seward,	*Waukesha,*	C. H.
Haertel, Lillian Emile,	*Madison,*	G. S.
Hannahs, Charlotte Eva,	*Kenosha,*	C. H.
Hansen, Dagmar,	*Racine,*	M. C.
Harrison, Edna Lucretia,	*Madison,*	G. S.
Hart, Helen Alden,	*Western Springs, Ill.,*	C. H.
Harvey, Katherine Mary,	*Madison,*	M. C.
Hayes, Joseph Dennis,	*Janesville,*	S. C.
Hean, Clarence Scott,	*Madison,*	Eng.
Heisinger, Charles Richard,	*Oshkosh,*	S. C.
Helmholz, Anna,	*Madison,*	Eng.
Herdegen, Robert Townsend,	*Milwaukee,*	M. C.
Hibbard, Darrell Osmer,	*Racine,*	S. C.
Hinrichs, Frank Hall,	*Davenport, Ia.,*	G. S.
Holden, Isabell Augusta,	*Madison,*	G. S.
Homberger, Alfred Wilhelm,	*Sauk City,*	G. S.
Houghton, Howard Warren,	*Madison,*	S. C.
Huebner, Grover Gerhard,	*Manitowoc,*	C. H.
Huggins, Carrie Belle Louise,	*Madison,*	Eng.
Jahr, Marvin Edward,	*Neillsville,*	Eng.
James, Albert Earl,	*Madison,*	M. C.
Jamieson, Gerald William,	*Shullsburg,*	C. H.
Johnson, Edith,	*Kokomo, Ind.,*	Eng.
Johnson, Martha Frances,	*Kokomo, Ind.,*	Eng.
Johnson, Una Lone,	*Madison,*	Eng.
Jones, Gwendolyn Gaynor,	*Madison,*	Eng.
Jordan, Edward Stanlaw,	*Merrill,*	C. H.
Katz, Frank James,	*Milwaukee,*	G. S.
Kennedy, James Eugene,	*Madison,*	S. C.
Ketchum, Alva,	*Madison,*	S. C.
Koch, Louis George,	*Milwaukee,*	S. C.
Klahr, Florence Marie,	*Horicon,*	C. H.
Krause, Anne Adeline,	*Sauk City,*	Eng.
Kunerth, William,	*La Crosse,*	G. S.
Larsen, Karen,	*Decorah, Ia.,*	C. H.
Lea, Clara Alice,	*Madison,*	M. C.
Leonard, Henry Kendall,	*Bruce,*	G. S.
Lindsay, Herbert Frank,	*Milwaukee,*	M. C.
Lorch, Augusta Christine,	*Madison,*	M. C.

Martin, Grace,	*Waupun,*	M. C.
Maurer, Eugene Henry,	*Medford,*	S. C.
McCulloch, Sadie,	*Madison,*	A. C.
McKinney, Jessie Elizabeth,	*Racine,*	M. C.
McWethy, Augustus Somarindyck,	*Aurora, Ill.,*	S. C.
Middleton, Evelyn Eliza,	*Oak Park, Ill.,*	M. C.
Mills, Clifford Wilde,	*Denver, Colo.,*	S. C.
Moffatt, John James,	*Davenport, Ia.,*	C. H.
Mueller, Walter,	*La Crosse,*	S. C.
Moore, Ethel Edna,	*Merrillan,*	Eng.
Moorehouse, Amy Louisa,	*Lake Geneva,*	Eng.
Morley, Ebor Lyth,	*Chicago, Ill.,*	C. H.
Morse, Jessie Marietta,	*Madison,*	Eng.
Morse, Nora Troy,	*Nashua, Ia.,*	C. H.
Neckerman, Reuben Julius,	*Madison,*	S. C.
Neilson, George Whittier,	*Milwaukee,*	G. S.
Noble, George Curtis,	*Eau Claire,*	G. S.
Norsman, Cora Miriam,	*Madison,*	M. C.
Olbrich, Emil,	*Lawrence, Ill.,*	Eng.
Palen, Edgar Newton,	*Kingston, N. Y.,*	S. C.
Parker, Madge Mary,	*Mason City, Ia.,*	M. C.
Parsons, Forest Lee,	*Berlin,*	C. H.
Patterson, Elizabeth,	*Baraboo,*	Eng.
Pedley, Ralph,	*Etna,*	C. H.
Pengra, Marshall Hylon,	*Madison,*	Eng.
Pfund, Carl Frederick,	*Madison,*	C. H.
Phelan, Ruth Lincoln,	*Dickinson, N. D.,*	M. C.
Pierce, Helen Meroe,	*Madison,*	Eng.
Pietzsch, Harriet Shumway,	*Baraboo,*	M. C.
Playter, James Andrew,	*Eau Claire,*	S. C.
Purcell, John Daniel,	*Waterloo,*	Eng.
Quan, Arthur Winfield,	*Madison,*	Eng.
Rathjen, Edwin Frederick,	*Milwaukee,*	G. S.
Reed, Lutie Northey,	*Elkhorn,*	Eng.
Reineking, Walter Clarence,	*Sheboygan,*	G. S.
Reiss, Wallace,	*Milwaukee,*	A. C.
Rhoades, Ellen May,	*Fond du Lac,*	Eng.
Riess, Minnie Margaret,	*Sheboygan,*	Eng.
Rogers, Faye Valeria,	*Clinton,*	Eng.
Runge, Lulu Lillian,	*Madison,*	Eng. (Math.)
Salter, Richard Grover,	*Colby,*	Eng.

Schlytter, Henry Richard,	*Wittenberg,*	S. C.
Schmidt, Richard August,	*West Depere,*	C. H.
Schreiber, Cecil Everett,	*Madison,*	C. H.
Schriber, Rufus Kellogg,	*Oshkosh,*	S. C.
Schuette, Walter William,	*Manitowoc,*	S. C.
Schwartz, Ray Roland,	*Troy Center,*	G. S.
Scott, Marion Julia,	*Poynette,*	Eng.
Seaman, Ray Louis,	*Elgin, Ill.,*	S. C.
Seidenglanz, Emil Telesfore,	*Kewaunee,*	S. C.
Sell, Martha Erbach,	*New Holstein,*	C. H.
Shattuck, Fredrica Van Tries,	*Medford,*	C. H.
Shea, Eugenie Elinor,	*Ashland,*	M. C.
Shunk, Oral Jessie,	*Davenport, Ia.,*	A. C.
Sprague, Rena Smith,	*Madison,*	M. C.
Steinfort, Meta Mary,	*Watertown,*	M. C.
Stephens, Jean Murray,	*Madison,*	Eng.
Stevens, Mabel Clare,	*Madison,*	M. C.
Stiles, Nestor Luverne,	*Cherokee, Ia.,*	C. H.
Stott, Florence Daisy,	*Winona, Minn.,*	Eng.
Strehlow, Ida Elizabeth,	*Watertown,*	M. C.
Strong, Ethel May,	*Aurora, Ill.,*	M. C.
Swenson, Mary Waddington,	*Madison,*	G. S.
Tarrell, Lucius Ambrose,	*Darlington,*	C. H.
Taylor, Lillian Elizabeth,	*Madison,*	Eng.
Tenner, Otto Frank Charles,	*Green Bay,*	S. C.
Thompson, David Orrin,	*East Troy,*	G. S.
Truckenbrodt, Lina,	*Sauk City, Mo.,*	Eng.
True, Eunice Miriam,	*Baraboo,*	M. C.
Turner, Louis Howard,	*Mondovi,*	S. C.
Urquhart, Marion Estella,	*Medford,*	M. C.
Vea, Elleda,	*Stoughton,*	C. H.
Venus, Helen Marie,	*Shawano,*	A. C.
Wagner, Rose May,	*Menasha,*	M. C.
Waite, Dawn,	*Belvidere, Ill.,*	G. S.
Walsh, Agnes Louise,	*Milwaukee,*	A. C.
Wells, Grace,	*Aurora, Ill.,*	M. C.
Welton, Chauncey Rex,	*Madison,*	C. H.
Weniger, Willibald,	*Milwaukee,*	G. S.
Wheelock, Harry Ellsworth,	*South Bend, Ind.,*	S. C.
White, Gerald Mason,	*Elgin, Ill.,*	S. C.
Wichmann, Hugo John,	*New Holstein,*	G. S.

Williams, Everett Lyle,	*Sparta,*	S. C.
Wilson, Leta May,	*Boscobel,*	M. C.
Woock, Grace Genevieve,	*Baraboo,*	M. C.
Worthy, Effie Bernice,	*Madison,*	M. C.
Wright, Annie Corning,	*Ironwood, Mich.,*	Eng.
Wright, Oscar Woodhouse,	*Lancaster,*	S. C.
Young, Edwin George,	*Beaver Dam,*	S. C.
Young, Gertrude Stickney,	*Plankinton, S. D.,*	C. H.

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FRESHMAN CLASS.

Adams, Bessie Eliza,	*Madison,*	Eng.
Allen, Henry Coburn,	*Indianapolis, Ind.,*	Eng.
Allen, Josephine Holcomb,	*Lake Geneva,*	M. C.
Ames, Ada Dell,	*Eau Galle,*	M. C.
Amundson, Emmet Julius,	*Cambridge,*	Eng.
Anderson, Louis Martin,	*Mt. Horeb,*	S. C.
Apple, Harry Aubrey,	*Milwaukee,*	C. H.
Arnold, Marshall,	*Peotone, Ill.,*	S. C.
Atwood, Walter Myron,	*Madison,*	Eng.
Baas, Alexius Henry,	*Madison,*	Eng.
Bagley, Zillah Julia,	*Madison,*	M. C.
Baker, Eva Jane,	*Mazomanie,*	M. C.
Baker, Sydney John,	*Osseo,*	Eng.
Banning, Bernice Thornton,	*Newport, R. I.,*	A. C.
Barker, Charles Pels,	*Chippewa Falls,*	G. S.
Barrett, Wiliam Richard,	*Merrill,*	S. C.
Beebe, Mathew Ross,	*Wausau,*	Eng.
Berdoll, Albert Ambrose,	*Columbus,*	S. C.
Berge, Matthew Garland,	*Eau Claire,*	S. C.
Best, Louis Engelhardt,	*Milwaukee,*	C. H.
Binnie, Nora Isabelle,	*Poynette,*	Eng.
Birge, Anna Grant,	*Madison,*	M. C.
Bishop, Charles Clyde,	*Dodgeville,*	G. S.
Bissell, Cora Ethel,	*Madison,*	Eng.
Blake, Jesse William,	*Evansville,*	A. C.
Blanchard, George Washington,	*Colby,*	Eng.
Bostedo, Alfred Gardner,	*River Forest, Ill.,*	G. S.
Brey, Peter Francis,	*Algoma,*	G. S.
Bridgman, Louis William,	*Madison,*	Eng.
Brindley, William Arthur,	*Boscobel,*	C. H.
Burnham, Marguerite Eleanor,	*Evansville,*	A. C.

Campbell, Robert,	*Gurnee, Ill.,*	C. H.
Canfield, Herman,	*Sparta,*	C. H.
Carpenter, Frank Whitney,	*Evanston, Ill.,*	S. C.
Cary, Lucian Herbert,	*Delavan,*	A. C.
Case, Florence Dombey,	*West Allis,*	G. S.
Cass, Lulu Edith,	*Madison,*	Eng.
Caswell, Zida Eliza,	*Ft. Atkinson,*	M. C.
Chadwick, Howard William,	*Monroe,*	C. H.
Churchill, Charles Lloyd,	*Waupaca,*	Eng.
Clarke, Edith Zilpha,	*Minonk, Ill.,*	M. C.
Clarke, Edna Sylvia,	*Minonk, Ill.,*	M. C.
Combacker, Leon Clinton,	*Osceola,*	C. H.
Conway, Thomas,	*Elroy,*	S. C.
Collie, Ralph Waldo,	*Merrill,*	S. C.
Cooney, Ellyn Kelter,	*Chicago, Ill.,*	A. C.
Corse, Ellen Jessie,	*Racine,*	M. C.
Crissey, Merrill Henry,	*Janesville,*	S. C.
Crosse, Edith Rowena,	*Sun Prairie,*	Eng.
Cunningham, Isabel Margaret,	*Chippewa Falls,*	M. C.
Curtiss, Mildred Harriet,	*Madison,*	M. C.
Dahl, Harry Julius,	*Westby,*	S. C.
Darling, Earl Harvey,	*Madison,*	G. S.
Davis, Bertha Eleanor,	*Sun Prairie,*	Eng.
Dean, Albert Briggs,	*Madison,*	S. C.
Desparois, Guy Bernard,	*Sioux City, Ia.,*	C. H.
Distelhorst, Walter Louis William,	*Dorchester,*	Eng.
Dodge, Charles Wilson,	*Windsor,*	C. H.
Dodge, Mary Louise,	*Windsor,*	M. C.
Donovan, Leo,	*Waupun,*	G. S.
Doyle, William Thomas,	*Fennimore,*	S. C.
Draves, Minnie Theresa,	*Milwaukee,*	M. C.
Dunham, Lettie Withers,	*Eau Claire,*	Eng.
Dunlap, Robert Bancroft,	*Waukesha,*	G. S.
Dunwiddie, Stanley Gray,	*Janesville,*	A. C.
Durst, May Louise,	*Monroe,*	M. C.
Eger, Trevor William,	*Rensselaer, Ind.,*	S. C.
Ellwood, Charles Davidson,	*Madison,*	S. C.
Ely, Richard Sterling,	*Madison,*	A. C.
Emeis, Hertha Kathryn,	*Davenport, Ia.,*	M. C.
Emerson, Frank Gilbert,	*Chippewa Falls,*	S. C.
Erickson, Joseph Samuel,	*Rice Lake,*	S. C.

Evans, Alice Esther,	*Spring Green,*	Eng.
Everhard, Frank Taggart,	*Volga, S. D.,*	G. S.
Evjue, William Theodore,	*Merrill,*	S. C.
Falconer, Ernest Henry,	*Medford,*	G. S.
Falk, Rolf Orlando,	*Stoughton,*	G. S.
Feidler, Ernest William,	*West Superior,*	S. C.
Fessler, Edward John,	*Sun Prairie,*	S. C.
Field, Carl Alfred,	*Madison,*	S. C.
Findlay, Albion Roy,	*Madison,*	S. C.
Fisher, Eunice Estella,	*Paw Paw, Ill.,*	Eng.
Fitch, Joseph Porter,	*Oshkosh,*	S. C.
French, William Elmer,	*Ashland,*	C. H.
Foster, Jesse Raymond,	*Shullsburg,*	Eng.
Gandolfo, Mary,	*Dubuque, Ia.,*	G. S.
Gapen, Mildred,	*Madison,*	M. C.
Garnett, Cyrus Logan,	*Chicago, Ill.,*	Eng.
Gilpatrick, Samuel Irving,	*Milwaukee,*	G. S.
Gipe, James Coleman,	*Indianapolis, Ind.,*	Eng.
Glenz, Emma Louise,	*Madison,*	G. S.
Glynn, Ralph,	*Green Bay,*	Eng.
Goodrich, Frank Joseph,	*Minonk, Ill.,*	M. C.
Gordon, Harry Ennor,	*Waupaca,*	S. C.
Gordon, Mabel Jean,	*Waupaca,*	C. H.
Grant, Goldie Kate,	*Milwaukee,*	A. C.
Grierson, William Arthur,	*Morrison, Ill.,*	C. H.
Griffiths, Adelaide Elfride,	*Madison,*	M. C.
Ground, Holland Todd,	*Superior,*	G. S.
Hammersley, Ellen,	*Madison,*	Eng.
Hannan, George Francis,	*Milwaukee,*	C. H.
Harvey, Elizabeth Katherine,	*Racine,*	M. C.
Heinemann, Fred Voelchert,	*Wausau,*	G. S.
Herrick, Lucretia Mae,	*Ripon,*	C. H.
Hetzel, Ralph Dorn,	*Merrill,*	C. H.
Hickisch, Tessie Frances,	*La Crosse,*	M. C.
Hodgson, Harry Harrison,	*Des Moines, Ia.,*	S. C.
Hoefs, Marcus Franklin,	*Green Bay,*	S. C.
Hoffmann, Virginia Julia,	*Watertown,*	M. C.
Holcomb, Fred Maurice,	*Brodhead,*	C. H.
Holmes, Emily Evelyn,	*Baldwin,*	Eng.
Holmes, Frederick Lionel,	*Waukau,*	Eng.
Houghton, Grace Adams,	*West Salem,*	M. C.

Houghton, Hiram Cole, Jr.,	*Red Oak, Ia.,*	S. C.
Houghton, Jonathan Clark,	*Red Oak, Ia.,*	S. C.
Howard, Emmett Budlong,	*Marshalltown, Ia.,*	Eng.
Howe, Helen May,	*Ripon,*	M. C.
Hueffner, Martin Matthew,	*Racine,*	C. H.
Hughes, Arthur John,	*Milwaukee,*	C. H.
Hunter, Berenice Drew,	*Ft. Atkinson,*	M. C.
Hunter, Gertrude Hazel,	*Racine,*	C. H.
Ingalls, Edna Jannet,	*Oak Park, Ill.,*	A. C.
Johnson, Floyd Everett,	*Thornton, Ia.,*	S. C.
Johnson, Francis Ellis,	*Des Moines, Ia.,*	G. S.
Johnson, Jessie Vera,	*Eau Claire,*	C. H.
Jolivette, Hally Delilia Mary,	*La Crosse,*	G. S.
Jones, Gad,	*Springwater,*	C. H.
Kadish, Victor Hugo,	*Milwaukee,*	G. S.
Kessenich, Frank, Jr.,	*Madison,*	S. C.
Ketchpaw, Erma Louise,	*Madison,*	M. C.
Ketchpaw, Maude Luella,	*Madison,*	Eng.
Kimball, Euretta Mary,	*Janesville,*	M. C.
King, Clarence Baker,	*Madison,*	G. S.
Kinsey, Zebulon Bradley,	*Milwaukee,*	S. C.
Kisling, Arthur Charles,	*Milwaukee,*	A. C.
Knoblock, Milton James,	*Racine,*	C. H.
Knowlton, Philip Arnold,	*Madison,*	A. C.
Knudson, Agnes Caroline,	*Madison,*	M. C.
Koch, Edna Mae,	*Fairdale, Ill.,*	Eng.
Krape, William Garman,	*Freeport, Ill.,*	A. C.
Kremer, Paul Henry,	*Milwaukee,*	S. C.
Kuehmstead, Arthur Odin,	*Appleton,*	S. C.
Kuhlmann, Charles Byron,	*Wausau,*	Eng.
Kunz, Florian Baldwin,	*Mayville,*	S. C.
Kussell, Irma Lizette,	*Watertown,*	C. H.
Lackner, Florence Helen,	*Aurora, Ill.,*	M. C.
Lamfrom, Leon Benedict,	*Milwaukee,*	C. H.
Latshaw, Stanley Ridell,	*Wausau,*	S. C.
Lehman, William Van Vechten,	*Neosha,*	S. C.
Leinberger, George Philips,	*Fillmore,*	Eng.
Lewis, Evariste Martel,	*Plantsville, Conn.,*	S. C.
Lewis, Gordon Morse,	*Highland,*	S. C.
Lewis, Rollin Church,	*Janesville,*	S. C.
Lindermann, Albert Louis,	*Milwaukee,*	S. C.

Loeb, Max,	*Appleton,*	C. H.
Loranger, Madge Winifred,	*Ashland,*	Eng.
Ludlow, Hattie,	*Monroe,*	M. C.
Lyons, Emmett Gregory,	*Madison,*	S. C.
Mapel, John Wallace,	*Milwaukee,*	C. H.
Marsh, Charles Drennen,	*Evanston,*	S. C.
Mason, Ora Lottie,	*Sharon,*	M. C.
McDonough, Violette Margaret,	*Eau Claire,*	Eng.
McConochie, George Stewart,	*Cambria,*	Eng.
McCormick, Edith Traftan,	*Merrillan,*	C. H.
McKay, Sara Roxey,	*Madison,*	Eng.
McMahon, Edward Michael,	*Manitowoc,*	Eng.
McNally, Walter Harry,	*Cedar Falls, Ia.,*	S. C.
Merrill, Louise,	*Janesville,*	C. H.
Metcalf, Ethel Martha,	*Glen Haven,*	C. H.
Meyer, Ardelia Barbara,	*Prairie du Sac,*	Eng.
Miller, Adelaide,	*Chippewa Falls,*	C. H.
Minch, Katharine Salome,	*Madison,*	G. S.
Montgomery, Mary M.,	*Charleston, Ill.,*	Eng.
Moore, Orpha Jane,	*Marinette,*	Eng.
Mowry, Don Ensminger,	*Milwaukee,*	C. H.
Mulcahy, Max John,	*Madison,*	G. S.
Mulick, Marion Gray,	*Watertown,*	Eng.
Mullen, Leon Theron,	*Waupun,*	G. S.
Mullenbach, Ortille,	*Marshfield,*	A. C.
Munroe, Maude Manvell,	*Baraboo,*	C. H.
Munson, Barbara Merrielle,	*Viroqua,*	M. C.
Nadler, John Fred,	*Verona,*	S. C.
Nelson, Alice Mary,	*Madison,*	A. C.
Nelson, Charles Edward,	*West Superior,*	S. C.
Neprud, Martha,	*Westby,*	Eng.
Newman, Ross B.,	*Juda,*	Eng.
Ochsner, Washington Henry,	*Prairie du Sac,*	G. S.
Olmstead, Lewis William,	*Boone, Ia.,*	S. C.
Olsen, Laura Marie,	*Eau Claire,*	M. C.
Ott, Edwin,	*Oak Park, Ill.,*	C. H.
Parker, Ethel,	*Fennimore,*	Eng.
Parker, Marie,	*Fennimore,*	Eng.
Patten, Lee Francis Corbley,	*New Richmond,*	Eng.
Patterson, Anna Louisa,	*North Freedom,*	Eng.
Patterson, Walter Lafayette,	*Baraboo,*	C. H.

Peckham, George Williams, Jr.,	*Milwaukee,*	G. S.
Penhallegon, Edwin Gray,	*Mineral Point,*	G. S.
Pineo, Eleanor Kerver,	*Duluth, Minn.,*	Eng.
Poole, Dewitt Clinton, Jr.,	*Madison,*	A. C.
Porter, Lloyd Wardall,	*Evansville,*	C. H.
Porterfield, Jennie Mac,	*Marinette,*	C. H.
Potter, Herman Monroe,	*Madison,*	S. C.
Potter, Paul David,	*Madison,*	G. S.
Prien, Verona Marie,	*Rockford, Ill.,*	Eng.
Randall, Darius Scofield,	*West Bay City, Mich.,*	G. S.
Ravn, Agnes,	*Merrill,*	M. C.
Ravn Bjarne,	*Merrill,*	G. S.
Ray, George Rankin,	*Waukesha,*	A. C.
Raymond, Lela Maude,	*Sharon,*	M. C.
Richards, Clara Alida,	*Madison,*	M. C.
Richter, Arthur William,	*Milwaukee,*	A. C.
Rietow, Florence Georgiana,	*Sheboygan,*	M. C.
Ringland, Josiah Allen,	*Boone, Ia.,*	Eng.
Risley, Guy Franklin,	*Baraboo,*	C. H.
Roberts, Agnes Ida,	*Milwaukee,*	C. H.
Roberts, Chester Burleigh,	*Milwaukee,*	S. C.
Roderick, Ben H.,	*Brodhead,*	G. S.
Roderick, Dwight Lyman,	*Brodhead,*	Eng.
Rosbrook, Harrison Willard,	*Dixon, Ill.,*	Eng.
Rosenheimer, Alexander Benjamin,	*Schleisingerville,*	C. H.
Rosenheimer, Newton William,	*Kewaskum,*	Eng.
Rosenstengel, Helen Alice,	*Madison,*	M. C.
Rostad, Magdalene,	*Milwaukee,*	A. C.
Runcorn, Edna Marie,	*Plainfield,*	Eng.
Sackett, Edwin Hiram,	*Fond du Lac,*	S. C.
Sanborn, Norman Walker,	*Ashland,*	C. H.
Schmitt, Ella,	*Green Bay,*	C. H.
Schrage, Jennie Thayer,	*Sheboygan,*	Eng.
Schram, Peter Henry,	*Madison,*	C. H.
Schroeder, Charles Ward,	*Joliet, Ill.,*	S. C.
Schorer, Arno Robert,	*Plymouth,*	S. C.
Scott, Fern,	*Sparta,*	M. C.
Segnitz, Herbert,	*Milwaukee,*	S. C.
Seiler, George Ann,	*Alma,*	G. S.
Sexmith, George Wilkins,	*Wausau,*	S. C.
Slagsvol, Thomas Richard,	*Eau Claire,*	S. C.

Sleep, Walter I.,	*Waukesha,*	S. C.
Smith, Elsie Elizabeth,	*Hinsdale, Ill.,*	Eng.
Smith, Osmore Ray,	*Sparta,*	C. H.
Sprecher, Walter Edward,	*Independence,*	G. S.
Squire, James Linus,	*Waterloo*	Eng.
Staver, Roy Boggess,	*Chicago, Ill.,*	Eng.
Stearns, Edward Wording,	*Chicago,*	A. C.
Steidtman, Edward,	*Prairie du Sac,*	G. S.
Stevens, Meda Bee,	*Evansville,*	A. C.
Stevens, Ruth Alice,	*Tomah,*	Eng.
Stillman, George Washington,	*Osage, Ia.,*	S. C.
Stockman, Rebecca,	*Milton Junction,*	Eng.
Stone, Anna Louise,	*Reedsburg,*	M. C.
Stone, Eugene Roger,	*Ashland,*	G. S.
Storm, Anson,	*Plainfield,*	S. C.
Strong, Arthur,	*Dodgeville,*	S. C.
Stroud, Perry Curtis,	*Portage,*	C. H.
Sutherland, Ella,	*Janesville,*	C. H.
Swenson, Edna Grace,	*Madison,*	M. C.
Tanner, Roy James,	*Mondovi,*	S. C.
Taylor, Lily Ross,	*Madison,*	M. C.
Taylor, Margaret Maria,	*Huron, S. D.,*	C. H.
Thomas, Mary Ella,	*Berlin,*	C. H
Thwaites, Fredrik Turville,	*Madison,*	C. H.
Tirrill, Marie Edith,	*Madison,*	C. H.
Tobenkin, Elias Isaac,	*So. Madison,*	M. C.
Todd, Fred Arthur,	*Aurora, Ill.,*	S. C.
Tormey, Julia Florence,	*Madison,*	M. C.
Trowbridge, Edwin,	*Mondovi,*	S. C.
Turvill, Helen,	*Madison,*	C. H.
Van Ingen, Edward Lawton,	*Kenosha,*	C. H.
Van Ingen, John,	*Kenosha,*	C. H.
Van Velzer, Marion,	*Madison,*	G. S.
Walsh, William Thomas,	*Dubuque, Ia.,*	C. H.
Washburn, Martha Lucile,	*Sturgeon Bay,*	G. S.
Watson, Lucius Howard,	*Stoughton,*	Eng.
Webster, Ralph Chester,	*Danville,*	S. C.
Weidner, Max,	*Milwaukee,*	G. S.
Wells, Hugo Smith,	*Depere,*	S. C.
Whaley, Clyde Holden,	*Waupun,*	G. S.
White, Dorothy Elaine,	*Madison,*	G. S.

Whitney, Helen Goldsmith,	*Madison,*	M. C.
Whittier, Rowena Maude,	*Madison,*	C. H.
Wilcox, Edwin McArthur,	*Ft. Atkinson,*	G. S.
Wolfe, Hubert Otto, Jr.,	*Appleton,*	Eng.
Wood, John Heath,	*Chcago, Ill.,*	S. C.
Woodward, Sybil McBride,	*Madison,*	Eng.
Wright, Frederick Charles,	*Ripley, N. Y.,*	C. H.
Yockey, Hester Ligori,	*Escanaba, Mich.,*	Eng.
Zeiher, Emeline Elizabeth,	*West Bend,*	Eng.

SPECIAL STUDENTS.

Adams, Mabel,	*Madison,*	Eng.
Allen, Rolland Craten,	*Dayton*	G. S.
Anderson, Ethelwyn,	*Madison,*	C. H.
Anderson, Selina Elizabeth,	*Racine,*	Eng.
Anderson, William Alfred,	*Madison,*	C. H.
Andresen, Thomas Whelan,	*Medford,*	Eng.
Arnold, William Henry,	*Sharon,*	C. H.
Ballantyne, Edith Virtue,	*Bloomington,*	Eng.
Bandolin, Constantine Alexander,	*Grand Rapids,*	Eng.
Barney, Godfrey Waldo,	*Mauston,*	C. H.
Bellows, Duncan George,	*Milwaukee,*	A. C.
Belt, Hazel Dell,	*Viroqua,*	Eng.
Bennett, Prudence Mary,	*Black Earth,*	Eng.
Berg, Jettie Emerle,	*Belvidere, Ill.,*	C. H.
Berg, Lillie May,	*Madison,*	Eng.
Blake, Emmons, Reed,	*Port Washington,*	Eng.
Bodenius, Elsa Amanda Charlotte,	*Madison,*	C. H.
*Bowman, Mary Frances,	*West Superior,*	M. C.
Boyle, Effie Mary,	*Madison,*	Eng.
Briggs, George Wesley,	*Madison,*	Eng. (Hebrew)
Buchanan, Iva Luella,	*Rio,*	Eng.
Buehler, Elizabeth,	*Monroe,*	G. S.
Bull, Carolyn Curtis,	*Racine,*	C. H.
Burgess, Ida Martha,	*Sharon,*	C. H.
Butterfield, Alice,	*Omaha, Neb.,*	A. C.
Cady, Harold Otten,	*Madison,*	G. S.
Christensen, Carl Christian,	*La Crosse,*	G. S.
Cooper, Mary Matilda,	*Canton, S. D.,*	Eng.
Cortelyou, George Stillwell,	*Brodhead,*	Eng.
Crawford, David Anderson,	*St. Louis, Mo.,*	Eng.

* Died February 23, 1903.

Crane, Guy Walter,	*Milwaukee,*	G. S.
Curtis, Cora Gertrude,	*Allison, Ia.,*	Eng.
Daum, Robert Richard,	*Oshkosh,*	C. H.
Davidson, Mabel Elsie,	*Madison,*	Eng.
Dean, Daisy,	*Eau Claire,*	Eng.
De Lap, Florence May,	*Maywood, Ill.,*	C. H.
Dietz, Arthur,	*Mayville,*	Eng.
Dow, Bernice Edith,	*Madison,*	Eng.
Drew, Walter,	*Madison,*	C. H.
Drury, Alfred Leslie,	*Union Grove,*	Eng.
Dye, Rose Aileen,	*Madison,*	Eng.
Earl, Florence Corlett,	*Lake Mills,*	Eng.
Ellestad, John Martin,	*Madison,*	Eng.
Faller, Phoebe Maud,	*Madison,*	C. H.
Findeisen, Henrietta Mae,	*Chicago, Ill.,*	Eng.
Fischer, Russell Price,	*Waukegan, Ill.,*	C. H.
Foster, Albert William,	*Milwaukee,*	M. C.
Francis, Charles Allen Harrison,	*McGregor, Ia.,*	A. C.
Fridd, Blanche,	*Valley City, N. D.,*	M. C.
Fries, Jennie Grace,	*Richland Center,*	C. H.
Froehlich, John Alfred,	*Madison,*	G. S.
Gilbert, William Horace,	*Madison,*	S. C.
Goddard, Mabel,	*Freeport, Ill.,*	Eng.
Goe, Ruth,	*Madison,*	M. C.
Gray, Mary Josephine,	*Rhinelander,*	Eng.
Green, Frank Berdette,	*Evansville,*	C. H.
Hadley, Ross Albert,	*Madison,*	G. S.
Hainke, Huldah Bertha,	*Milwaukee,*	G. S.
Hannum, Jessie,	*Lancaster,*	M. C.
Hanson, Josephine Burntine,	*Stoughton,*	C. H.
Harder, Edmund Cecil,	*New Holstein,*	G. S.
Harter, Emma Leona,	*Richland City,*	Eng.
Haskins, Lieu Pyrrhas,	*Madison,*	G. S.
Hopson, Howard Colwell,	*Ft. Atkinson,*	G. S.
Humphreys, George Landroth,	*Rewey,*	G. S.
Hunsberger, Charles Edgar,	*Wadsworth, O.,*	S. C.
Hyland, Francis Ross,	*Stoughton,*	Eng.
Jackson, Bettina,	*Madison,*	Eng.
Jenson, Albert Emeal,	*River Falls,*	Eng.
Johnson, Edward,	*Madison,*	Eng.
Johnson, Marjorie Daw,	*Madison,*	Eng.

Johnson, Sherman Amasa,	*Milwaukee,*	G. S.
Jones, Ida Isabelle,	*Plymouth,*	G. S.
Jones, Marion Burr,	*Madison,*	M. C.
Jones, Sarah Belle,	*Wales,*	Eng.
King, Elsie,	*Neillsville,*	Eng.
Kuemmel, Julius Frank,	*Milwaukee,*	G. S.
Kunz, Litta,	*Freeport, Ill.,*	C. H.
Lachmund, Bruno,	*Sauk City,*	G. S.
Landesco, Alexander A.,	*Milwaukee,*	M. C.
Lathrop, Mary Ellinor,	*Vermillion, S. D.,*	Eng.
Lewis, Arthur Warner,	*Madison,*	G. S.
Linné, Edna Hildegarde,	*Red Wing,*	C. H.
Lounsbury, Almyra Belle,	*Madison,*	Eng.
Ludlow, Leo de Ruche,	*Madison,*	C. H.
Lyon, Ruth Erema,	*Madison,*	G. S.
MacGraw, William Don,	*Chippewa Falls,*	C. H.
MacKenzie, Fred William,	*Blue Mounds,*	G. S.
Mahon, Thomas Joseph, Jr.,	*Milwaukee,*	C. H.
Marshall, Katharine Maude,	*Madison,*	M. C.
McConnell, Fred James,	*Monico Junction,*	Eng.
McLean, Marguerite Louise,	*Menomonie,*	Eng.
Meadows, Orley James,	*Oconomowoc,*	G. S.
Milbrath, Edwin Charles,	*Milwaukee,*	G. S.
Miller, John Divine,	*Seattle, Wash.,*	G. S.
Miltenberger, Robert Edgar,	*Randolph,*	G. S.
Miner, Ruth Pauline,	*Madison,*	Eng.
Mix, Faith Dorothy,	*Polo, Ill.,*	G. S.
Nalty, Josephine Agnes,	*Monroe,*	Eng.
Nelson, Tillie Eliza,	*Madison,*	Eng.
O'Brien, John Patrick,	*Randolph,*	G. S.
Paddock, Carrie,	*Madison,*	Eng.
Pallanch, Arthur John,	*Fredonia,*	Eng.
Parker, Harry Fletcher,	*Hudson,*	S. C.
Pattison, Edward Sweeny,	*Durand,*	S. C.
Patton, Walter Dears,	*West Superior,*	G. S.
Paulson, Henry Olaus,	*Perry,*	Eng.
Pease, Clifford Coleman,	*Madison,*	Eng.
Persons, Archie Lee,	*Arkansaw,*	Eng.
Porter, Julian Clarke,	*Lake Mills,*	Phil.
Pray, Kenneth Louis Moffatt,	*Stevens Point,*	C. H.
Pritchard, George Scott,	*Aurora, Ill.,*	C. H.

Ranney, Perry Calvin,	*Bowers,*	G. S.
Raymer, Ethel Frances,	*Madison,*	M. C.
Reid, Alice Jane,	*Oconomowoc,*	G. S.
Reineking, Ella Agnes,	*Sheboygan,*	Eng
Remp, Richard William,	*La Crosse,*	S. C.
Rickeman, Hugo Albert,	*Racine,*	Eng.
Rickeman, Minnie Phoebe,	*Racine,*	M. C.
Ringheim, Edwin Augustine,	*Nevada, Ia.,*	G. S.
Rogers, Maude Agnes,	*Madison,*	Eng.
Runge, Alma Matilda,	*Madison,*	G. S.
Russell, Albert Murdock,	*Madison,*	Eng
Ryan, Marion Eva,	*Wausau,*	M. C.
Saemann, Mabelle Aletta,	*Plymouth,*	Eng.
Sawyer, Elsa Amelia,	*Hartford,*	Eng.
Schantz, Nicholas Milton,	*Hartford,*	Eng.
Schneider, Daniel Leonard,	*Madison,*	Eng.
Scow, Emil,	*Arcadia,*	Eng.
Severin, Henry,	*Milwaukee,*	G. S.
Seville, Flavia Olga,	*Lodi,*	Eng.
Shaw, Margaret Harlan,	*Geneseo, Ill.,*	C. H.
Silverthorn, James Chisholm,	*Wausau,*	G. S.
Smith, Anna Du Pré,	*Madison,*	Eng.
Smith, Katherine Sarah,	*Spring Valley, Ill.,*	Eng.
Smith, Lynn Henry,	*Jefferson,*	C. H.
Smythe, Edwin Willis,	*Madison,*	G. S.
Southworth, Pierre Duane,	*Mondovi,*	G. S.
Starks, Estella Marie,	*Madison,*	Eng.
Stetler, Pearlie Mae,	*Richland Center,*	Eng
Stettler, Augusta,	*Aurora, Ill.,*	M. C
Stewart, Howard MacDonald,	*Delavan,*	G. S.
Strassburger, Erna Dorothea,	*Cedarburg,*	Eng.
Sunderland, Clarence Samuel,	*Hartford,*	G. S.
Sweet, Lucien Samuel,	*Madison,*	C. H.
Taylor Carrie Sabelle,	*Madison,*	M. C.
Twesme, Theodore Albert,	*Elrick,*	C. H.
Urban, William,	*Almond,*	Eng
Van de Walker, Frank Charles,	*Oshkosh,*	S. C.
Van Horn, Frank Benjamin,	*Madison,*	G. S.
Walker, William,	*Joliet, Ill.,*	G. S.
Walters, William Alexander,	*Chicago, Ill.,*	G. S.
Waterbury, Mary Edith,	*Prairie du Sac,*	G. S.

Whelan, John Vale,	*Mondovi,*	G. S.
White, Herford,	*Delafield,*	S. C.
White, May Langdon,	*Boston, Mass.,*	C. H.
Whitman, Roscoe,	*Dodgeville,*	G. S.
Wilbur, Hawley Winfred,	*Waukesha,*	S. C.
Wilkins, Eva,	*Bradford, Pa.,*	C. H.
Wilson, Agnes Edna,	*Boscobel,*	Eng.
Woolever, Lester B.,	*Madison,*	C. H.

ADULT SPECIAL STUDENTS.

Anderson, George Findlay,	*Maquoketa, Ia.*
Andrews, Jessie Campbell,	*Geneseo, Ill.*
Bach, Magdalene Mary,	*Madison.*
Balsley, Edith Rachel,	*Madison.*
Barnard, Elizabeth,	*Earlville, Ill.*
Berto, Thomas J.,	*Amherst.*
Blake, Ward Mitchell,	*Winona, Minn.*
Brinsmaid, William,	*Freeport, Ill.*
Bundy, Bessie Birdell,	*Prairie du Sac.*
Ballu, Celine Agnes,	*Madison.*
Case, Matilda Helen,	*Heart Prairie.*
Clemons, Michael John,	*Madison.*
Cramer, Katherine Downs,	*Baraboo.*
Daggett, Florence Janet,	*Madison.*
Dahle, Clara Amalia,	*Mount Horeb.*
Donnelly, Caroline Brinkman,	*Madison.*
Eaton, Frank Julius,	*Cudahy.*
Edwards, Joseph Rees,	*Milwaukee.*
Eggum, Ole J.,	*Mt. Horeb.*
Elmer, Gertis Dresser,	*Rochelle, Ill.*
Emerson, Alfred Esedor,	*Chippewa Falls.*
Fenne, Christine,	*Argyle.*
Fenton, Polly,	*Madison.*
Festerling, Edwin Garfield,	*Sheboygan.*
Gilbert, Edna Marion,	*Madison.*
Glen, Mary Alice,	*Madison.*
Goodrich, Ada,	*Burke.*
Handley, Edward,	*Horicon.*
Hoan, Daniel Webster,	*Waukesha.*
Holty, Martin Nuell,	*Newark, Ill.*
Johnson, Ida Petrine,	*West Salem.*

Johnson, Jessie,	*Madison.*
Joslin, George Stanley,	*Madison.*
Kavanagh, Edward Vincent,	*Clear Lake.*
Kenedy, Bess G.,	*Neillsville.*
McDonnell, Mary Agnes,	*Evanston, Ill.*
McClaskey, Walter Philip,	*Brooklyn.*
Mendelson, Sara Amelie,	*Madison.*
Moran, Helen Comilla,	*Madison.*
Morgan, John Jeremiah,	*Cascade.*
Norris, Marcella Estelle,	*Fennimore.*
Nye, Robert Clark,	*Ogden, Utah.*
Palmer, Florence Adelaide,	*Janesvile.*
Prien, Roland Henry,	*Madison*
Reynolds, Paul Nangle,	*Jacksonport.*
Rockman, Julius,	*Barron.*
Ross, Harry Vincent,	*Madison.*
Shay, Ralph Reed,	*Streator, Ill.*
Singleton, George Brosnan,	*Prentice.*
Stephens, Maude,	*Fennimore.*
Sturdevant, Meda Eva,	*Neillsville.*
Suter, Jesse Dwight,	*Madison.*
Walker, Ellis Janet,	*Fond du Lac.*
Watrous, Paul Jerome,	*Milwaukee.*
Wilder, Gertrude Mabel,	*Madison.*
Williams, Elmer Howard,	*Soldiers' Grove.*
Witherbee, Exie Lillian,	*Hazel Green.*
Wrabetz, Joseph,	*Kewaunee.*

School of Pharmacy.

FOUR YEARS' COURSE.

Davidson, Wilbur Gordon,	*Sun Prairie,*	Freshman.
Kundert, Alfred Emil,	*Monroe,*	Senior.
North, Harry Briggs,	*Janesville,*	Junior.
Schmidt, Fred August,	*Wausau,*	Junior.
Tweeden, Eugene Melvin,	*Oconomowoc,*	Junior.

THREE YEARS' COURSE.

Beck, Joseph Jack,	*Milwaukee,*	Senior.
Burns, Thomas Jay,	*Oakfield,*	Sophomore.
Lehman, Conrad Charles,	*Cedarburg,*	Senior.
Longfield, Raymond Patrick,	*Madison,*	Sophomore.
Rabak, Frank,	*Webster, S. D.,*	Senior.

Richmond, Earl Dewitt,	*Eagle River,*	Junior.
Spence, Elbert Wychoff,	*La Crosse,*	Sophomore.
Ziepprecht, Carl William,	*Dubuque, Ia.,*	Senior.

TWO YEARS' COURSE.

Bauer, Alfred Henry,	*Brownsville,*	Junior.
Brady, Daniel Leo,	*Mt. Hope,*	Junior.
Creeden, Frank Bernard,	*Greenleaf,*	Junior.
Du Mez, Andrew Grover,	*Cashton,*	Junior.
Falk, Elmer Johann,	*Stoughton,*	Senior.
Hall, Frederick Rufus,	*Reedsburg,*	Senior.
Hanson, Edwin Albert,	*Blair,*	Junior.
Hass, Edmond Richard,	*Fond du Lac,*	Senior.
Hassall, George Anschutz,	*Keokuk, Ia.,*	Junior.
Henkel, Orville Andrew,	*Milwaukee,*	Junior.
Joslin, George Albert,	*Allen Grove,*	Junior.
Lapham, Elah Adelbert,	*Nekoosa,*	Junior.
Sauerberg, Otto Friedrich,	*Neillsville,*	Junior.
Schlei, Fred Frank,	*Oconomowoc,*	Junior.
Schmitz, Frederick Joseph,	*Madison,*	Junior.
Shaw, Harold Ironside,	*Lake Mills,*	Junior.
Smith, Arthur Frederick,	*Oconomowoc,*	Junior.
Squier, Stanley Lynn,	*Tomah,*	Junior.
Werner, Henry James,	*Galesburg,*	Senior.
Whittaker, Harold Arthur,	*Oconomowoc,*	Senior.

College of Mechanics and Engineering.

SENIOR CLASS.

Adams, Benjamin Cullen,	*Madison,*	E. E.
Adams, Walter Kelsey,	*Madison,*	C. E.
Anderson, Arthur Edward,	*Janesville,*	M. E.
Bailey, Hiram Edwin,	*Madison,*	E. E.
Belling, John William,	*Mondovi,*	E. E.
Bertke, William John,	*Milwaukee,*	E. E.
Brandt, Hugo Ernst,	*Watertown,*	C. E.
Brobst, John Everett,	*Mondovi,*	E. E.
Brown, Lewis Raymond,	*Oshkosh,*	E. E.
Cadby, John Nelson,	*Madison,*	E. E.
Cowie, Harry James,	*West Superior,*	C. E.
Crandell, Willis Earl,	*Plainfield,*	E. E.
Dean, Garrison Culy,	*Eau Claire,*	M. E.
Dean, John Seabury,	*Madison,*	M. E.

Dessert, Howard Louis,	*Mosinee,*	C. E.
Douglas, Courtney Carlos,	*Fontana,*	M. E.
Ekern, Emil Alfred,	*West Superior,*	E. E.
Elliott, Howard Stickney,	*Mazomanie,*	E. E.
Frendburg, August Fred,	*Ashland,*	C. E.
Friend, Jacob Henry,	*Antigo,*	E. E.
Gapen, Jotham Clark,	*Monroe,*	E. E.
Geerlings, Henry John,	*Milwaukee,*	M. E.
Goodenough, Charles Frederick,	*West Depere,*	G. E.
Goudie, James,	*Ironwood, Mich.,*	E. E.
Greaves, Arthur Clayton,	*Madison,*	C. E.
Haase, Alvin,	*Milwaukee,*	C. E.
Hadfield, Ray Harrison,	*Madison,*	M. E.
Hahn, John Francis,	*Madison,*	C. E.
Haman, Morris Emile,	*Madison,*	E. E.
Hejda, Charles Joseph,	*Manitowoc,*	E. E.
Hill, Minot James,	*Almond,*	E. E.
Holloway, Don Clement,	*Janesville,*	M. E.
Hotchkiss, William Otis,	*Eau Claire,*	G. E.
Howland, Henry Phelps,	*Madison,*	M. E.
Huels, Frederick William,	*Madison,*	E. E.
Johnson, Arthur Lewis,	*Chicago, Ill.,*	M. E.
Keachie, George Robertson,	*Madison,*	C. E.
Krumrey, Robert Garfield,	*Plymouth,*	E. E.
Laurgaard, Olaf,	*La Crosse,*	C. E.
Lea, Henry Leslie,	*Iron River,*	E. E.
Lennon, Hawley Daniel,	*Decorah, Ia.,*	C. E.
Lisberger, Sylvan Joseph,	*Danville, Va.,*	E. E.
Lyons, Benjamin Franklin,	*Appleton,*	M. E.
Manington, Joseph Alfred,	*Madison,*	C. E.
McCullough, Frank Michael,	*Sturgeon Bay,*	C. E.
McNown, William Coleman,	*Mauston,*	C. E.
Morrison, Rowland Hill,	*Morrisonville,*	M. E.
Mott, William Roy,	*Decorah, Ia.,*	E. E.
Mueller, Edgar Bruno,	*Manitowoc,*	E. E.
Perry, Claude Halpine,	*Madison,*	C. E.
Pugh, John, Jr.,	*Racine,*	E. E.
Quigley, Arthur Joseph,	*Lake Geneva,*	M. E.
Rowe, Will Jonathan,	*Warren, Ill.,*	E. E.
Rueping, Louis Henry,	*Fond du Lac,*	M. E.
Saunders, Henry Jenness,	*Madison,*	C. E.

Savage, John Lucian,	*Madison,*	C. E.
Saxton, Willard Roy,	*Berlin,*	C. E.
Seaman, Irving	*Milwaukee,*	E. E.
Spalding, Will,	*Oshkosh,*	E. E.
Stevens, Harold Lyell,	*Madison,*	C. E.
Trevarthen, Dwight Cutler,	*Madison,*	G. E.
Warner, Henry Michael,	*Baltimore, Md.,*	C. E.
Weber, Frederic Carl,	*Fond du Lac,*	E. E.
Wedemeyer, Adrian August,	*Sheboygan,*	M. E.
Willson, Frank Gardner,	*Bozeman, Mont.,*	E. E.
Wilson, John,	*Dodgeville,*	C. E.
Woodruff, Leslie Bateman,	*Milwaukee,*	M. E.
Woy, Frank Palmer,	*Sparta,*	E. E.
Zimmerman, Clarence Irving,	*Milwaukee,*	E. E.

JUNIOR CLASS.

Andrews, Aden Wright,	*Columbus,*	C. E.
Barber, Edwin Lamont,	*Lenexa, Kan.*	E. E.
Benedict, Wallace James,	*Milwaukee,*	M. E.
Bennett, William Bryant,	*Mineral Point,*	C. E.
Bingham, Joseph Inhoff,	*Lockwood, N. Y.,*	C. E.
Bleser, Arthur Joseph,	*Manitowoc,*	C. E.
Blood, Frank Herbert,	*Kenosha,*	E. E.
Bradford, William,	*Stevens Point,*	E. E.
Brown, William Edwin,	*Racine,*	C. E.
Cahoon, Ora Butler,	*Madison,*	M. E.
Carter, Perry John,	*Mauston,*	C. E.
Chamberlain, Frederick Arthur,	*Madison,*	E. E.
Cheney, Seymour Wyatt,	*Fond du Lac,*	M. E.
Conger, Raymond Tracy,	*Elgin, Ill.,*	E. E.
Coon, Royden Jonas,	*Plainfield,*	C. E.
Crumpton, William Jarius,	*West Superior,*	E. E.
Elvis, George Harvey,	*Medford,*	M. E.
Eustis, Charles Loron,	*Ft. Atkinson,*	E. E.
Ewald, Robert Franklin,	*Fairchild,*	C. E.
Fisher, Ernest James,	*Beaver Dam,*	C. E.
Flaig, John Fred,	*Sheboygan,*	C. E.
Frost, Donald Karn,	*Madison,*	E. E.
Galloway, Edward William,	*Whitewater,*	M. E.
Gardner, Harry,	*Monroe,*	C. E.
Gilman, James Moseley,	*Madison,*	C. E.
Goetz, Edward August,	***Milwaukee,***	**G. E.**

Griswold, Robert Gray,	*West Salem,*	M. E.
Hagenah, Rudolph Emil,	*Reedsburg,*	M. E.
Hall, Edwin Morgan,	*Brodhead,*	E. E.
Hall, Merton Glenn,	*Reedsburg,*	C. E.
Hanson, Frank Herbert,	*Stoughton,*	E. E.
Haugan, Charles Marius,	*Chicago, Ill.,*	E. E.
Hauser, William Henry,	*Fargo, N. D.,*	M. E.
Heidemann, Walter Richard,	*Waterloo,*	E. E.
Henry, Robert Roy,	*Anchorage,*	E. E.
Hodge, John Sherman,	*Burnett Junction,*	M. E.
Hopper, Charles Van Emburg,	*Eau Claire,*	C. E.
Kahn, Gustave Edmund,	*Milwaukee,*	C. E.
Kinne, William Spaulding,	*Madison,*	C. E.
Klinkert, George Peter,	*Racine,*	E. E.
Koch, Walter John,	*Milwaukee,*	M. E.
Krippner, Arthur Frederick,	*Ft. Atkinson,*	E. E.
Lathrop, Leigh Hunt,	*Madison,*	E. E.
Lee, Allan,	*Cambridge,*	G. E.
Lee, Norman,	*Cambridge,*	E. E.
Lowen, Archer Hamilton,	*Madison,*	E. E.
MacArthur, Donald,	*West Superior,*	M. E.
Martin, Hal Eugene,	*Fond du Lac,*	C. E.
McDonald, Harry L.,	*Madison,*	C. E.
McEachron, Edgar James,	*West Depere,*	M. E.
Merrill, Zadok,	*Madison,*	E. E.
Moorhouse, Louis Benjamin,	*Elkhorn,*	M. E.
Moritz, Ernest Anthony,	*Madison,*	C. E.
Murphy, Francis Hayes,	*Balmoral,*	E. E.
Musil, Louis Frederick,	*Manitowoc,*	E. E.
Musser, James Marc,	*Madison,*	E. E.
Nicolaus, Arthur William,	*Beaver Dam,*	C. E.
Noyes, John Draper,	*Baraboo,*	E. E.
Omara, Edwin,	*Chicago, Ill.,*	C. E.
Owen Ray,	*Footville,*	C. E.
Peters, Charles Sumner,	*Dodgeville,*	E. E.
Petura, Frank Joseph,	*Racine,*	E. E.
Post, George Gilbert,	*Madison,*	E. E.
Rowe, William Allard,	*Eau Claire,*	E. E.
Rowley, Frank Benjamin,	*Evansville,*	M. E.
Saridakis, Frank,	*Milwaukee,*	M. E.
Schwendener, Harry Garfield,	*Milwaukee,*	E. E.

Servis, Frank Arthur,	*La Crosse,*	E. E.
Shealy, Edward Marvin,	*Columbia, S. C.,*	E. E.
Simmons, George Matthews,	*Viola,*	E. E.
Smith, Clyde Charles,	*Bangor,*	C. E.
Staack, John George,	*Middleton,*	C. E.
Stewart, Arthur Thomas,	*Los Angeles, Cal.,*	E. E.
Stewart, James Alexander,	*West Superior,*	E. E.
Townsend, John Robert,	*Waupaca,*	E. E.
Treber, Albert Philip,	*Deadwood, S. D.,*	E. E.
Tullock, George,	*Rockford, Ill.*	M. E.
Turner, Paul Boynton,	*Stoughton,*	E. E.
Uihlein, Benedict William,	*Milwaukee,*	M. E.
Van Hagan, Leslie Flanders,	*Chicago, Ill.,*	C. E.
Whitby, Willis,	*Jericho,*	C. E.
Whiting, Max Albert,	*Watertown,*	E. E.
Wild, Edward Charles,	*Mayville,*	C. E.
Zaremba, Edward,	*Chicago, Ill.,*	E. E.
Ziegeweid, Anton Basil,	*Arcadia,*	C. E.
Zinke, Paul Frederick,	*Fond du Lac,*	E. E.

SOPHOMORE CLASS.

Anger, Bernhard Frederick,	*Milwaukee,*	M. E.
Balch, Leland Rella,	*Neillsville,*	C. E.
Balsom, Amos Parker,	*Hudson,*	E. E.
Blossey, Albert Frederick,	*Cadott,*	M. E.
Bolles, Edgar James,	*Madison,*	E. E.
Borchert, Ernst, Jr.,	*Milwaukee,*	G. E.
Boynton, John Edson,	*Jerseyville, Ill.,*	M. E.
Bradshaw, John Ward,	*Superior,*	E. E.
Breitkreutz, Emil William,	*Wausau,*	C. E.
Brennan, Bernard Conrad,	*Cato,*	C. E.
Bull, Eyvind Hagerup,	*Madison,*	C. E.
Burling, Lancaster Demorest,	*Madison,*	C. E.
Burke, Thomas James,	*Winona, Minn.,*	C. E.
Casserly, James Felix,	*Madison,*	E. E.
Colburn, Avery Reeves,	*Highland Park, Ill.,*	E. E.
Cole, Herbert Spencer,	*La Crosse,*	C. E.
Conrad, Nicholas John,	*Port Washington,*	E. E.
Craigo, Ralph Thurman,	*Monroe,*	E. E.
Cratty, Paul Jones,	*Oak Park, Ill.,*	E. E.
Cronk, Forbes Bismark,	*Madison,*	C. E.
Derge, Mathias Louis,	*Eau Claire,*	E. E.

Dorner, Frederick Harry,	*Milwaukee,*	M. E.
Duckett, Walter Elmer,	*Burlington,*	C. E.
Elmore, Samuel Eltinge,	*Milwaukee,*	M. E.
Falconer, Donald Patton,	*Corry, Pa.,*	C. E.
Fisk, Andrew Jackson, Jr.,	*Helena, Mont.,*	C. E.
Ford, Ralph Henry,	*Tomah,*	E. E.
Foster, Leslie Gould,	*River Falls,*	E. E.
Gates, Howard Babcock,	*Milton Junction,*	C. E.
Gauger, John Charles,	*Manitowoc,*	C. E.
Gierow, Otto Albert,	*Chilton,*	E. E.
Graham, Guy Alexander,	*Reedsburg,*	C. E.
Grier, James Harold,	*Lake Geneva,*	C. E.
Haertel, Carl Frederick,	*Madison,*	E. E.
Haley, George Henry,	*Watertown, N. Y.,*	C. E.
Hamilton, Charles Wesley,	*Plainfield,*	C. E.
Hansen, Charles Andrew,	*Milwaukee,*	E. E.
Harlacher, Lloyd Ralph,	*Madison,*	C. E.
Harvey, William Riley,	*Madison,*	E. E.
Hawkins, Lewis Wood,	*Waukegan, Ill.,*	G. E.
Hawley, Royal Duncan,	*Chicago, Ill.,*	C. E.
Helmholz, Arthur William,	*Madison,*	E. E.
Hoefer, Chester Arthur,	*Freeport, Ill.,*	M. E.
Hoefer, Elmer George,	*Freeport, Ill.,*	M. E.
Hosig, Irwin Benjamin,	*Hartford,*	C. E.
Hunner, Hale Haven,	*Eau Claire,*	C. E.
Inbusch, Herbert Stark,	*Milwaukee,*	E. E.
Inbusch, Walter Henry,	*Milwaukee,*	E. E.
Irving, Thomas Joseph,	*Watertown,*	C. E.
Jacobs, Ernest R.,	*Aurora, Ill.,*	E. E.
Jones, Richard,	*Waukesha,*	E. E.
Jones, William Nelson,	*Madison,*	C. E.
Kayser, Edward Mathew,	*Green Bay,*	C. E.
Kershaw, George Darwin,	*Wauwatosa,*	M. E.
King, Max Werner,	*Madison,*	C. E.
Kirkland, Harry Bristol,	*Janesville,*	C. E.
Klatte, Alfonzo Julius,	*Milwaukee,*	C. E.
Kunz, William Harry,	*Freeport, Ill.,*	C. E.
Larkin, Fred Viall,	*Verona,*	E. E.
Larsen, Albert,	*Milwaukee,*	M. E.
Legreid, Herman Nicholas,	*Stoughton,*	E. E.
Long, Fred Alva,	*Davenport, Ia.,*	C. E.

MacMillan, Harold St. Clair,	*Wauwatosa,*	M. E.
Mann, Franklin Harvey,	*Shullsburg,*	C. E.
McWethy, Frank Henry,	*Aurora, Ill.,*	M. E.
Meyer, Adolph Frederick,	*Cedarburg,*	C. E.
Millar, William John,	*Milwaukee,*	C. E.
Miller, Arthur Herbert,	*West Salem,*	M. E.
Mitchell, Henry Zehring,	*St. Cloud, Minn.,*	G. E.
Morgan, Walter Daniel,	*Reedsburg,*	G. E.
Morrison, Harry Irwin,	*Eau Claire,*	E. E.
Morrissey, Patrick William,	*Mauston,*	M. E.
Muir, Roy Cumming,	*Arcadia,*	E. E.
Nedeleff, Paul Peter,	*Panaguriste, Bulgaria,*	C. E.
Olsen, Rossie Gye,	*Arcadia,*	E. E.
Olson, Harry Marinius,	*Madison,*	E. E.
Orbert, Edwin Gray,	*Green Bay,*	C. E.
Peotter, Reuben Sylvester,	*Appleton,*	C. E.
Perkins, Willis Drummond,	*La Crosse,*	E. E.
Petersen, Henry William,	*Waldo,*	C. E.
Pfahler, Fred Samuel,	*Mason City, Ia.,*	C. E.
Potts, Frederick Andrew,	*Waupaca,*	C. E.
Price, John Reese,	*Cambria,*	E. E.
Ramstad, Albert George,	*Eau Claire,*	E. E.
Reed, Carl Sweetland,	*Canandaigua, N. Y.,*	E. E.
Reich, Albert Ignatus,	*Tunnel City,*	C. E.
Rice, Leverett Ernest,	*Madison,*	M. E.
Richardson, Walter Hawley,	*Milwaukee,*	M. E.
Robinson, Benjamin Aldrich,	*Kenosha,*	C. E.
Robinson, Ray Fisk,	*West Superior,*	E. E.
Rodenbaeck, George Albrecht,	*New Holstein,*	E. E.
Rood, Charles Mackey,	*Reedsburg,*	M. E.
Russell, Webber Sands,	*La Crosse,*	E. E.
Sawyer, Walter Percy,	*Waukesha,*	C. E.
Schattschneider, Sylvester,	*De Forest,*	C. E.
Schmidley, William Robert,	*Janesville,*	E. E.
Schoephoester, Albert John,	*Reedsburg,*	C. E.
Schumacher, Arthur Henry,	*Chicago, Ill.,*	M. E.
Selbie, William Eliot,	*Deadwood, S. D.,*	C. E.
Seyton, Harry J.,	*Richmond, Ill.,*	C. E.
Sherron, Frank James,	*Monroe,*	M. E.
Sinz, Edward Frederick,	*Johnsonville,*	C. E.
Skonnord, Norman Olaf,	*La Crosse,*	C. E.

Smith, Homer Henry,	*Chicago, Ill.,*	G. E.
Smith, Joseph Robert,	*Milwaukee,*	M. E.
Snow, William Mathew,	*Mineral Point,*	G. E.
Soper, Charles Plinie,	*Darien,*	C. E.
Stack, James Raymond,	*Madison,*	C. E.
Swan, George Dempster,	*Clinton,*	E. E.
Terhorst, Harvey,	*Milwaukee,*	E. E.
Thon, George Louis,	*Aurora, Ill.,*	C. E.
Ungrodt, George Frederick William,	*Medford,*	E. E.
Vinson, Albert Wilkinson,	*Milwaukee,*	M. E.
Wagle, Oswal Olson,	*Madison,*	E. E.
Walter, Roscoe George,	*Mazomanie,*	C. E.
Ward, Hugh Charles,	*Madison,*	E. E.
Warner, Jesse Walter,	*Mason City, Ia.,*	E. E.
Washburn, David Curtis,	*Racine,*	C. E.
Weed, James Murray,	*Madison,*	E. E.
Weld, Harold Kenneth,	*Elgin, Ill.,*	G. E.
West, Payne Gardiner,	*Waukesha,*	C. E.
Wescott, Milton Benham,	*Shawano,*	G. E.
Wharry, Major Earl,	*Elkhorn,*	M. E.
Wheeler, William Sprague,	*Chicago, Ill.,*	M. E.
Whinery, Ralph Harper,	*Marshalltown, Ill.,*	C. E.
White, Fred Grant,	*Waterloo,*	E. E.
Whyman, Robert Horatio,	*Madison,*	M. E.
Willison, Charles Donald,	*Fennimore,*	E. E.
Winger, Carl,	*Grand Rapids,*	M. E.
Wray, Edward,	*Janesville,*	E. E.
Wright, Allen Edgar,	*Madison,*	C. E.
Wulfing, Harry Eugene,	*Viroqua,*	E. E.

FRESHMAN CLASS.

*Almquist, Carl Gustave William,	*Delavan.*
Anderson, Rolf Bull,	*Madison.*
Arnold, Douglass Luther,	*Sharon.*
Arnold, Gerald Douglas,	*Galesville.*
Arnold, Harry Earle,	*Lake Geneva.*
Baas, Cornelius Tavenier,	*Lake Geneva.*
Baldwin, William Gage,	*Sparta.*
Balsom, John James,	*Hudson.*
Bates, William Ensign,	*Mason City, Ia.*

*Died Nov. 18, 1902.

Bayne, Robert Royden,	*Warren, Ill.*
Bell, Walter Mortimore,	*Hudson.*
Bennett, Edward Lutley,	*Black Earth.*
Bertke, Wilson Arthur,	*Milwaukee.*
Beye, Cudworth,	*Oak Park, Ill.*
Biersach, Rudolph,	*Milwaukee.*
Bigelow, Charles Miller,	*Milwaukee.*
Bingham, James Baldwin,	*Lockwood, N. Y.*
Bodenbach, Max Nicholas,	*Milwaukee.*
Brewer, Paul James,	*Mineral Point.*
Brown, James Augustus,	*Madison.*
Browne, Eber Glenn,	*Mazomanie.*
Bryant, Alvin William,	*Oshkosh.*
Burgess, Edward Wesley,	*Milwaukee.*
Burling, Beverly Burdette,	*Freeport, Ill.*
Burnham, Ralph Jordan,	*Fergus Falls, Minn.*
Burnley, John Philip,	*Hudson.*
Bush, James Irving,	*Milwaukee.*
Bushby, William,	*Shullsburg.*
Button, Henry Harrison, Jr.,	*Milwaukee.*
Byers, Vernon Clyde,	*Madison.*
Cade, Orphus Blaine,	*Viroqua.*
Calvin, Carl,	*Lancaster.*
Canfield, Harry Mercer,	*Mt. Sterling.*
Carey, Edward Thomas,	*Clinton, Ia.*
Claridge, Joshua,	*Reedsburg.*
Cleary, John Edward,	*Antigo.*
Compton, Arthur Mandeville,	*Madison.*
Concklin, Bert Morse,	*Milwaukee.*
Conway, Jesse Frank,	*Antigo.*
Conway, William Malcolm,	*Argyle.*
Curtin, James Hugh,	*Madison.*
Daniels, John Albert Randolph,	*Freeport, Ill.*
Dapprich, Carl Emil Louis,	*Milwaukee.*
Davey, Du Wayne,	*Dodgeville.*
Davidson, Paul Edward,	*Green Bay.*
Dixon, William Raymond,	*Fennimore.*
Dodge, Edgar Clark,	*Augusta.*
Dunlap, Guy Lewis,	*Mazomanie.*
Ebert, Frederick Charles,	*Tomah.*
Ellis, Joseph Franklin,	*Eau Claire.*

Esknche, Oscar Arthur,	*Milwaukee.*
Falk, Harold Sands,	*Milwaukee.*
Findlay, William Walworth Herbert,	*Waukesha.*
Fisher, Frank Eugene,	*Joliet, Ill.*
Flagg, William Henry,	*Kaukauna.*
Flickinger, Floyd Spangler,	*Council Bluffs, Ia.*
German, Henry Louis,	*Brackett.*
Greer, Paul Melville,	*Marquette, Mich.*
Grueningen, Gustave von,	*Sauk City.*
Gutenkunst, Hugo Arthur,	*Milwaukee.*
Hande, John Hallward,	*Eau Claire.*
Hannahs, Lynn Thomas,	*Kenosha.*
Hannum, Warren Jay,	*Lancaster.*
Hardacker, Raymond James,	*Appleton.*
Harrop, Lawrence James,	*Fond du Lac.*
Hart, Julian,	*Gillingham.*
Hautzinger, John Paul,	*Stevens Point.*
Heller, Harry Leopold,	*Milwaukee.*
Henderson, Alonzo Ray,	*Mayville.*
Henry, Otto Raymond,	*Viroqua.*
Hess, George Bailey,	*Racine.*
Hilfert, Albert Otto,	*Appleton.*
Hillyer, Raymond Hobart,	*Merrill.*
Hinrichs, Charles Ott,	*Milwaukee.*
Hoefer, Alfred Ulysses,	*Freeport, Ill.*
Hoelz, John Bernard,	*Burlington.*
Holm, William Miller,	*Madison.*
Hood, William Frederick, Jr.,	*Fairchild.*
Howson, Elmer Thomas,	*Clinton, Ia.*
Hubbard, Maynard G.,	*Madison.*
Huber, William Martin,	*Sharon.*
Hueffner, Frederick William,	*Racine.*
Hull, Irving Weslie,	*Antigo.*
Hunt, Henry James,	*Stoughton.*
Hurley, John Dennis,	*New London.*
Irvine, Edward Eastman,	*La Crosse.*
Jacobson, Jesse Ernest,	*Clinton Junction.*
Jenista, George John,	*Rushville.*
Jewell, Edgar Wickwire,	*Oshkosh.*
Johnson, Arden Richard,	*Stoughton.*
Johnson, Frederick May,	***Tunnel City.***

Johnson, Guy Maxwell,	*West Salem.*
Johnson, Leander August,	*Eagle Grove, Ia.*
Johnson, Olaf Benjamin,	*Chicago, Ill.*
Johnson, Soren William,	*Waupaca.*
Kadansky, Joseph Frank,	*Dorchester.*
Kalvestrand, Lars Alfred Marion,	*Avalanche.*
Kawasaki, Ro Sitz,	*Santa Barbara, Cal.*
Kearney, Edgar,	*Springfield, Mo.*
Kelly, Thomas Francis,	*Milwaukee.*
Kennedy, Frank Albert,	*Merrill.*
Kettenhofen, John Francis,	*Wrightstown.*
Keyes, Dudley Hyde,	*Madison.*
Klingholz, Carl Oscar,	*Manitowoc.*
Koenig, Remus,	*Two Rivers.*
Kohn, Alvin John,	*Reeseville.*
Kommers, Jesse Benjamin,	*Sheboygan.*
Kuehmsted, Hugo,	*Appleton.*
Kuehns, Romano Benvenuto,	*Milwaukee.*
Lacher, Walter Scott,	*Waukesha.*
La Dow, Carl Vernon,	*Sandusky, O.*
La Roy, Herbert Arthur,	*Waukesha.*
La Rue, George Andrew,	*Reedsburg.*
Latta, Warren Hartshorn,	*Clinton.*
Laurence, Douglas Howard,	*Sterling, Ill.*
Lawrence, Frank Henry,	*Lake Geneva.*
Leasman, Emil Leo,	*Boscobel.*
Libby, Lawrence Moses,	*New Richmond.*
Logan, Arthur William,	*Lake Geneva.*
Lohneis, George Henry,	*Sun Prairie.*
Long, Sidney Simon,	*Mason City, Ia.*
Lucas, Thomas Joseph,	*Madison.*
Luick, Adolph James,	*Milwaukee.*
Lynch, Raymond Michael,	*Cedarburg.*
Maloney, Frank Lea,	*Milwaukee.*
Manchester, Thomas Harris,	*Milwaukee.*
Manegold, Robert Albert,	*Milwaukee.*
McCoy, Lloyd Baxter,	*Milwaukee.*
McCready, Wallace,	*Spring Green.*
McLean, Francis Julian,	*Menomonie.*
Mead, Warren Judson,	*Plymouth.*
Meadowcroft, Miner T.,	*Poynette.*

Meloy, Charles Thomas,	*Shullsburg.*
Middleton, Owen William,	*Berlin.*
Miller, Daniel Webster,	*Somers.*
Millman, Samuel Raymer,	*Monroe.*
Morgan, Chester Pond,	*Evansville.*
Moser, Albert Leo Brecht,	*Cripple Creek, Colo.*
Mosher, Alfred Orville,	*Beloit.*
Musil, Emil Edwin,	*Manitowoc.*
Nash, Robert Lee,	*Grand Rapids.*
Newcomb, Clyde Eugene,	*De Kalb, Ill.*
Newton, Frank Arthur,	*Sparta.*
Noe, Edgar James,	*Madison.*
O'Brien, Leo Lewellyn,	*Sparta.*
O'Keefe, Edward James,	*Mason City, Ia.*
Orton, Frank S.,	*Lancaster.*
Osborne, Clyde Elmer,	*Indianapolis, Ind.*
Parfrey, Charles Alfred,	*Richland Center.*
Parker, Frank Ingram,	*Mondovi.*
Parker, Howard Ashley,	*Milwaukee.*
Parker, Wilfred Cedric,	*Milwaukee.*
Pease, Bernard Snell,	*Richland Center.*
Peck, Bertine Hila,	*Berlin.*
Peterson, Nels John,	*Marinette.*
Pratt, Clarence Harding,	*Beloit.*
Purcell, John Joseph,	*Kilbourn.*
Rath, William Charles,	*Appleton.*
Read, Benjamin Killey,	*Lake Geneva.*
Reid, John Winfield,	*Oconomowoc.*
Reineking, Vistor Herman,	*Sheboygan.*
Reynolds, Ira Lambert,	*Mineral Point.*
Richards, Carl,	*Platteville.*
Ripley, Russell Rosier,	*Oakfield.*
Robertson, Lawrence Bernard,	*Ft. Atkinson.*
Robinson, Joseph Almanzo,	*Iron Mountain, Mich.*
Robinson, William Humphrey,	*Berlin.*
Rockwell, Charles Adelbert,	*Ft. Atkinson.*
Roemer, Richard Quirin,	*Manitowoc.*
Rosier, Frank Burdette,	*Rubicon.*
Rossiter, Ernest,	*Appleton.*
Rowe, Wilfred,	*Eau Claire.*
Rowley, Warren,	*Evansville.*

Sacket, Walter Hobart,	*Berlin.*
Sampson, Henry Ahira,	*Grand Rapids.*
Saubert, Henry Michael,	*Kaukauna.*
Sawyer, Henry Payson,	*Chicago, Ill.*
Schellenger, Guy,	*Madison.*
Scheuer, Charles Henry,	*Mishicot.*
Schultze, Theodore Richard,	*Madison.*
Selbie, Charles Chaudoin,	*Deadwood, S. D.*
Severin, Max Charles,	*Fond du Lac.*
Severson, Stephen Benjamin,	*Stoughton.*
Shadbolt, Loomis James,	*Sheboygan.*
Sheets, Harry Alvin,	*Milwaukee.*
Shepard, Colin Reed,	*Depere.*
Sherger, Elmer George,	*Evansville.*
Shipman, Burt Uzal,	*Beaver Dam.*
Smith, Raymond Lloyd,	*Milwaukee.*
Sorem, Alfred Julius,	*West Superior.*
Spetman, Erwin Ehrig,	*Council Bluffs, Ia.*
Stivers, Arthur Ducat,	*Ripon.*
Stock, Harry,	*Madison.*
Strait, Edward Nathan,	*Sparta.*
Stronach, Harry Samuel,	*Marinette.*
*Sunderland, Joseph Croft,	*Hartford.*
Sustins, Walter Otis,	*Stevens Point.*
Tarr, Charles Albert,	*Auburn.*
Tarr, John Cecil,	*Auburn.*
Taylor, John Atkinson,	*New Lisbon.*
Terhorst, Steven,	*Milwaukee.*
Thorne, Jent George,	*Clinton, Ia.*
Toye, Clarence Glen,	*Winona, Minn.*
Uihlein, Oscar Louis	*Milwaukee.*
Van Meter, Thomas Earl,	*Baraboo.*
Vroman, John Charles,	*Chicago, Ill.*
Wachtmann, Edmund Louis Charles,	*Oldham, S. D.*
Walker, Alfred Harland,	*Koro.*
Walker, Clarence George,	*Berlin.*
Walsh, Arthur Jeremiah,	*Stanton.*
Ward, Louis Edward,	*Ft. Atkinson.*
Warren, Wyman Edgar,	*Stoughton.*
Weston, Leonard Fisher,	*Clinton, Ia.*

*Died Jan. 18, 1903.

Wetzler, William Henry,	*Beloit.*
Wheeler, Roy Alvah,	*Wauwatosa.*
Whelan, Judson Sutherland,	*Mondovi.*
Whelan, Thomas C.,	*Chippewa Falls.*
Wigman, James Bernard,	*Green Bay.*
Willott, Rube Charles,	*Manitowoc.*
Wilson, Ira Jay,	*Ripon.*
Works, Robert Miller,	*Augusta.*
Wright, Milton Raleigh,	*New London.*
Yates, William Henry,	*Negaunee, Mich.*
Youngblutt, Frederick Carl,	*Middleton.*

SPECIAL STUDENTS.

Austin, James Lee,	*Milwaukee,*	E. E.
Barnard, Archer Fortescue,	*St. Joseph, Mo.,*	C. E.
Berg, John,	*Centerville, S. D.,*	C. E.
Bishop, Warren Joseph,	*Milwaukee,*	G. E.
Boone, Charles,	*Warren, Ill.,*	E. E.
Borresen, Borge Haugan,	*Madison,*	C. E.
Brenton, Charles Elmer,	*Ross, Ia.,*	E. E.
Brown, Charles Eugene,	*Sheldon, Ia.,*	C. E.
Burnett, Earle Smead,	*River Falls,*	M. E.
Burns, Joseph Patrick,	*Madison,*	C. E.
Burns, Louis Andrew,	*Madison,*	C. E.
Carter, Charles Edward,	*Milwaukee,*	E. E.
Cowley, Arthur William,	*Spokane, Wash.,*	E. E.
Crowe, Edward Lawrence,	*Marinette,*	E. E.
Drake, Eden William, Jr.,	*Milwaukee,*	G. E.
Edwards, Evan Cadwallader,	*Appleton,*	C. E.
Erwin, Orlando Richard,	*Milwaukee,*	E. E.
Fisher, Carey Carlton,	*Paw Paw, Ill.,*	E. E.
Forrester, Abraham Conway,	*Racine,*	C. E.
Graff, Christian Frederick,	*Madison,*	C. E.
Grant, Robert Lawrence,	*Milwaukee,*	M. E.
Hankinson, Ray Lyton,	*Evansville,*	G. E.
Heston, Charles Elisha,	*Brookings, S. D.,*	E. E.
Hillemeyer, Joseph Edward,	*Shullsburg,*	E. E.
Hofmann, Lothar,	*Ft. Wayne, Ind.,*	G. E.
Howland, Marvin Wyatt,	*Eagle Grove, Ia.,*	C. E.
Hoyt, Ray Stevens,	*Auburn, N. Y.,*	E. E.
Kimball, Frank William,	*Janesville,*	E. E.
Kowalke, Otto Louis,	*So. Kaukauna,*	C. E.

Larson, Clarence Melrose,	*Friday Harbor, Wash.,*	C. E.
McCabe, Charles William,	*Chicago, Ill.,*	C. E.
Moles, Edward Snetting,	*Madison,*	E. E.
Naramore, Floyd Archibald,	*Mason City, Ia.,*	M. E.
Neef, John Henry,	*Madison,*	C. E.
Page, Harry Willard,	*Baraboo,*	M. E.
Perry, Willard Newton,	*Algoma,*	E. E.
Potter, John Church,	*Wauwatosa,*	E. E.
Purple, Cullen Dean,	*Galesville,*	C. E.
Randall, Albert Edward,	*Omaha, Neb.,*	M. E.
Ritger, Arthur,	*Appleton,*	E. E.
Rogers, Paul Boleyn,	*Milwaukee,*	C. E.
Saunders, Walter Bowen,	*Madison,*	E. E.
Sexauer, John Arthur,	*Port Washington,*	E. E.
Smith, Walter Edward,	*Tiffany,*	C. E.
Stephens, Walter Hayward,	*Chicago, Ill.,*	M. E.
Sterling, Ely Dorr,	*New London,*	C. E.
Trester, Anthony Matthew,	*Sheboygan,*	C. E.
Wagner, Raymond Taber,	*Dubuque, Ia.,*	E. E.
Watkins, Charles Albert,	*Chicago, Ill.,*	M. E.
Wetmore, William Garfield,	*North Freedom,*	C. E.
Zimmerman, James Garfield,	*Milwaukee,*	E. E.

FIRST YEAR SPECIAL STUDENTS.

Allen, Maynard Edward,	*Indianapolis, Ind.*
Bacon, Homer Milton,	*Oshkosh.*
Birkland, Andrew Cornelius,	*Newark, Ill.*
Blackburn, Fred M.,	*Verona.*
Buchanan, John William,	*Livermore, Ia.*
Delgado, Alan Edgar,	*Kingston, Jamaica.*
Delgado, Altamont,	*Kingston, Jamaica.*
Edwards, John Prosser, Jr.,	*Milwaukee.*
Forrester, David Lawton,	*Racine.*
Helzer, Arthur Edmund,	*Madison.*
Hendrickson, William Oscar,	*Argyle.*
Hyslop, Robert Edward,	*Whitewater.*
Kuhlman, Howard Wilson,	*Madison.*
Larsen, James Herbert,	*Milwaukee.*
Leslie, Charles Edwin,	*Evanston, Ill.*
Rickman, Frederick Henry,	*Racine.*
Smith, William Hooper,	*Roland Park, Md.*
Strebel, John William,	*Madison.*

Thoresen, Thorgils,	*Milwaukee.*
Ward, Harry Irving,	*Madison.*

College of Law.

SENIOR CLASS.

Abercrombie, Charles Henry,	*Astoria, Ore.*
Adams, Harry Wilfred,	*Madison, Wis.*
Andrews, Samuel Edward,	*Hindsboro, Ill.*
Arnold, Frederick,	*Eau Claire.*
Avery, Louis Asa,	*Fond du Lac.*
Baldwin, Arthur Algernon,	*Marquette.*
Bandelin, Oscar John,	*Grand Rapids.*
Barber, Winchel Fay,	*Waukesha.*
Barney, John McHenry,	*West Bend, Wis.*
Beule, Arthur Franz,	*Beaver Dam.*
Blackburn, Arthur William,	*Madison.*
Bowler, George Joseph,	*Sparta.*
Buchanan, Hubert Daniel,	*Rio.*
Buchholz, William David,	*Whitehall.*
Burnham, Charles Lewis,	*Milwaukee.*
Casson, Henry, Jr.,	*Madison.*
Cochrane, John Merrill,	*Waupun.*
Cunningham, George Bernard,	*Rockbridge.*
Curtis, George Gregory,	*Madison.*
Danforth, George Jonathan,	*Omro.*
Dickinson, William Frederick,	*Rockford, Ill.*
Douville, George Christopher,	*West Allis.*
Driver, Sephus Earl,	*Madison.*
Edgar, Robert Allan,	*Crandon.*
Foulkes, William John,	*Oshkosh.*
Gibson, James Finley,	*Burnside, Ill.*
Graass, Henry,	*Sturgeon Bay.*
Griffith, Max Wilder,	*Milwaukee.*
Guipe, Harry Wilton,	*Chicago.*
Harvey, Richard Guille,	*Racine.*
Heller, George, Jr.,	*Sheboygan.*
Husting, Gustav Binsfield,	*Mayville, Wis.*
Jewett, Fred Dickson,	*Sioux Falls, S. D.*
Keith, Harry Page,	*New London.*
Kinney, George Francis,	*So. Kaukauna.*
Kuenzli, Otto,	*Milwaukee.*
Leicht, Herman,	*So. Germantown.*

Lueck, Robert William,	*Juneau.*
Luse, Claude Zeph,	*W. Superior.*
Lyle, John Thomas Stuart,	*Madison.*
Malone, John Albert,	*Burlington.*
McKee, Paul Robert,	*Madison.*
Merrill, Fred,	*Madison.*
Morgan, James Carlos,	*Hartford.*
Moseley, Wayne Thornton,	*Madison.*
Muckleston, Edward Milo,	*Waukesha.*
Murray, James,	*Waupun.*
Nelson, Louis Martinius,	*Stoughton.*
Pearce, Charles Sumner,	*Madison.*
Pray, Allan Theron,	*Stevens Point.*
Priestley, Thomas Mortimer,	*Madison.*
Purves, Charles L.,	*River Falls.*
Quammen, Louis J.,	*Deerfield.*
Richardson, Seth Whiteley,	*Ortonville, Minn.*
Riordan, Jeremiah Patrick,	*West Bend, Wis.*
Rosa, Charles Darwin,	*Madison.*
Schubring, Edward J. B.,	*Sauk City.*
Sedgwick, John Fordman,	*Whitewater.*
Stevens, John Charles,	*Milwaukee.*
Swan, George Brewster,	*Beaver Dam.*
Taylor, Charles Thomas,	*Wautoma.*
Teigen, Tore,	*Sioux Falls, S. D.*
Thompson, Carl N.,	*Sioux Falls, S. D.*
Udell, Clayton Elmore,	*Genoa Jct.*
Wehmhoff, Eugene John,	*Burlington.*
Wescott, Warde Arthur,	*Shawano.*
Wetzler, Fred,	*Milwaukee.*
Wilson, Simon Patrick,	*Northport.*
Winegar, George Lee,	*Morrison, Ill.*
Young, Evan Erastus,	*Plankinton, S. D.*

MIDDLE CLASS.

Binzel, Paul Marie,	*Madison.*
Blake, Chauncey Etheridge,	*Rockford, Ill.*
Bradley, Harry Ernest,	*Madison.*
Brooke, William Henry,	*Silver Lake.*
Currier, Louis Claire,	*Stoughton.*
Davis, Jay Chester,	*Aubrey.*
Davis, Morton Eugene,	*Milton.*

Davis, Robert Moses,	*Madison.*
Dunaway, Louis A.,	*Monroe.*
Earl, John Scott,	*Bear Valley.*
Evert, Lewis Magnus,	*Pewaukee.*
Faulk, Carl Fletcher,	*Madison.*
Fisher, Clarence Bennett,	*Madison.*
Fogg, Joseph Graham,	*Mt. Vernon, Ia.*
Frost, Robert Launitz,	*Mt. Vernon, N. Y.*
Frost, Walter Archer,	*Mt. Vernon, N. Y.*
Godwin, Cecil Thomas,	*Berlin.*
Green, Leroy M.,	*Cherry Valley, Ill.*
Haggerty, Raymond Jeremiah,	*Madison.*
Hayes, Harry Joseph,	*Eden.*
Heinemann, Fred Voelchert,	*Appleton.*
Hintze, Walter Charles,	*Stoughton.*
Lehner, Philip,	*Ackerville.*
Lennon, William Thomas,	*Hurley.*
Lovett, Charles Edward,	*Chilton.*
Marsh, Clarence Henry,	*Milwaukee.*
Masters, Harry John,	*Sparta.*
Mather, Israel,	*Milwaukee.*
McCormick, John A.,	*Superior.*
McFarland, James Garfield,	*Dubuque, Ia.*
McFarlane, J. Addison,	*Lodi.*
McNeel, James Herbert,	*Madison.*
Mueller, Arthur August,	*Milwaukee.*
Olbrich, Michael Balthasar,	*Lawrence, Ill.*
Partridge, John Clarence,	*Whitewater.*
Phelan, Edward Dennis,	*Bear Valley.*
Pickering, Ralph Clare,	*Superior.*
Reitman, Leo,	*Milwaukee.*
Rhodes, Alfred John,	*Galesville.*
Rice, Zelotus Sylvester,	*Sparta, Wis.*
Riemer, Robert Fred,	*Cecil.*
Rowan, Henry Charles,	*Reedsburg.*
Ryan, William,	*Lodi.*
Sawyer, John Flynn,	*Chicago, Ill.*
Smith, Charles Francis,	*Milwaukee.*
Smith, William Edward,	*Madison.*
Strehlow, Max Hugo,	*Bethany, Minn.*
Thompson, Charles Sumner,	*Milwaukee.*

Tracy, John Evarts,	*Crossville, Tenn.*
Tyrrell, David Franklin,	*Amberg.*
Woodruff, Frank Elisha,	*Rockford, Ill.*
Yager, Morris Evans,	*Madison.*
Zabler, Fred William, Jr.,	*Spring Prairie.*

JUNIOR CLASS.

Anderson, Albert,	*North Valley.*
Beckington, Ralph Edgar,	*Garden Prairie, Ill.*
Best, Ernest Oscar,	*Baraboo.*
Boardman, Charles Knight,	*Des Moines, Ia.*
Boyle, Alonzo Cook,	*McGregor, Iowa.*
Brown, John Sears,	*Sparta.*
Clarke, Ray Willis,	*Milton.*
Culver, William Wellington,	*Stevens Point.*
Detling, John Matthew,	*Sheboygan.*
Eberlein, Michael Gustave,	*Shawano.*
Fay, Frank Lockert,	*Prairie du Chien.*
Franzke, John Henry,	*Forest Junction.*
Freeman, Charles Rullin,	*Menomonie.*
Gardner, Harry Irving,	*Grand Rapids, Wis.*
Gilman, Charles Hesler,	*Neillsville.*
Gleason, John Lyman,	*Arcadia.*
Goodman, Isaac,	*Marinette.*
Haisler, Raymond,	*Milwaukee.*
Hardgrove, George Patrick,	*Madison.*
Heffron, John Thomas.	*Deadwood, S. D.*
Hopewell, Oscar Reeves,	*Tekamah, Neb.*
Hull, Harold Lester,	*Montello.*
Hyland, Francis Ross,	*Stoughton.*
Jaseph, Lynn Dole,	*Neillsville.*
Kent, Frank,	*Janesville.*
Krembs, Moritz Felix,	*Milwaukee.*
Kunny, John Charles,	*Fredonia.*
Lamberton, Frank Sylvester,	*Winona, Minn.*
Landesco, Alexander,	*Milwaukee.*
Leahy, Edward James,	*Marion, Ia.*
Leahy, Stephen James,	*Marshfield.*
Leahy, Thomas Edward,	*Platteville.*
Ludolph, Clarence August,	*Rock Island, Ill.*
Lurvey, Lawson Ellsworth,	*Oakfield.*

Lynch, William David,	*Oakes, N. D.*
Mangan, Douglas,	*Milwaukee.*
McGowan, Patrick Sarsfield,	*Kewaunee.*
McLees, Charles Erastus,	*Viroqua.*
Miller, John Calkins,	*Marinette.*
Mitchell, Charles Washington,	*Brodhead.*
Moffatt, William Francis,	*Davenport, Ia.*
Morgan, Frank Clinton,	*Humphrey, Neb.*
O'Brien, John Edward,	*Eden.*
Ogden, Guy Westcott,	*Waupaca.*
Paeschke, Charles Walter,	*Milwaukee.*
Palmer, Thomas Joseph,	*Milton.*
Powers, William Powers,	*Madison.*
Reichert, Harry Conrad,	*Milwaukee.*
Roberts, Allan John,	*Milwaukee.*
Rogers, Chester Garfield,	*Stevens Point.*
Rogers, Frank Horton,	*Ft. Atkinson.*
Rose, Earl Brown,	*Milwaukee.*
Runyard, Eugene Melvyn,	*Antioch, Ill.*
Sanderson, William,	*Wauwatosa.*
Schanen, William,	*Lake Church.*
Schoenfield, William David,	*Monroe.*
Schroeder, Baldwin,	*Guttenberg, Ia.*
Spiering, Edgar E.,	*Mayville.*
Steinmetz, Christian, Jr.,	*Milwaukee.*
Stolen, Ole Andrew,	*Mt. Horeb.*
Storms, William Wallace,	*Racine.*
Sullivan, Joseph,	*New London.*
Sweeney, Lloyd,	*Decatur, Ill.*
Thauer, Arthur Nicholas,	*Juneau.*
Vanderboom, Edward John,	*Marinette.*
Wheeler, Fred,	*Madison.*
Williams, George,	*Hastings, Mich.*
Yates, Frank Edwin,	*West Bend, Ia.*

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SPECIAL STUDENTS.

Garvin, John,	*Ashland.*
Haugen, Jermund O.,	*Stoughton.*
Hummel, Emil,	*Waterbury, Conn.*

Plummer, Lewis Lane,	*Arkansaw.*
Rotering, Nicholas Anton,	*Fountain City.*

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ADULT SPECIAL STUDENTS.

Anderson, Christian J.,	*Ogama.*
Basseuner, Otto Adolph,	*Sheboygan Falls.*
Mahoney, Henry,	*Madison.*

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STUDENTS IN COLLEGE OF LETTERS AND SCIENCE ELECTING LAW STUDIES.

Barry, Hamlet Joseph,	*Milwaukee.*
Beers, Leslie Weymouth,	*Rhinelander.*
Carpenter, Harry Fayette,	*Janesville.*
Corstvet, Alexander Oscar,	*Deerfield.*
Dougherty, James Francis,	*Lynden Station.*
Erickson, Oscar Gustav,	*Madison.*
Fish, Irving Andrews,	*Racine.*
Foelske, Henry Edward,	*National Home.*
Hagenah, William John,	*Madison.*
Hamilton, William George,	*Marinette.*
Hammersley, Charles Edward,	*Madison.*
Hoffman, Albert John,	*Broadfield.*
Johnson, Harry C.,	*Madison.*
Kasberg, Alexander,	*Madison.*
Laube, Herbert Davis,	*Brodhead.*
Lerum, Arne Christopher,	*Cottage Grove.*
Ludlow, Leo de Ruche,	*Madison.*
Minahan, Eben Roger,	*Green Bay.*
Pullen, Lloyd Winston,	*Milwaukee.*
Roethke, Adolph Herman,	*Chilton.*
Ross, Samuel Crawford,	*Mineral Point.*
Sargent, Frank Byron,	*Seymour.*
Sprecher, John Henry,	*Independence.*
Stephenson, Robert George,	*Marinette.*
Stone, Charles Henry,	*Reedsburg.*
Trump, Roger Murphy,	*Milwaukee.*
Van Orden, Lucas Schuyler,	*Baraboo.*

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College of Agricultnre.

LONG COURSE.

Beckenstrater, Herman,	*Madison,*	Special 4.
Brindley, Thaddeus Hayward,	*La Crosse,*	Freshman.
Davis, Llewellyn Rhys,	*Madison,*	Special 3.
Fowler, Harry King,	*Madison,*	Freshman.
Fuller, James Garfield,	*Waterman, Ill.,*	Junior.
Henry, Arnon Taylor,	*Madison,*	Freshman.
Hoffman, Conrad,	*Phillips,*	Freshman.
Hulburt, Judson Farrar,	*Wauwatosa,*	Freshman.
Jarvis, John Demos,	*La Crosse,*	Sophomore.
Jones, Edward Richard,	*Bangor,*	Freshman.
Jordan, Elbert Lewis,	*Berlin,*	Junior.
Kayser, Christian Roman,	*Madison,*	Freshman.
Knobel, Fred Henry,	*Madison,*	Junior.
Mahoney, William John,	*Blue Mounds,*	Freshman.
McDowell, John Chambers,	*Madison,*	Senior.
McLean Amzi Chapin,	*Eatontown, N. J.,*	Junior.
Meller, Charles Louis,	*Milwaukee,*	Junior.
Meyer, Arthur John,	*Milwaukee,*	Adult Special 1.
Miller, Thomas Ezekiel,	*Orangeburg, S. C.,*	Special 2.
Morton, George Edwin,	*Madison,*	Special 3.
Notz, Mark Charles,	*Watertown,*	Sophomore.
Parsons, William Amos,	*Whitewater,*	Freshman.
Pickhardt, Paul,	*Milwaukee,*	Adult Special 1.
Prien, Otto Louis,	*Madison,*	Special 2.
Richards, William Bonner,	*Racine,*	Senior.
Schroeder, Christ,	*Kewaunee,*	Freshman.
Starke, Conrad Godlief,	*Milwaukee,*	Senior.
Thorkelson, Carl Edward,	*Racine,*	Freshman.
Uehling, Otto Louis,	*Richwood,*	Sophomore.
Vallejo, Carlos Arcadio,	*La Rioja, Arg. Rep.,*	Junior.
Wallin, Allgot,	*Chicago, Ill.,*	Sophomore.
Wallin, Oscar King,	*Prairie du Chien,*	Freshman.

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SHORT COURSE.

Second Year.

Ames, Ernest Raymond,	*Gilmantown.*
Arries, Berl Mansfield,	*Merrill.*
Austin, Clifford Parmley,	*Janesville.*
Batten, Sidney Earl,	*Cobb.*

Beirne, George Iven,	*Oakfield.*
Bonzelet, John Paul,	*Eden.*
Boris, Philip Rufus,	*Marengo, Ill.*
Boss, Samuel John, Jr.,	*Oshkosh.*
Brohaugh, George,	*Esdaile.*
Brown, Charles Raymond,	*Eau Claire.*
Bundy, Andrew,	*Peshtigo.*
Bunting, Orlando Harvey,	*La Crosse.*
Cherovsky, Julian Leonidas,	*Kewaunee.*
Clendenning, Harry Vair,	*Brodwardine, Man., Can.*
Clow, Alexander Denovan,	*Madison.*
Conant, Walter Aiken,	*Boston, Mass.*
Cross, Arthur James,	*Allenville.*
Dickson, Allan Herbert,	*Elk Mound.*
Dillie, Forrest George,	*Oakfield.*
Dittwiler, Arnold Joachim,	*Monroe.*
Doerfer, Carl Fred,	*Madison.*
Duff, William Lewis,	*Fayette.*
Dufner, Gottlieb Henry,	*Fennimore.*
Elfers, David Garrett,	*Richmond, Ill.*
Ellingson, Frank Theodore,	*Capron, Ill.*
Erickson, Arthur John,	*Stetsonville.*
Fischer, Felix Carl,	*La Crosse.*
Fischer, Oswald Otto,	*Jefferson.*
Floyd, Garry Ellis,	*Eureka.*
Frelich, Frank George,	*Kewaunee.*
Grover, Wilbur Arthur,	*Ridgeland.*
Gysbers, James,	*Waupun.*
Haight, Bert,	*Cambridge.*
Halbert, Jay Heaton,	*Augusta.*
Hancock, Judson Edward,	*Harvard, Ill.*
Hanzlik, Otto John	*Hillsboro.*
Harris, Sidney,	*Nepskining.*
Hartsough, Arthur Le Roy,	*South Wayne.*
Heffron, John,	*Hudson.*
Heuer, Edward Fred,	*Wautoma.*
Hillier, Byron Swift,	*Waunakee.*
Holcomb, Willis Roy,	*Concord.*
Holzworth, Robert Benjamin,	*Farmington.*
Jackson, James A., Jr.,	*Madison.*
Jacobson, Anton,	*Menomonie.*

Jahn, Charles,	*Alma.*
Jahnke, Julius Frank,	*Pepin.*
Jaquish, James Edward,	*Ithaca.*
Jewell, Frederick Arthur,	*Dodgeville.*
Johnson, Bert,	*Viroqua.*
Johnson, Hans Christian,	*Deerfield.*
Jung, August Ernest,	*Randolph.*
Kieffer, Michael,	*Fredonia.*
Knecht, Andrew,	*Waumandee.*
Koll, Charles Artemas,	*Eau Claire.*
Kundert, Edward,	*Monroe.*
Larson, Walter Bert,	*Ogdensburg.*
Lauderdale, Sylvanus J.	*Elkhorn.*
Logan, James William,	*Stanley.*
Loomis, Charles Warren,	*Wauwatosa.*
Lorentzen, Adolph Emil,	*Stanton.*
Lyman, Webb Searle,	*Rosendale.*
Marchant, Joe Leroy,	*Lorendale.*
Marsden, John Riley,	*Fennimore.*
Matson, Hakon,	*Oregon.*
McCabe, Charles Henry,	*Fountain City.*
McLees, Adam,	*Viroqua.*
Menne, John,	*New Franken.*
Merritt, Loren Alembert,	*Mondovi.*
Miller, Isaac Leslie,	*Livingston.*
Morris, Owen George,	*Dousman.*
Murphy, Daniel Edward,	*Carleton.*
Mutschmann, August Leo,	*Boscobel.*
Nelson, James,	*Waupaca.*
Nelson, John Newton,	*Fennimore.*
Nelson, Merrill Leach,	*Rubicon, Wis.*
Nichols, James Vernon,	*Walworth.*
Osborne, William Francis,	*Cobb.*
Pattison, Thomas James,	*Tarrant.*
Peterson, George Adolph,	*Menomonie.*
Purdy, William Nelson,	*Bangor.*
Robinson, Maxwell Curtis,	*Selma, Cal.*
Rood, Minick Charley,	*South Wayne.*
Rosenow, Henry Edward,	*Oconomowoc.*
Rosenow, Henry Gustave,	*Montana.*
Rundell, Homer Fruit,	*Livingston.*

Sampson, Julius,	*Menomonie.*
Schottler, Conrad Jacob,	*South Germantown.*
Sette, Edwin Otto,	*Juneau.*
Sharpe, Peder A.,	*Rio.*
Sirett, William Flowers,	*Glendale, Man., Can.*
Slosser, George Bertram,	*Black River Falls.*
Slosser, John Archie,	*Black River Falls.*
Smith, Frank Benjamin,	*Stitzen.*
Snyder, Burt Frederick,	*Wonewoc.*
Sprague, George Dayton,	*Madison.*
Stark, Frank,	*Randolph.*
Starke, Ernest Frederick W.,	*Milwaukee.*
Starke, Christian Henry,	*Milwaukee.*
Stewart, John Rutherford,	*Verona.*
Stewart, Robert Lyle,	*Bloomington, Ill.*
Swan, Leon,	*Waupaca.*
Thayer, Wilfred Russell,	*Whitewater.*
Thom, Edwin Gardiner,	*Millburn.*
Utermark, Carl Johann Theodor,	*Somerset.*
Watkins, Harry Albert,	*Edmund.*
Williams, David Williams,	*Oshkosh.*
Williams, John Robert,	*Packwaukee.*
Works, Arthur Garfield,	*Augusta.*
Wright, Tim Jay,	*Mauston.*
Wyman, Arthur Eugene,	*Eau Claire.*
Young, Frederick Thomas,	*Delafield.*
Zahrt, Frank Henry,	*Hortonville.*

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First Year.

Aderhold, Herman F.,	*Colby.*
Anderson, Oscar Arthur,	*Chetek.*
Atwood, Melvin Lee,	*Roscoe, Ill.*
Bale, Robert Oscar,	*Augusta, N. J.*
Ball, LeRoy C.,	*Monroe.*
Beck, Bruno Peter,	*Jefferson.*
Behrens, Bernhard Fred Charles,	*Grafton.*
Beitler, Fred Charles,	*Ft. Atkinson.*
Beneditz, George Albert,	*Minnesota Jct.*
Benson, Mary Estella,	*Milwaukee, Wis.*
Bourret, Floyd,	*Livingston.*
Brewer, Bert Foote,	*Berlin.*

Bristol, Abel Carter,	*Oakfield.*
Brunner, Martin George,	*Kellnerville.*
Byron, John James,	*Appleton.*
Christensen, Johan Fredrik,	*La Crosse.*
Christianson, Oscar,	*Cambridge.*
Conrad, Laura Francis,	*East Bristol.*
Connell, Wesley Francis,	*Colgate.*
Coon, Elam Potter,	*Utica.*
Corneliuson, Thomas,	*Cooksville.*
Courter, Robert David,	*Hinsdale, Ill.*
Crow, Robert Ray,	*Monroe.*
Cushman, Earl Burt,	*Rewey.*
Daellenbach, Christian,	*Dorchester.*
Dahl, Robert M.,	*York.*
Davis, Frederick, Jr.,	*Briggsville.*
Dickerson, George Albert,	*Augusta, N. J.*
Donaldson, Ernest Aubrey,	*Eau Claire.*
Drecktrah, William,	*La Crosse.*
Dreger, Emil Louis,	*Madison.*
Dudleston, Claude,	*La Valle.*
Duffield, Walter Millard,	*Milwaukee.*
Dunbar, Fred,	*Olympia, Wash.*
Edwards, William Charles,	*Cambria.*
Ellickson, Alfred Carl,	*Cambridge.*
Ellickson, Arthur Christ,	*Cambridge.*
Elliott, Lewis R.,	*River Falls.*
Ellsworth, Earnest Hutchins,	*Livingston.*
Ellsworth, Eastman D.,	*Livingston.*
Emery, George Quincy,	*Stoughton.*
Emery, Lyman Joseph,	*Oconomowoc.*
Erickson, Jalmar Henry,	*Hadleyville.*
Evans, Thomas H.,	*Wales.*
Evans, William Harvey,	*Wales.*
Farnan, Ernest,	*Stephensville.*
Fiegel, Benjamin,	*Hancock.*
Finner, William August,	*Arcadia.*
Forsythe, John,	*Oconomowoc.*
Fox, Henry Thomas,	*Durand.*
Frohmader, Charles Gilbert,	*Oakdale.*
Fruit, Clyde Everett,	*Livingston.*
Garbers, August,	*La Crosse.*

Gay, Leonard W.,	*Madison.*
Gilbert, Eli C.,	*Sturgeon Bay.*
Gleason, Gilbert Monroe,	*Madison.*
Goodell, Alfred, Jr.,	*Reedsburg.*
Griswold, Theodore Edwin,	*Livingston.*
Haunschild, Louis Gustave,	*Mondovi.*
Hansen, Albert Franklin,	*City Point.*
Harte, Charles Herbert,	*Madison.*
Hartman, Andrew,	*Whelan.*
Hatch, Lewis,	*Oakfield.*
Hatfield, Lyle Henry,	*Evansville.*
Hebard, Vern Dale,	*Waupaca.*
Hembrook, Fred Henry, Jr.,	*Waterford.*
Hesselberg, Arthur Edward Benj.,	*Rockland.*
Holman, Ross Elmer,	*Waupaca.*
Homuth, C. Charles,	*Mt. Sterling.*
Hoopes, Robert Darlington,	*Bynum, Md.*
Howitt, Charles Harrison,	*Randolph.*
Howland, Howard H.,	*Waupun.*
Jackson, Joe Fisher,	*Maryville, Mo.*
Jackson, Oscar Edward,	*Stockholm.*
Jacobson, Henry Oscar,	*Cambridge.*
Jeffery, Harvey Bertram,	*Colgate.*
Johnson, Carl John,	*Ettrick.*
Johnson, Charles Toan,	*Snoqualmie, Wash.*
Johnson, Kasper,	*Blair.*
Johnson, Louie,	*Sturgeon Bay.*
Johnston, George Galloway,	*Waupun.*
Jones, Albert,	*Dousman.*
Kendall, Vernon Floyd,	*Waupaca.*
Kent, Joseph Sherburne,	*Rusk.*
Kierstead, Irwin Allison,	*Oregon.*
Kilby, Otis Warrington,	*Wheeler.*
Kitchen, Joseph Henry,	*Eldorado.*
Klovdahl, John,	*Wittenberg.*
Kohlwey, Otto Frederick,	*Grafton.*
Kolar, Frank Joe,	*Muscoda.*
Lindas, Theodore Aaron,	*Marshall.*
Linker, William John,	*Hartford.*
Lloyd, Eram Baldwin,	*Cambria.*
Lobdell, Harvey Ross,	*Mukwonago.*

Logan, Ralph Gates,	*Greenfield, Ind.*
Markey, William E.,	*Sullivan.*
McCarthy, Patrick Henry,	*Brownsville.*
McConnell, Robert Elmer,	*Walworth.*
McKay, Lawrence Edward,	*Chippewa Falls.*
Mackie, Edwin Evan,	*Picketts.*
Mader, Harvey Fred,	*Cadott.*
Mair, Charles Andrew,	*Poynette.*
Malde, Ole Gustav,	*Durand, Ill.*
Michelet, Wilhelm John,	*Westby.*
Miles, Ira Dixon,	*Taylor.*
Mills, Stephen,	*Springville.*
Minnick, Hugh Lambert,	*Baraboo.*
Moen, George Oliver,	*Cambridge.*
Morgan, Hiram,	*Chicago, Ill.*
Morhous, Floyd Ridckerson,	*Sun Prairie.*
Mortimer, Abraham,	*Withee.*
Mutch, Spencer Stuart,	*Elroy.*
Nelson, Ole Andre,	*Cumberland.*
Nelson, Edward James,	*Fennimore.*
Ness, Christopher Eric,	*Urne.*
Nevens, Clarence Hunter,	*Winnebago, Ill.*
Nolen, Ora John,	*Rewey.*
Nye, Ernest Jonathan,	*Appleton.*
Ogilvie, Robert,	*Verona.*
Ogle, James Liguori,	*Waldo.*
Oleson, Arthur Otto,	*Livingston.*
Oliver, Albert,	*Galesville.*
Olson, Nalvin Albert,	*Chetek.*
Otto, Herbert,	*Sun Prairie.*
Partridge, Harry Charles,	*Cross Plains.*
Paulson, John Norman	*Manitowoc.*
Peterson, Charles Albert,	*Orange.*
Pope, Nathaniel, Jr.,	*Waupaca.*
Portz, Albert,	*Waukesha.*
Poston, Genral Fran Seigle,	*Knapp.*
Ray, Henry Kellogg,	*Kewaunee, Ill.*
Renk, Mary Katharina,	*Sun Prairie.*
Rheingans, Ernest Conrad,	*Chippewa Falls.*
Richardson, Albert Leroy,	*Wyoming.*
Richardson, Leonard C.,	*Oregon.*

Richter, Bernard Fred,	*Chippewa Falls.*
Robbins, William Hunt,	*Springfield, Ohio.*
Rosenow, Louis John,	*Montana.*
Rowntree, Charles Christopher,	*Rochester.*
Saxe, Arthur Eilbur,	*Whitewater.*
Schaefer, Ernest August,	*Neenah.*
Schafer, Charles Herman,	*Duplainville.*
Schreiber, Robert,	*Fall River.*
Scott, William Francis, Jr.,	*Port Washington.*
Scribner, Roy Milton,	*Rosendale.*
Seidel, Walter,	*Milwaukee.*
Semb, Thor Andrew,	*Erly.*
Severson, Samuel Gerhard,	*Cambridge.*
Skalitzky, Frederick James,	*Sun Prairie.*
Skowlund, James Henry,	*Marinette.*
Slaby, Edward George,	*Kewaunee.*
Smith, Clinton Eldon,	*Orfordville.*
Spooner, Carleton Maynard,	*Orange.*
Starker, Charles,	*Sun Prairie.*
Starnge, Daleton Montgomery,	*Grand Ledge, Mich.*
Stonhouse, Thomas Dickenson,	*Glendale, Can.*
Strader, Earl Walter,	*Augusta.*
Strate, Archie,	*Neenah.*
Taylor, Willard Osgood,	*Mauston.*
Thiel, Alfred,	*Viroqua.*
Thielke, Edwin Arthur,	*School Hill.*
Thomas, Henry,	*Wausaukee.*
Thompson, Chester,	*New London.*
Thompson, John Clayton,	*Poynette.*
Thompson, Theodore,	*Curtiss.*
Thuerwachter, Alvin Michael,	*Calumetville.*
Tiedebohl, Theodore Cook,	*Chicago, Ill.*
Tiffany, George Eli,	*Melrose.*
Toole, William Alexander,	*Baraboo.*
Torrey, William Earl,	*Hebron.*
Tracy, Ernest Eugene,	*Wonewoc.*
Truesdale, Thomas Sterling,	*Gillingham.*
Tuttle, Harry Lee,	*Knapp.*
Utley, Marshall,	*Oxford.*
Vraney, Emil,	*Branch.*
Waite, Earl Lamar,	*Oshkosh.*

Walworth, Roy Harwood,	*Mazon, Ill.*
West, John Benjamin,	*Whitewater.*
Wheeler, Carl S.,	*Reno, Nev.*
Williams, Arthur Richard,	*Waukesha.*
Wiliams, Elias Robert,	*Bangor.*
Williams, Jesse Elmore,	*Lancaster.*
Williams, Melvin Grant,	*Potosi.*
Woodcock, Edward R.,	*Collins.*
Wrabetz, Frank,	*Kewaunee.*
Zimmerman, Fred David,	*Jordan.*

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Dairy Course.

SECOND YEAR.

Greenwood, Ernest Albert,	*Quincy.*

FIRST YEAR.

Bartelt, Frederick William,	*Farmington.*
Battes, Peter Charles,	*Clintonville.*
Biddle, Garfield Arthur,	*Eagle, S. D.*
Birge, Louis John,	*Horicon.*
Birge, Mrs. Mable Alcott,	*Horicon.*
Boies, Arthur Fred,	*Boardman.*
Boies, Ernest Earl,	*Osceola.*
Boll, Charles Ernest,	*Platteville.*
Bonick, George Emilo,	*Manawa.*
Brandt, August,	*Forestville.*
Breit, John Charles,	*Stanley.*
Brucken, Cornelius,	*Lone Rock.*
Chaplin, Earl Wilbur,	*Plymouth.*
Christensen, Christen,	*Racine.*
Coulson, Edgar Hymen,	*Grafton.*
Davis, Ernest Lee,	*Spring Green.*
Diekvoss, Benjamin John,	*Forest Jct.*
Drews, Frank Gustav,	*Lowell.*
Eichinger, Joseph John,	*Maplewood.*
Elliot, Richard Anthony,	*Desboro, Ont., Can.*
Emmerich, Martin Bernard,	*Emmerich.*
Fargen, Mathew Michael,	*Sandusky.*
Feine, Conrad Henry John,	*Hart, Minn.*
Felton, Mike,	*Seymour.*
Frank, Fred Henry,	*Chili.*

Franzen, Herman R.,	*Rozellville.*
*Frelich, Wenzel John,	*Carlton.*
Galloway, George,	*Halder.*
Gehrke, Fred Julius,	*Manawa.*
Gerry, Alva Clint,	*Eau Galle.*
Gilbert, Henry Ebenezer,	*Osseo.*
Gilson, Lyell Francis,	*Chicago, Ill.*
Goldenpenning, Fred William,	*Georgetown.*
Greene, Frank Dwight,	*Walworth.*
Grim, Orlando,	*Sylvan.*
Guelzow, August,	*Oakfield.*
Haberstich, August Carl,	*Hanover.*
Halverson, Harvey J.,	*Eleva.*
Hanan, George Fred,	*Mondovi.*
Hanson, Carl Johan,	*Northfield.*
Hanson, Edward,	*Deer Park.*
Hartinson, Jacob Christian,	*Menomonie.*
Hartman, Edward,	*Chippewa Falls.*
Hazen, Leslie,	*Eastman.*
Hein, August Martin,	*Tigerton.*
Hendrick, Frank Charles,	*Manawa.*
Herold, Joe John, Jr.,	*Branch.*
Hoerl, Siegmund,	*Brothertown.*
Hutchinson, Preston Judson,	*Gilmanton.*
Jarvis, Arthur Clay,	*Indianola.*
Jennings, Nile, Jr.,	*Viola.*
Jung, Joseph,	*Kohler.*
Kaye, Claude,	*Boyceville.*
Kittleson, Carl Ledwig,	*Ettrick.*
Klineshay, John Ernest,	*Elmore.*
Knaack, Emil Willis,	*Rusk.*
Knack, Gust Julius,	*Princeton.*
Koch, Edward Lester,	*New Lisbon.*
Koenig, Max Oscar,	*Stettin.*
Koopman, Albert Charles F., Jr.,	*Port Washington.*
Korow, Edward,	*De Forest.*
Koutsy, Louis,	*Kolberg.*
Kramer, David Tressler,	*Edgerton.*
Langer, John Kubert,	*Pierz, Minn.*

*Deceased.

Larsen, Martin,	*Frazer.*
Lehman, George,	*Juneau.*
Lewis, John Warren,	*Janesville.*
Lundsted, Oscar Daniel,	*Pigeon Falls.*
McVay, Alva Joseph,	*Muscoda.*
Matson, Emil,	*Oregon.*
Meredith, Delos Bronson,	*New Lisbon.*
Miller, Carl,	*West Denmark.*
Miller, Edward Oscal,	*Appleton.*
Miller, George Henry,	*Jefferson.*
Moldenhauer, Albert J.,	*Theresa.*
Muehleisen, Gottlieb,	*Herold.*
Nosovitch, Isaac Harry,	*Seattle, Wash.*
O'Keefe, Ray John,	*Custer.*
Olm, Oscar,	*Hayton.*
Olson, Mathias John,	*Medford.*
Paff, George,	*Allerton.*
Pasche, Charles August,	*Medford.*
Perry, Casper Le Roy,	*Berlin.*
Puener, Arthur Grant,	*Stoughton.*
Radcliff, William Henry,	*Bancroft.*
Radke, Henry August,	*Houlton.*
Raeder, Mary A.,	*Milladore.*
Rasmussen, Charles,	*Marion.*
Ritzke, Joseph,	*Jericho.*
Rudersdorf, Louis L.,	*Fennimore.*
Rugotzke, Charles,	*Montello.*
Roeder, Reinhold,	*Wausau.*
Row, Edward Albert,	*Seymour.*
Roycraft, Arthur James,	*Chippewa Falls.*
Rusch, Albert Julius,	*Thorpe.*
Ryder, Ralph Clinton,	*Menomonie.*
Sass, Charles Samuel,	*Rubicon.*
Saugen, Joseph Nickoly,	*Cleghorn.*
Schlosser, Frank Leo,	*Weston.*
Schlosser, Jake,	*Spring Green.*
Schripke, Antony,	*Halder.*
Schwichtenberg, William,	*Sawyer.*
Scott, Victor Martin,	*Stockbridge.*
Simon, Maximillin Nicholas,	*Neenah.*
Sixel, Herman G.,	*Mosel.*

Sonnebend, Henry Robert,	*Collins.*
Stewart, Gilbert Milo,	*Mazomanie.*
Stewart, Hiram Harvey,	*Vernon.*
Stiehm, Louis Frederick,	*Johnson Creek.*
Tarun, Walter Felix H.,	*Atwater.*
Thiry, Jule Joseph,	*Lincoln.*
Thomas, Thomas David,	*Auroraville.*
Townsend, Even Cassius,	*Waupaca.*
Turba, Michael Englebert,	*Chilton.*
Volkening, Chris. Henry,	*Platteville.*
Wach, Charles,	*Oconto Falls.*
Wagner, Mathias,	*Chippewa Falls.*
Ward, George Ernest,	*Ft. Atkinson.*
Waterstreet, Rhyne A.,	*Kewaunee.*
Watson, Frank,	*Almond.*
West, Wallace Nelson,	*Christie.*
Whitney, Fred Strause,	*Spring Brook.*
Winkler, Robert,	*North Lake.*
Woodstock, Archie Eugene,	*Lima.*
Zyche, John,	*Timothy.*

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SUMMER SESSION OF 1902.

Graduates.

Ahnefeldt, Helen Josephine A. B., University of Michigan, *Grand Rapids, Mich.*
History, Greek.

Anderson, Fannie Parker, B. S., Upper Iowa University, LL. B., State University of Iowa. *Postville, Ia.*
History, Latin.

Anderson, William Ballantyne, B. S., University of Wisconsin, *Madison.*
Mathematics, Physics.

Baird, Ethel Caroline, B. S., Oberlin College, *Bloomer.*
English, Psychology.

Beck, Edith Tully, A. M., Leland Stanford University, *Indianapolis, Ind.*
English, History.

Black, Homer Van Valkenburg, Ph. D., Johns Hopkins University, Chemistry. — *Atlanta, Ga.*

Bonander, Linus, A. M., Augustana College, English, Greek, Pedagogy. — *Wahoo, Neb.*

Bond, Earl Danford, A. B., Harvard University, Latin. — *St. Paul, Minn.*

Bouska, Frank William, M. S. A., Iowa State College, Bacteriology, Botany, French. — *Protivin, Ia.*

Bowen, Florence, A. B., University of Michigan, English, History. — *Pleasanton, Tex.*

Bramhall, Edith Clementine, Ph. D., University of Pennsylvania, History. — *Michigan City, Ind.*

Brown, Oliver W., A. M., Indiana University, Chemistry. — *Bloomington, Ind.*

Bruner, Matilda Elizabeth, B. S., Drake University, Chemistry. — *Des Moines, Ia.*

Bryning, Pearl Grace, A. B., University of Chicago, German, Latin. — *Madison.*

Burton, Anna Livingston, B. S., University of Wisconsin, Chemistry. — *Livingston.*

Bussewitz, Maxillian Alfred, A. M., University of Wisconsin, Psychology, Pedagogy, Philosophy. — *Milwaukee.*

Cavanaugh, Abigail Emma, B. L., University of Wisconsin, Economics, English. — *Shullsburg.*

Chesney, Emma, A. M., University of Michigan, German, Pedagogy, Latin. — *Bangor.*

Churchill, Herman, A. M., University of Wisconsin, History. — *Madison.*

Clemons, William Voltaire, Ph. B., University of Wisconsin, *Madison.*
Mathematics, Philosophy.

Clum, George Victor, A. B., Ohio State University, *Earlville, Ill.*
Economics.

Cox, Isaac Joslin, A. B., Dartmouth College, *San Antonio, Tex.*
History, German.

Dorset, Helen, A. B., Leland Stanford University, *La Crosse.*
Latin.

Edquist, Joshua Anderson, A. M., Augustana College, *St. Peter, Minn.*
Botany, Zoology.

Elliott, Howard Martin, A. B., Olivet College, *Holt, Mich.*
History.

Elwood, DeWitt, B. S., Lawrence University, *Dodgeville.*
Phychology, Philosophy, Pedagogy.

Farly, John Hubert, Ph. B., Lawrence University, *Merton.*
Psychology, Philosophy.

Fehlandt, August Frederick, A. B., University of Wisconsin, B. D., Yale University, *Lone Rock.*
Bacteriology, Chemistry.

Filbey, Edward Joseph, Ph. B., Lawrence University, *Oakfield.*
German, Greek.

Flodman, Julius Hjalmar, A. M., Augustana College, *Wahoo, Neb.*
Mathematics, Physics.

Francisco, Lucy, A. M., Earlham College, *Richmond, Ind.*
German.

Gabel, George Herman, B. L., University of Wisconsin, *Milwaukee.*
Political Science, History.

Gage, Florence Meta, M. S., University of Wisconsin, *Madison.*
English.

Gapen, Flora, B. S., University of Wisconsin, *Madison.*
English, Mathematics, Physiography.

Godard, Grace Ginerva, A. B., University of Wisconsin, *Yorkville, Ill.*
English, Pedagogy, Philosophy, Latin.

Goodell, Kate Louise, B. L., University of Wisconsin, *Viroqua.*
Latin, German, English.

Gould, George Winfield, A. B., University of Denver, *Telluride, Col.*
Economics, Pedagogy, English.

Graham, Grace, B. L., University of Wisconsin, *Tomah.*
Latin.

Graham, James Blaine, A. B., University of Wisconsin, *Roberts.*
Psychology, Pedagogy, English.

Green, John Wilbur, B. S., Upper Iowa University, *Sioux City, Ia.*
Physics, Chemistry,

Griffin, James Sheldon, A. M., Abingdon College, *Houghton, Mich.*
German, History.

Gurnee, Inez Ellen, A. B., Leland Stanford University, *Appleton.*

Haffner, Netta Wilhelmine, B. S., University of Michigan, *Sturgis, Mich.*
German.

Harrison, Frederick Arthur, Ph. B., University of Wisconsin, *Fox Lake.*
Physics.

Hasse, August Frederick, B. L., University of Wisconsin, *Wauwatosa.*
Pedagogy, Botany.

Hogue, Maud Irene, Ph. B., Grand Island College, *Grand Island, Neb.*
History, Latin.

Homburg, Fred, B. S., University of Cincinnati, *Cincinnati, O.*
Chemistry, Physics, Mathematics, Bacteriology.

Jefferson, Lorian Pamelia, B. L., Lawrence University, *Menomonie.*
German, Latin.

Jones, David Rhys, A. B., University of Wisconsin, *Escondido, Cal.*
Pedagogy.

Kaye, Mary Gertrude, B. L., Upper Iowa University, *Calmar, Ia.*
English.

Kimmons, May, A. B., Oberlin College, *Findlay, O.*
History, Latin.

King, Bessie Susan, B. L., University of Wisconsin, *Neillsville.*
Greek.

Kittle, William, Ph. B., University of Wisconsin, *Oconomowoc.*
French, History.

Lundquist, Gustaf Adolph, A. B., Gustavus Adolphus College, *St. Peter, Minn.*
English, Latin, Political Science, Pedagogy,

Magnusson, John Peter, A. M., University of Minnesota, *St. Peter, Minn.*
Botany, Physics, Physical Chemistry, Pedagogy.

Mason, Agnes May, Ph. B., University of Michigan, *Streator, Ill.*
German.

McChesney, Alice Ross, B. S., Lawrence University, *Janesville.*
Mathematics, Botany.

McKenny, Charles, A. M., Olivet College, *Milwaukee.*
Psychology, Pedagogy, Philosophy.

McNally, Eva, B. L., Lincoln College. *Emporia, Kan.*
English

Merrill, Roy, Ph. B., Lawrence University, *Appleton.*
German.

Miller, Grace Elizabeth, B. S., Milton College, *Janesville.*
Pedagogy, Philosophy.

Moseley, Anna Burr, A. M., University of Wisconsin, *Madison.*
Latin.

Moseley, Flora Carolina, B. L., University of Wisconsin, *Madison.*
English.

Nunn, Janet Hume, B. L., University of Minnesota, *Minneapolis, Minn.*
German.

O'Connor, Lenore Frances, B. L., University of Wisconsin, *Madison.*
English, Botany.

Oliver, Elmer Rufus, A. B., Ripon College, *Waupun.*
English, Physics.

Osborne, James Harvey, A. M., Wabash College, *Crawfordsville, Ind.*
History, Economics.

Pardee, Neely Eugene, B. L., University of Wisconsin, *Wausau.*
English, Spanish.

Patten, Edith Sylvia, Ph. B., University of Wisconsin, *De Kalb, Ill.*
History, English.

Peterson, Harold Stuart, A. B., University of Wisconsin, *Delafield.*
Greek, French, Insurance.

Pray, Carl Esek, B. L., Olivet College, *Milwaukee.*
History.

Raymer, John Wesley, B. S., University of Wisconsin, *Streator, Ill.*
Chemistry.

Reed, George Matthew, A. B., Geneva College, *College Springs, Ia.*
Botany, Anatomy.

Reed, Mary Agnes, B. S., Amity College, *College Springs, Ia.*
English, History.

Richardson, Helen Belknap, A. B., Tulane University, *Madison.*
History.

Rissman, Edward, Graduate of Carlsruhe Gymnasium, Berlin, Germany, *Milwaukee.*
Latin.

Roney, Katharine, B. S., University of Minnesota, *Independence, Ia.*
Mathematics.

Schafer, Joseph, M. L., University of Wisconsin, *Eugene, Ore.*
Political Science, History, Commerce.

Schule, Frederick William, Jr., B. S., University of Wisconsin, *Chicago, Ill.*
Geology, German, Latin.

Schuster, Otto John, B. S., University of Wisconsin, *Neenah.*
Physics.

Spain, Charles Lyle, A. B., University of Michigan, *Detroit, Mich.*
Pedagogy.

Spaulding, Grace Pratt, A. B., Milton College, *Milton.*
History, Greek.

Taylor, Henry Charles, M. S., Iowa State College, *Madison.*
History.

Thomson, Alva Allen, Ph. B., University of Wisconsin, *Madison.*
Psychology, Pedagogy, Geology.

Tuttle, Alonzo Hubert A. B., University of Michigan, *Columbus, O.*
History.

Vandervort, Charles Rollin, A. B., Eureka College, *Peoria, Ill.*
History, Economics, Philosophy, Pedagogy.

Van Horn, Frederic Milo, A. B., University of Wisconsin, *Madison.*
Pedagogy, Latin.

Verplanck, Helen Gertrude, B. L., University of Wisconsin, *Madison.*
History, Latin.

Vivian, William Albert, B. L., University of Wisconsin, *West Superior.*
Botany.

Vorheis, Charles Taylor, B. S., Iowa Wesleyan University, *Mt. Pleasant, Ia.*
Botany, Anatomy.

Warner, Fanny, B. L. University of Wisconsin, *Windsor.*
German, Latin.

Warriner, Helen Haskell, B. L., University of Wisconsin, *Portage.*
Latin, English, German.

Way, Royal Brunson, Ph. M., University of Michigan, *Saginaw, Mich.*
History.

Wenner, Frank, B. S., Knox College. *Madison.*
Chemistry, Mathematics.

Wilcox, Guy Maurice, A. B., Carlton College, *Madison.*
Physics, Chemistry.

Willis, Katherine Glen, A. B., Des Moines College, *Des Moines, Ia.*
Latin, French.

Winden, Julius, Ph. B., University of Wisconsin, *Monroe.*
History.

Winkler, Ernest William, A. M., University of Texas, *Brenham, Tex.*
History, German.

Wolfenson, Louis Bernard, A. M., University of Wisconsin, *Madison.*
Latin, Mathematics.

Wright, Grace Anna, B. L., University of Wisconsin, *Janesville.*
History, English.

Zimmerman, Charles Frederick August, Ph. B., Illinois Wesleyan University, *Milwaukee.*
Economics, History.

Zimmerman, Oliver Brunner, M. E., University of Wisconsin,
Chemistry. —102

Undergraduates and Teachers.

Acker, Ruby May,	*Brandon.*
Ahnefeldt, Elizabeth Anne,	*Chicago, Ill.*
Alexius, Sister M.,	*Sinsinawa.*
Alicia, Sister M.,	*Madison.*
Allison, Olive,	*Indianapolis, Ind.*
Anderson, George Findlay,	*Madison.*
Andrews, Ruth Catherine,	*Hudson.*
Angelique, Sister,	*Madison.*
Arnott, Lillian,	*Stevens Point.*
Aylmer, Adolph William,	*Baltimore, Md.*
Baker, Joseph Henry,	*Merrill.*
Bartelt, Arthur Herman,	*Ft. Atkinson.*
Bartelt, Frank Otto,	*Ft. Atkinson.*
Bassett, Bertha Grace,	*Moline, Ill.*
Bay, Alice Maud,	*Indianapolis, Ind.*
Beck, Joseph Jacob,	*Milwaukee.*
Beck, Maud Gertrude,	*Ashland.*
Beckenstrater, Herman,	*Madison.*
Bell, Florence Ida,	*Racine.*
Bell, Willis James,	*Allison, Ia.*
Bernard, Ransom Drips,	*Madison.*
Bewick, Thomas Lyman,	*Sun Prairie.*
Bissell, Lizzie Cacendra,	*Madison.*
Black, Mary Catherine,	*Green Bay.*
Blackwell, William Albert,	*Sioux City, Ia.*
Blyman, John Charles,	*Rock Island, Ill.*
Brayton, Fannie Elizabeth,	*La Crosse.*
Brinsmaid, William,	*Freeport, Ill.*
Broughton, Ray,	*Albany.*
Buerstatte, Charles August,	*Manitowoc.*
Buffington, Carrie Elizabeth,	*Wabash, Ind.*
Burdick, Alice Lisle,	*Madison.*
Buser, Olivette M.,	*Warren, Ill.*
Byers, Benton Bayara,	*Monroe.*
Canty, Margaret,	*Milwaukee.*
Clary, Elizabeth Frances,	*Darlington.*

Codding, Zoe,	*Findlay, O.*
Cook, Nettie May,	*Madison.*
Cowgill, James Daniel,	*Doylestown.*
Curtis, Alice Bertha,	*Allison, Ia.*
Curtis, Cora Gertrude,	*Allison, Ia.*
Daggett, Florence Janet,	*Madison.*
Danuser, Ralph Waldo,	*Arcadia.*
Davey, Luella Josephine,	*Janesville.*
Dean, Alletta Friscone,	*Iron River.*
De Lacy, John,	*Viroqua.*
Dernehl, Paul Herman,	*Milwaukee.*
Dewitz, Francis Lina,	*Horicon.*
Dickinson, Henry,	*Chicago, Ill.*
Dopp, Homer Rodger,	*Oconomowoc.*
Doudna, Edgar George,	*Richland Center.*
Earle, Flora,	*Tomah.*
Edwards, John Prosser, Jr.,	*Milwaukee.*
Eggers, Harold Everett,	*Two Rivers.*
Elliott, Amanda,	*Moline, Ill.*
Ellis, Amy Gertrude,	*Mazomanie.*
Ellis, Edwin Erastus,	*Evanston, Ill.*
Epstein, Charlotte Wilhelmina,	*Portage.*
Faast, Roselle Flora,	*Eau Claire.*
Falk, Elmer Johann,	*Stoughton.*
Faris, John,	*Monroe.*
Ferguson, Bess Carolynn,	*Madison.*
Ferguson, Donald Nivison,	*Waupun.*
Fish, Irving Andrews,	*Madison.*
Fortney, Gerhard Olaus,	*Viroqua.*
Fox, Peter Oscar,	*Fond du Lac.*
Friedman, Rufus Judah,	*Iron River.*
Gandolfo, Mary Elizabeth,	*Dubuque, Ia.*
Gehrels, Gerhard,	*Milwaukee.*
Gilbert, Newell Clark,	*De Kalb, Ill.*
Gillespie, Edwin Simpson,	*Madison.*
Goddard, Mabel,	*Madison.*
Goodrich, Ada,	*Burke.*
Graham, Mae Lillian,	*Warren, Ill.*
Gray, Nellie Anna,	*Chicago, Ill.*
Green, Abbie Anna,	*Basco.*
Green, Edward Emerson,	*Basco.*

Grinde, Hildah Christine,	*Madison.*
Grove, William Edward Henry,	*Madison.*
Grubel, Mollie,	*Decatur, Ill.*
Guile, Della S.,	*Milwaukee.*
Gunderson, Oscar,	*Iola.*
Gust, George Lewis,	*Baraboo.*
Hainke, Huldah Bertha,	*Milwaukee.*
Hake, Walter Scott,	*Dodgeville.*
Halbach, Norma Catherine,	*Marinette.*
Hamilton, William George,	*Marinette.*
Hammersley, Ellen,	*Madison.*
Handley, Edward,	*Horicon.*
Hardtke, August Charles,	*Milwaukee.*
Hawks, Ida May,	*Burlington.*
Hayde, Helen Esther,	*Chicago, Ill.*
Headsten, Lillian,	*Escanaba, Mich.*
Hein, Willard Henry,	*Waukesha.*
Henkel, Arville Andrew,	*Milwaukee.*
Heyward, Aaron,	*Madison.*
Hicks, Lou Alice,	*East Troy.*
Hill, Carl Newall,	*Spring Green.*
Hills, Fred Robert,	*Menomonie.*
Hoffmann, Katharine,	*Wabash, Ind.*
Hollen, Richard Hamlin,	*Eau Claire.*
Hollenbeck, Herbert Daniels,	*New Richmond.*
Hooper, John Lent,	*Cambridge.*
Hotz, Henry Gustave,	*Scandinavia.*
Houghton, Howard Warren,	*Milwaukee.*
Howe, Clarence Payson,	*Waukesha.*
Humphrey, May Martin,	*Bloomington.*
Hunt, Fred Ralph,	*Sioux City, Ia.*
Hunt, Nora Marie,	*Indianapolis, Ind.*
Jackson, Ida May,	*Milwaukee.*
James, Frances Sophia Courtenay,	*Eau Claire.*
Johnson, Edward,	*Madison.*
Johnson, Evelyn Lena,	*Winona, Minn.*
Johnson, John Thor,	*Milwaukee.*
Jones, Ida Isabelle,	*Plymouth.*
Jones, William Howell,	*Joliet, Ill.*
Kales, Francis Henry,	*Chicago, Ill.*
Kinnan, Margaret Britton,	*Indianapolis, Ind.*

Kircher, Henry William,	*Madison.*
Kneip, Fred Louis,	*Weyauwega.*
Knowlton, Philip Arnold,	*Madison.*
Koda, Shigetaro,	*Kobe City, Japan.*
Krug, Arthur Richard Eugene,	*Milwaukee.*
Kunerth, William,	*La Crosse.*
Lamb, Charles Emery,	*Poynette.*
Lambeck, Arthur Hugo,	*Milwaukee.*
Latham, Melva,	*Chicago, Ill.*
Lawrence, Francis Wolcott,	*Sheboygan.*
Lee, Arthur Elmore,	*Ft. Smith, Ark.*
Lee, William Arthur,	*Madison.*
Liljeqvist, Lawrence Andrew,	*Wausau.*
Lincoln, Buford G.,	*Hillsboro.*
Liver, John Irving,	*Hartford.*
Logan, Stanley Grant,	*Appleton.*
Lohrie, Robert Fulton,	*Rock Elm.*
Lon, Charles Edwin,	*Davenport, Ia.*
Lowen, Archer Hamilton,	*Trenton, Mo.*
Luebke, Wilhelmine Caroline,	*Baraboo.*
Lund, Leurets Petec,	*Nashua, Ia.*
Lyford, Aimee Eugenie,	*Moline, Il.*
Lyman, Charles Adelbert,	*Burke.*
Magner, Anna V.,	*Menomonie.*
Maguire, Beach Woodruff,	*Rockford, Ill.*
Maltby, Jeannette Estell,	*Stockbridge.*
Manson, Alice,	*Belleville.*
Mason, Alice Justina,	*Belleville.*
Martin, Maude,	*Findlay, O.*
McConnell, Agnes,	*St. Louis, Mo.*
McCoy, Harriet Allen,	*Indianapolis, Ind.*
McCoy, Lucy Frances,	*Kansas City, Kan.*
McDonald, Anna Eulalia,	*Baraboo.*
McDowell, John Chambers,	*Madison.*
McGovern, Mary,	*Madison.*
McKeighan, Nellie,	*St. Louis, Mo.*
McNeil, Anne Holmquist,	*Madison.*
McNown, Clara,	*Mauston.*
Metcalf, Frank Woodward,	*Dodgeville.*
Milbradt, Hermann Gistav,	*Edgar.*
Miller, Nelle,	***Monroe.***

Miner, Ernest Darius,	*Stevens Point.*
Morrow, Angus Cameron,	*River Falls.*
Mosher, Ida Armantha,	*Missouri Valley, Ia.*
Mott, William Roy,	*Decorah, Ia.*
Mullenbach, Ortille,	*Marshfield.*
Murley, Hal,	*Shullsburg.*
Murphy, Gertrude Marie,	*Racine.*
Murray, Roy Irving,	*Madison.*
Neckerman, Reuben Julius,	*Madison.*
Neel, Wirt Russell,	*Wolcott, Ind.*
Nickell, Rose Ellen,	*Omaha, Neb.*
Niles, Sidney Cleveland,	*Oak Park, Ill.*
Ollom Winifred Madeline,	*Findlay, O.*
Pallansch, Arthur John,	*Fredonia.*
Parks, Howell,	*Madison.*
Parley, Ashley Rockwell,	*Stevens Point.*
Parsons, John Burnham,	*Whitewater.*
Pattison, Edward Sweeny,	*Durand.*
Pauly, Hugo Albert,	*Milwaukee.*
Pettijohn, John Johnanthan,	*Waterford.*
Plummer, Marguerite,	*Wabash, Ind.*
Post, Beulah Celecta,	*Dubuque, Ia.*
Pugh, Leilah Marguerite,	*Mazomanie.*
Quan, Arthur Winfred,	*Madison.*
Rathjen, Edwin Frederick,	*Milwaukee.*
Reid, Harry S.,	*Lansing, Mich.*
Rider, Melinda Catherine,	*Madison.*
Riedesel, Bertha,	*Battle Creek, Ia.*
Roseman, William Wallace,	*Reedsburg.*
Ross, Emile Augustus,	*Lake Geneva.*
Ruhoff, Otto Ernst,	*Mineral Point.*
Rumsey, Edith Arabel,	*Madison.*
Russell, Edwin Everett,	*Symco.*
Rutherford, Mary,	*Cambridge.*
Saby, Anna Guenella,	*Baldwin.*
Saemann, Mabelle,	*Plymouth.*
Sager, John Edward,	*Seymour.*
Schimek, Cecelia Barbara,	*Chicago, Ill.*
Schneller, Anna Margreth,	*Prairie du Sac.*
Schroeder, George Henry,	*Eau Claire.*
Schule, Paul Adolph,	*Chicago, Ill.*

Shepard, Elizabeth Howe,	*Depere.*
Shimmins, Etta Jane,	*Delavan.*
Shimmins, Zella Mary,	*Delavan.*
Showers, Albert Edward,	*Madison.*
Singleton, Hanna Theresa,	*Prentice.*
Slinde, Imelia Josephine,	*De Forest.*
Smith, Adolph Belmont,	*Brooklyn.*
Smythe, Edwin Willis,	*Madison.*
Smythe, Herman, Augustine, Jr.,	*Madison.*
Spaulding, Harry Austin,	*Tomah.*
Stanley, Charles Philip,	*Ogdensburg.*
Staver, Roy,	*Chicago, Ill.*
Stinson, Orin Lorenzo,	*Madison.*
St. Sure, Frank Adolph,	*Madison.*
Sutherland, William James,	*Charleston, Ill.*
Swift, Orsini Viola,	*Centerville, Ia.*
Switzer, Bertram John,	*Viroqua.*
Thuerer, Edward Walter,	*Baraboo.*
Ticknor, Elizabeth Goffe,	*Madison.*
Tobenkin, Elias Isaac,	*Madison.*
Trump, Roger Murphy,	*Milwaukee.*
Turner, Edmon Franese Cecil,	*Menlo, Kan.*
Twesme, Albert Theo,	*Ettrick.*
Venus, Helen Marie,	*Shawano.*
Wagner, Ray Taber,	*Dubuque, Ia.*
Walker, Henry Lampert,	*Decorah, Ia.*
Warne, Eunice Pemberton,	*Milwaukee.*
Wells, Earl Harold,	*Manawa.*
Wentzel, Lawrence Frederick,	*Batavia, Ill.*
Werner, Charles Frederick,	*Eau Claire.*
West, Payne Gardiner,	*Waukesha.*
Whalen, Monnie Katherine,	*Decorah, Ia.*
Wheelock, Jerome High,	*Westfield.*
Whitcomb, Georgiana Mary,	*Madison.*
White, Herford,	*Madison.*
Wilke, Adelaide Elizabeth,	*Madison.*
Wilke, Helene Ernestine,	*Madison.*
Wilson, Janet,	*Centerville, Ia.*
Wing, Elizabeth,	*La Crosse.*
Winkenwerder, Hugo August,	*Watertown.*
Wilson, Horatio Gates,	*Madison.*

Wood, Norma Curtis,	*Madison.*
Wright, Frederick Charles,	*Ripley, N. Y.*
Wright, Ida Mae,	*Wenona, Ill.*
Zeiher, Emeline Elizabeth,	*West Bend.*
Ziepprecht, Carl William,	*Dubuque, Ia.*
Zimmermann, Amelia,	*La Salle, Ill.*
Zinn, Edna Bertha,	*East Troy.*

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SUMMER SESSION FOR APPRENTICES AND ARTISANS.

Hoy, Howard Hartman, B. S., Agricultural College, S. D., *Brookings, S. D.*
Applied Electricity, Shop Work.

Kerr, Eugene Wycliffe, B. S., Agricultural and Mechanical College, *College Station, Tex.*
Mechanical and Electrical Engineering.

Olwell, Allen Meade, M. S., University of Illinois, *Plainview, Ill.*

Adams, Thomas Leonard,	*Dayton, O.*
Adams, Walter Kelsey,	*Madison.*
Armor, James Coe,	*Pittsburg, Pa.*
Beswick, John Clarence,	*Milwaukee.*
Boyd, Stanley Mayo,	*Madison.*
Brown, Ernest Frank,	*New Brunswick, N. J.*
Cadby, John Nelson,	*Madison.*
Casserly, James Felix,	*Madison.*
Christensen, Charles August,	*Milwaukee.*
Claus, Wesley William,	*Mason City, Ia.*
Cowen, Henry Kerr,	*Chicago, Ill.*
Dean, John Seabury,	*Madison.*
Dillon, Carl Duncan,	*Madison.*
Dormer, William N.,	*Albany.*
Esknche, Oscar Arthur,	*Milwaukee.*
Faucett, Frank,	*Bloomfield, Ind.*
Fisk, Andrew Jackson, Jr.,	*Helena, Mont.*
Garvens, Henry Fred,	*Wauwatosa.*
Graff, Christian Frederick,	*Madison.*
Hahn, John Francis,	*Madison.*
Haugan, Charles Marius,	*Chicago, Ill.*
Heyl, Edward Charlie,	*Madison.*
Holmes, Elijah Homer,	*Prairie View, Tex.*

Hoyt, Ray Stevens,	*Madison.*
Howland, Henry Phelps,	*Springfield, Mo.*
Ives, William Ellery,	*Amboy, Ill.*
Johnson, John Howard,	*Dayton, O.*
Jones, Arthur William,	*Milwaukee.*
Jorstad, Osmund Marcellus,	*La Crosse.*
Kahn, Gustave Edmund,	*Milwaukee.*
Keachie, George Robertson,	*Cedar Rapids, Ia.*
Kershaw, George Darwin,	*Wauwatosa.*
Keys, Donald Churchill,	*Madison.*
Larsen, James Herbert,	*Milwaukee.*
Lathrop, Leigh Hunt,	*Madison.*
Lea, Henry Leslie,	*Iron River.*
McWade, Charles Edgar,	*Du Quoin, Ill.*
Mokma, Harry G.,	*Holland, Mich.*
Morgan, Alexander William,	*Madison.*
O'Leary, William Arthur,	*Duluth, Minn.*
Olmstead, Lewis William,	*Boone, Ia.*
Olson, Olla Marius,	*Racine.*
Pettingill, Claude Harvey,	*Oshkosh.*
Smith, Clarence Joy,	*Kansas City, Kan.*
Smith, Ira Calvin,	*Wauchula, Fla.*
Solberg, Arthur Leroy,	*Beloit.*
Sommer, William,	*Kenilworth, Ill.*
Stephens, Arthur David,	*Madison.*
Trelease, Frank Johnson,	*St. Louis, Mo.*
Tyner, Clem,	*Madison.*
Wallace, George Edson,	*Cedar Falls, Ia.*
Ward, Hugh Charles,	*Madison.*
Wehrle, George Peter,	*Madison.*
Whiting, Max Albert,	*Madison.*
Wilson, George Charles,	*Milwaukee.*
Winslow, John Seymour,	*Madison.*
Wood, Frank Erastus,	*La Crosse.*

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SCHOOL OF MUSIC.

Graduate.

Ackerman, Elizabeth Anna,	*Coleta, Ill.*
Anderson, Anna Louise,	*Madison.*
Brand, Bessie Goodrich,	*Madison.*
Brigham, Bertha Blanche,	*Madison.*
Gapen, Anna Mercedes,	*Madison.*
Lipe, Olive,	*Mount Morris, Ill.*
Montgomery, Janette Louise,	*Madison.*
Ransom, Lyla Albina,	*Wingra Park.*
Sheldon, Mary Roby,	*Madison.*
Thompson, Martha,	*Mt. Horeb.*

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Collegiate.

THIRD YEAR.

Cook, Catherine Cook,	*Madison.*
Hanson, Daisy,	*Madison.*
Kasberg, Petra Elvine,	*Madison.*
Kraemer, Wilhelmina Elizabeth,	*Grand Falls, Minn.*
Munroe, Grace Emma,	*Baraboo.*
Pickford, Theo. Beatrice,	*Madison.*
Renk, Mary Katharine,	*Sun Prairie.*
Rogers, Margaret Fuller,	*Milwaukee.*
Savage, May Lillian,	*Madison.*

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SECOND YEAR.

Ballard, Clara Emily Susanna,	*Madison.*
Bolte, Rudolph Emil,	*Davenport, Ia.*
Brattrud, Cordelia Eudora,	*Madison.*
Byrne, Agnes,	*Madison.*
Christensen, Vera Marie,	*Baldwin.*
Culbertson, Berniece,	*Augusta.*
Davis, William Lloyd,	*Mauston.*
Fowler, Mary Maud,	*Madison.*
Glen, Mary Alice,	*Madison.*
Graves, Edna Lora,	*Brooklyn.*
Groves, Regina Eunice,	*Madison.*
Hamilton, William George,	*Marinette.*
Hatleberg, Anna Helen,	*De Forest.*

Hull, Bessie Ella,	*Madison.*
King, Bessie Susan,	*Neillsville.*
King, Elsie,	*Neillsville.*
Klahr, Florence Marie,	*Horicon.*
Klusmann, Josephine,	*Madison.*
Lang, Stella Mabel,	*Lodi.*
Lavin, Bessie,	*Madison.*
Lee, Allan,	*Cambridge.*
Lee, Norman,	*Cambridge.*
Linné, Edna Hildegard,	*Red Wing, Minn.*
Lounsbury, Almyra Belle,	*Madison.*
Magee, Glen,	*Evansville.*
McGarvey, Ethel Kelly,	*Davenport, Ia.*
McKay, Sara Roxey,	*Madison.*
McLean, Marguerite Louise,	*Menominie.*
Palmer, Mabel,	*Madison.*
Paunack, Robert,	*Madison.*
Roach, Clara Maude,	*Waterloo.*
Rogers, Paul Bolyn,	*Milwaukee.*
Richardson, Alice Isadore,	*Evansville.*
Richardson, Helen Porter,	*Evansville.*
Rider, Melinda Catherine,	*Madison.*
Sanderson, Grace Cynthia,	*Lodi.*
Smith, Anna Du Pré.	*Madison.*
Starks, Estella Marie,	*Madison.*
Stephens, Maude Lunette,	*Fennimore.*
Thom, Elsie,	*Wingra Park.*
Toepfer, Mathilda Rose,	*Madison.*
Wagner, Meta,	*Madison.*

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FIRST YEAR.

Andre, John,	*Madison.*
Baas, Alexius Henry,	*Madison.*
Ballantyne, Edith Virtue,	*Bloomington.*
Ballard, Clara Marie,	*Mendota.*
Barton, Ada E. W.,	*Madison.*
Brodrick, Gertrude Adelaide,	*Madison.*
Bundy, Bessie Birdell,	*Prairie du Sac.*
Burmester, Nellie Mildred,	*Madison.*
Cantwell, Grace Servatia,	*Madison.*
Carey, Katharine Lee,	*Bloomington.*

Cartwright, Forest Simpson,	*Portland, Ind.*
Caswell, Zida Eliza,	*Ft. Atkinson.*
Clark, Wallace Reeves,	*Portland, Tex.*
Cochrane, Margaret Stoan,	*Madison.*
Dahle, Clara Marie,	*Mt. Horeb.*
Dahle, Marie Genevieve,	*Mt. Horeb.*
Doering, Irma,	*Waterloo.*
Dow, Illa Belle,	*Madison.*
Dye, Rose,	*Madison.*
Emery, Lyman,	*Oconomowoc.*
Falk, Lenore Federika,	*Stoughton.*
Gillet, Lauretta Maud,	*Madison.*
Gilpatrick, Irving,	*Madison.*
Gorder, Blanche Pauline,	*Dodgeville.*
Gray, Mary Josephine,	*Rhinelander.*
Hansen, Laura,	*Mt. Horeb.*
Harvey, Isabel,	*Lake Mills.*
Hauser, Henry Gustavus,	*Crandon.*
Hickisch, Tessa Frances,	*La Crosse.*
Hoefer, Elmer George,	*Freeport, Ill.*
Hoffmann, Lothair,	*Madison.*
Homberger, Alfred Wilhelm,	*Sauk City.*
Johnson, Jessie,	*Madison.*
Jones, Margaret Mae,	*Columbus.*
Kunz, Litta,	*Freeport, Ill.*
Laurence, Myrta,	*Madison.*
Libby, Frederich,	*Madison.*
Mendelssohn, Sara Amelia,	*Madison.*
Meyer, William,	*Madison.*
McKay, Alice Vienna,	*Madison.*
Milbrath, Edwin Charles,	*Milwaukee.*
Mullenback, Ortilla,	*Marshfield.*
Murphy, May Elizabeth,	*Madison.*
Myers, Mary Van Schoonhoven,	*Madison.*
Nalty, Josephine Agnes,	*Monroe.*
Nelson, Ralph Mervyn,	*Baldwin.*
Nelson, Susie,	*Madison.*
Norris, Marcella Estella,	*Fennimore.*
Norton, Sara Evelyn,	*Poynette.*
Olson, Maybelle Harriet,	*Cambridge.*
Pearson, Laura,	*Sharon.*

Pineo, Eleanor,	*Duluth, Minn.*
Ripley, Belle,	*Eau Claire.*
Smith, Eleanor,	*Madison.*
Smith, Jessie Clemons,	*Madison.*
Smith, Loyd Raymond,	*Milwaukee.*
Smithback, Tilla Marguerite,	*Deerfield.*
Stiehn, Louis F.,	*Johnson Creek.*
Stockman, Ruth Chapin,	*Mason City, Ia.*
Taylor, Carrie,	*Madison.*
Wellman, Lulu Belle,	*Madison.*
Winterbotham, Emma Rose,	*Madison.*
Woock, Grace Genevieve,	*Baraboo.*
Wood, Norma Curtis,	*Madison.*
Wray, Edward,	*Janesville.*

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SUMMARY OF STUDENTS.

GRADUATES—119

Fellows and Scholars	33
Graduates in Residence	86

COLLEGE OF LETTERS AND SCIENCE—1,232.

Fellows, Scholars, and Graduates	110
Senior Class—219.	
Ancient Classical Course	26
Modern Classical Course	33
English Course	47
Civic-Historical Course	40
General Science Course	27
Philosophical Course	39
School of Commerce	7
Junior Class—195.	
Ancient Classical Course	14
Modern Classical Course	30
English Course	33
Civic-Historical Course	42
General Science Course	26
Philosophical Course	25
School of Commerce	25
Sophomore Class—203.	
Ancient Classical Course	8
Modern Classical Course	39
English Course	47
Civic-Historical Course	38
General Science Course	30
School of Commerce	41
Freshman Class—286.	
Ancient Classical Course	20
Modern Classical Course	44

English Course 64
Civic-Historical Course 57
General Science Course 38
School of Commerce 63
Special Students 161
Adult Special Students 58--219

COLLEGE OF MECHANICS AND ENGINEERING—585.
Fellows and Graduates 3
Senior Class—69.
Civil Engineering Course 21
Mechanical Engineering Course 15
Electrical Engineering Course 30
General Engineering Course 3

Junior Class—86.
Civil Engineering Course 28
Mechanical Engineering Course 17
Electrical Engineering Course 39
General Engineering Course 2

Sophomore Class—132.
Civil Engineering Course 55
Mechanical Engineering Course 24
Electrical Engineering Course 45
General Engineering Course 8

Freshman Class—224. —224

Special Students 51
First Year Specials .....20—71

COLLEGE OF AGRICULTURE—461.
Graduates 4
Long Course 32
Short Course { First Year ..... 186 / Second Year 113
Dairy Course { First Year ..... 125 / Second Year 1

COLLEGE OF LAW—226.
Senior Class 70
Middle Class 53
Junior Class 68

Special Students	5
Adult Specials	3
Students Electing Law Studies	27

SCHOOL OF PHARMACY—35.

Graduates	2
Four Years' Course	5
Three Years' Course	8
Two Years'Course	20

SCHOOL OF MUSIC—126.

Collegiate	Graduates	10
	Third Year	9
	Second Year	42
	First Year	65

SUMMER SESSION OF 1902.

Graduate Students	102	
Undergraduates and Teachers	248	
Courses for Apprentices and Artisans	60	—410
Deduct Students now attending the University	129	— 281

TOTAL NUMBER OF STUDENTS	2946
Twice enumerated 76, leaving as actual number	2870

In the enumeration of special students above, the classification by courses is as follows: A. C., 3; M. C., 13; C. H., 30; G. S., 42; Eng., 64; S. C., 8; Phil., 1; C. E., 20; M. E., 7; E. E., 20; G. E., 4.

NOTE.—In former catalogues the students in the School of Music classified as "Academic" have been included in the summary of students. These students are now omitted from the totals. The number of such students this year is 126.

APPENDIX.

BULLETIN OF THE UNIVERSITY OF WISCONSIN.

The Bulletin of the University of Wisconsin is published bimonthly at Madison. For postal purposes, all issues in all series of the Bulletin are included in one consecutive numbering as published, a numbering which has no relation whatsoever to the arrangement in series and volumes.

Under the heading General Series are included the annual University catalogue, announcements of the various colleges and schools of the University, etc. The numbers in the General series are of varying size and are not designed to form volumes with title-pages and indexes. To date, the following serial numbers of the Bulletin are issues in the General series, viz., Nos. 24, 27, 29, 34, 35, 37, 44, 45, 46, 48, 52, 53, 56, 57, 58, 59, 60, 61, 64, 65, 66, 67.

The Economics and Political Science series, the History series, the Philology and Literature series, the Science series, and the Engineering series contain original papers by persons connected with the University. The series formerly issued as the Economics, Political Science, and History series was discontinued with the completion of the second volume and has been replaced by the Economics and Political Science series and the History series. For a list of editors of the five above-named series, see page 42. The numbers issued to date in these series are as follows:

A. Economics, Political Science, and History Series.

VOLUME I.

(*Complete in three numbers, with title-page, table of contents, and index.*)

No. 1. The geographical distribution of the vote of the thirteen states on the Federal Constitution, 1787-8, by Orin Grant Libby. 1894. 8 + 116 p. 2 pl. 75 cents. *Out of print.*

No. 2. The finances of the United States, from 1775 to 1789, with especial reference to the budget, by Charles Jesse Bullock. 1895. 8 + 157 p. 75 cents.

No. 3. The Province of Quebec and the early American revolution. A study in English-American colonial history, by Victor Coffin. 1896. 17 + 288 p. 75 cents.

VOLUME II.

(*Complete in four numbers, with title-page, table of contents, and index.*)

No. 1. New governments west of the Alleghanies before 1780, by George Henry Alden. 1897. 7 + 74 p. 50 cents.

No. 2. Municipal history and present organization of the city of Chicago, by Samuel Edwin Sparling. 1898. 188 p. 75 cents.

No. 3. Congressional grants of land in aid of railways, by John Bell Sanborn. 1899. 130 p. 50 cents.

No. 4. English common law in the early American colonies, by Paul Samuel Reinsch. 1899. 64 p. 50 cents.

B. History Series.

VOLUME I.

No. 1. The origin of the system of land grants for education, by Joseph Schafer. 1902. 53 p. 35 cents.

C. Philology and Literature Series.

VOLUME I.

(*Complete in four numbers, with title-page, table of contents, and index.*)

No. 1. On the development of American literature from 1815 to 1833, by William B. Cairns. 1898. 4 + 87 p. 35 cents.

No. 2. The treatment of nature in the poetry of the Roman Republic, by Katharine Allen. 1899. 131 p. 50 cents.

No. 3. The Great Mother of the gods, by Grant Showerman. 1901. 113 p. 4 pl. 45 cents.

No. 4. Wortlehre des Adjectivs im Altsächsischen, by Edwin Carl Roedder. 1901. 81 p. 35 cents.

VOLUME II.

No. 1. The time elements of the Orestean trilogy, by Jonathan Bailey Browder. 1902. 76 p. 35 cents. *Out of print.*

No. 2. Schillers Einfluss auf Grillparzer, eine litterarhistorische Studie, by Otto Edward Lessing. 1902. 128 p. 50 cents.

D. Science Series.

VOLUME I.

(*Complete in five numbers, with title-page, table of contents, and index.*)

No. 1. On the speed of the liberation of iodine in mixed solutions of potassium chlorate, potassium iodide, and hydrochloric acid, by Herman Schlundt. 1894. 33 p. 35 cents.

No. 2. On the quartz keratophyre and associated rocks of the north range of the Baraboo Bluffs, by Samuel Weidman. 1895. 22 p. 3 pl. 25 cents.

No. 3. Studies in spherical and practical astronomy, by George Cary Comstock. 1895. 51 p. 40 cents.

No. 4. A contribution to the mineralogy of Wisconsin, by William Herbert Hobbs. 1895. 48 p. 5 pl. 40 cents.

No. 5. Analytic keys to the genera and species of North American mosses, by Charles Reid Barnes and Frederick DeForest Heald. 1896. 10 + 212 p. $1.00.

VOLUME II.

(*Complete in six numbers, with title-page, table of contents, and index.*)

No. 1. The action of solutions on the sense of taste, by Louis Kahlenberg. 1898. 31 p. 35 cents.

No. 2. Aspects of mental economy, by M. Vincent O'Shea. 1900. 166 p. 2 pl. 75 cents.

No. 3. Contributions from the Anatomical Laboratory of the University of Wisconsin, by William Snow Miller. 1900. 48 p. 13 pl. 40 cents.

No. 4. The anomalous dispersion of cyanin, by Carl Edward Magnusson. 1900. 50 p. 7 pl. 30 cents.

No. 5. The theory of electrolytic dissociation, as viewed in the light of facts recently ascertained, by Louis Kahlenberg, with the coöperation of Arthur Alexander Koch and Roy Dykes Hall. 1901. 55 p. 40 cents.

No. 6. On the dielectric constants of pure solvents, by Herman Schlundt. 1901. 37 p. 25 cents.

VOLUME III.

No. 1. On the sensitiveness of the coherer, by Edson Ray Wolcott. 1901. 20 p. 20 cents.

***In preparation*:** The sesquiterpenes, by Oswald Schreiner.

E. Engineering Series.

VOLUME I.

(*Complete in ten numbers, with title-page, table of contents, and index.*)

No. 1. Track, by Leonor Fresnel Loree. 1894. 24 p. 25 cents. *Out of print.*

No. 2. Some practical hints in dynamo design, by Gilbert Wilkes. 1894. 16 p. 25 cents. *Out of print.*

No. 3. The steel construction of buildings, by Corydon Tyler Purdy. 1894. 27 p. 25 cents. *Out of print.*

No. 4. The evolution of a switchboard, by Arthur Vaughan Abbott. 1894. 32 p. 4 pl. 35 cents. *Out of print.*

No. 5. An experimental study of field methods which will insure to stadia measurements greatly increased accuracy, by Leonard Sewell Smith. 1895. 45 p. 1 pl. 35 cents. *Out of print.*

No. 6. Railway signaling, by William McCollough Grafton. 1895. 38 p. 35 cents.

No. 7. Emergencies in railroad work, by Leonor Fresnel Loree. 1895. 42 p. 35 cents.

No. 8. Electrical engineering in modern central stations, by Louis Aloysius Ferguson. 1896. 33 p. 35 cents.

No. 9. The problem of economical heat, light, and power supply for building blocks, school houses, dwellings, etc., by Gerdt Adolph Gerdtzen. 1896. 69 p. 45 cents.

No. 10. Topographical surveys, their methods and value, by John Lane Van Ornum. 1896. 39 p. 35 cents.

VOLUME II.

No. 1. A complete test of modern American transformers of moderate capacities, by Arthur Hillyer Ford. 1896. 88 p. 35 cents.

No. 2. A comparative test of steam injectors, by George Henry Trautmann. 1897. 34 p. 25 cents.

No. 3. The superintendent of bridges and buildings, by Onward Bates. 1898. 30 p. 25 cents.

No. 4. Some unrecognized functions of our state Universities, by John Butler Johnson. 1899. 20 p. 25 cents. *Out of print.*

No. 5. The transcontinental triangulation along the thirty-ninth parallel, by John Fillmore Hayford. 1900. 22 p. 6 pl. 25 cents.

No. 6. The chemical engineer, by Magnus Swenson. 1900. 13 p. 25 cents.

No. 7. Recently improved methods of sewage disposal, by John Butler Johnson. 1900. 19 p. 25 cents.

No. 8. An experimental study of the corrosion of iron under different conditions, by Carl Hambuechen. 1900. 47 p. 19 pl. 30 cents.

In preparation: The effect of frequency on the steadiness of light emitted from an incandescent lamp, by Harold Seaman. The progress of the ceramic industry, by Edward Orton, Jr.

Persons who reside in the state of Wisconsin may obtain copies of the Bulletin free by applying to the Secretary of the Regents and paying the cost of transportation. Certain numbers, as indicated in the preceding list, are out of print and can no longer be furnished. Bulletins issued since May 1, 1898, are entered as second-class mail matter and no charge is required by the University to cover cost of postage. The postage required for such of the earlier numbers as can now be furnished is as follows: Econ. ser., Vol. 1, No. 2. 8c; No. 3, 13c; Vol. 2, No. 1, 4c; Phil. ser., Vol. 1, No. 1, 5c; Sci. ser., Vol. 1, No. 1, 2c; No. 2, 2c; No. 3, 3c; No. 4, 3c; No. 5, 10c; Vol. 2, No. 1, 2c; Eng. ser., Vol. 1, No. 6, 2c; No. 7, 3c; No. 8, 2c; No. 9, 4c; No. 10, 3c; Vol. 2, No. 1, 4c; No. 2, 2c.

Any number of the Bulletin now in print will be sent postpaid to non-residents from the office of the Secretary of the Regents on receipt of the price given in the list printed above. Title-pages, tables of contents, and indexes to completed volumes will be furnished without cost on application to the University Librarian. Communications having reference to an exchange of publications should be addressed to the Librarian of the University of Wisconsin, Madison, Wis.

PH. D. THESES OF THE UNIVERSITY OF WISCONSIN PRINTED SINCE JULY, 1900.

Browder, Jonathan Bailey, Ph. D., 1897.

The time elements of the Orestean trilogy. Printed in the Bulletin of the University of Wisconsin, Philology and Literature series, Vol. 2, pp. 1-76, Madison, 1902.

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