

THE REGISTER

Cornell University

1902-1903

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1903.

JANUARY.							MAY.							SEPTEMBER.						
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CALENDAR.

[The year has been divided into two terms instead of three as formerly.]

FIRST TERM—1902-1903.

Sept.	16	Tuesday	Entrance examinations begin.
Sept.	23	Tuesday	{ ACADEMIC YEAR BEGINS. Matriculation of New students. University Scholarship examinations begin.
Sept.	24	Wednesday	MATRICULATION of new students.
Sept.	25	Thursday	REGISTRATION of matriculated students.
Sept.	26	Friday	{ INSTRUCTION begins in all departments of the University at Ithaca. President's annual address to the students at 12:00 M.
Oct.	1	Wednesday	{ REGISTRATION of students in the Medical College in New York City.
Nov.	27	Thursday	THANKSGIVING DAY.
Dec.	1	Monday	{ Latest date for announcing subjects of Theses for Advanced Degrees.
Dec.	24	Wednesday	Christmas recess begins.
Jan.	3	Saturday	{ Registration in the College of Agriculture for Winter Course in Agriculture and Dairy Husbandry.
Jan.	6	Tuesday	Work resumed.
Jan.	10	Saturday	Ninety-four Memorial Prize Competition.
Jan.	11	Sunday	FOUNDER'S DAY.
Jan.	30	Friday	First term closes.

THE CALENDAR.

SECOND TERM—1902-1903.

Feb.	2	Monday	REGISTRATION for second term.
Feb.	22	Sunday	WASHINGTON'S BIRTHDAY.
Mar.	21	Saturday	{ Winter Course in Agriculture and Dairy Husbandry ends.
Apr.	1	Wednesday	{ Latest date for presenting Woodford Orations.
Apr.	4	Saturday	Easter recess begins.
Apr.	14	Tuesday	Work resumed.
Apr.	15	Wednesday	{ Latest date for receiving applications for Fellowships and Graduate Scholarships.
May	1	Friday	{ Latest date for presenting Theses for Advanced Degrees.
May	1	Friday	Woodford Prize Competition.
May	22	Friday	Eighty-six Memorial Prize Competition.
May	30	Saturday	DECORATION DAY.
June	3	Wednesday	{ COMMENCEMENT of Medical College in New York City.
June	11	Thursday	Instruction ends.
June	14	Sunday	Baccalaureate sermon.
June	16	Tuesday	Class Day.
June	17	Wednesday	{ Alumni Day and Annual Meeting of the Trustees.
June	18	Thursday	THIRTY-FIFTH ANNUAL COMMENCEMENT

SUMMER—1903.

June	24	Wednesday	{ Summer term (of ten weeks) in Entomology and Invertebrate Zoology and in Palæontology and Stratigraphic Geology begins.
July	6	Monday	Summer Session begins.
Aug.	15	Saturday	Summer Session ends.
Sept.	1	Tuesday	{ Summer term in Entomology and Geology ends.

FIRST TERM, 1903-1904.

Sept.	15	Tuesday	Entrance examinations begin.
Sept.	22	Tuesday	{ ACADEMIC YEAR BEGINS. Matriculation of new students. University Scholarship examinations begin.
Sept.	23	Wednesday	MATRICULATION of new students.
Sept.	24	Thursday	REGISTRATION of matriculated students.
Sept.	25	Friday	{ INSTRUCTION BEGINS in all departments of the University at Ithaca. President's annual address to the students at 12:00 M.
Oct.	1	Thursday	{ REGISTRATION of students in the Medical College in New York City.
Nov.	—	Thursday	THANKSGIVING DAY.
Dec.	1	Tuesday	{ Latest date for announcing subjects of Theses for Advanced Degrees.
Dec.	23	Wednesday	Christmas recess begins.
Jan.	2	Saturday	{ Registration in the College of Agriculture for Winter Course in Agriculture and Dairy Husbandry.
Jan.	5	Tuesday	Work resumed.
Jan.	9	Saturday	Ninety-four Memorial Prize Competition.
Jan.	11	Monday	FOUNDER'S DAY.
Jan.	29	Friday	First term closes.

SECOND TERM—1903-1904.

Feb.	1	Monday	REGISTRATION for second term.
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FOUNDATION AND ENDOWMENT.

Cornell University was incorporated by the legislature of the State of New York on the 27th of April, 1865, and opened on the 7th of October, 1868. The existence of the University is due to the combined wisdom and bounty of the United States, the State of New York and Ezra Cornell.

By an act of Congress, approved July 2, 1862, it was provided that there should be granted to the several states public lands, "thirty thousand acres for each senator and representative of congress," from the sale of which there should be established a perpetual fund "the interest of which shall be inviolably appropriated, by each state which may take and claim the benefit of this act, to the endowment, support and maintenance of at least one college, where the leading object shall be, without excluding other scientific and classical studies, and including military tactics, to teach such branches of learning as are related to agriculture and the mechanic arts, in such manner as the legislatures of the states may respectfully prescribe, in order to promote the liberal and practical education of the industrial classes in the several pursuits and professions in life." The act forbade the use of any portion of the aforesaid fund, or of the interest thereon, for the purchase, erection or maintenance of any building or buildings; but the several states claiming and taking the benefit of the provisions of the act were required, by legislative assent previously given, "to provide, within five years at least, not less than one college" for carrying out the purposes of the act.

The share of the State of New York was nine hundred and ninety thousand acres. The scrip was delivered to the comptroller, who was authorized, by the act passed May 5, 1863, to receive it and with the approval and concurrence of other state officers to dispose of the whole or any portion of it for cash, or for stocks of the United States or of the states, or some other safe stocks yielding not less than five per cent. Under this act eight thousand acres were sold at eighty-three cents and sixty-eight thousand acres at eighty-five cents, producing together sixty-four thousand four hundred and forty dollars. But as other states were offering their scrip at a much lower rate, sales soon ceased. Furthermore there was the greatest uncertainty in regard to the disposition which the legislature might ultimately make of the fund that was expected to accrue from the sale of the land scrip.

Meantime Ezra Cornell was dreaming of a project which he had

come to formulate in the memorable words: "I would found an institution where any person can find instruction in any study." By a union of his own resources with the proceeds of the land grant he saw a way to a realization of his purpose. This union was effected by the act of April 27, 1865, establishing Cornell University, and appropriating to it the income of the sale of public lands granted by congress to the State of New York; and the founder's broad conception of a university was reconciled with the narrower purpose of the act of congress donating public lands to the states establishing colleges for the benefit of agriculture and the mechanic arts, by providing in the charter that "such other branches of science and knowledge may be embraced in the plan of instruction and investigation pertaining to the university, as the trustees may deem useful and proper." In the same liberal spirit it was provided in regard to the board of trustees, that "at no time shall a majority of the board be of one religious sect, or of no religious sect"; in regard to professors and other officers, that "persons of every religious denomination, or of no religious denomination shall be equally eligible to all offices and appointments"; and in regard to students, that the university should admit them "at the lowest rate of expense consistent with its welfare and efficiency," and more particularly that it should "annually receive students, one from each assembly district of the state free of any tuition fee in consideration of their superior ability, and as a reward for superior scholarship in the academies and public schools of this state."

Ezra Cornell's direct donation to the university was five hundred thousand dollars, two hundred acres of land with useful buildings, and several smaller gifts for special purposes. His largest contribution, however, came in the shape of profits eventually made by the university on the land scrip which he purchased from the state. Of the New York scrip no further sales had been made by the comptroller prior to the autumn of 1865, when Ezra Cornell purchased one hundred thousand acres for fifty thousand dollars upon condition that all the profits which should accrue from the sale of land should be paid to Cornell University. By act of the legislature passed April 10, 1866, the state had authorized the comptroller to sell the scrip remaining unsold, that is to say, scrip for eight hundred and thirteen thousand nine hundred and twenty acres, to the trustees of Cornell University at a price of not less than thirty cents per acre; and in case the trustees should not agree to make the purchase, the legislature had further authorized the sale "to any person or persons," on the terms above named, provided that proper security should be given that "the whole

net avails and profits from the sale of scrip " should be paid over and devoted to the purpose of Cornell University. The Trustees were not in condition to make the purchase. After some delay Mr. Cornell agreed to take the scrip at thirty cents an acre, with an addition of thirty cents if he should realize that sum on the sale of the land, making the following stipulation in a letter to the comptroller regarding any profits that might accrue in excess of the purchase money.

" I shall most cheerfully accept your views so far as to consent to place the entire profits to be derived from the sale of the lands to be located with the college land scrip in the treasury of the state, if the state will receive the money as a separate fund from that which may be derived from the sale of the scrip, and will keep it permanently invested, and appropriate the proceeds from the income thereof annually to the Cornell University, subject to the direction of the trustees thereof for the general purposes of said institution, and not to hold it subject to the restrictions which the act of congress places upon the funds derived from the sale of college land scrip, or as a donation from the government of the United States, but as a donation from Ezra Cornell to the Cornell University."

The terms proposed by Mr. Cornell were accepted, and the agreement with the state was made August 4, 1866. The sixth paragraph of the agreement distinguishes clearly between the "College Land Scrip Fund"—being the receipts from the state's sale of the land scrip—and the "Cornell Endowment Fund," which was to be constituted by the profits made by Mr. Cornell in the management of the lands and by his other gifts to the University. Mr. Cornell sold scrip for three hundred and eighty-one thousand nine hundred and twenty acres, at prices varying from eighty-five cents to one dollar per acre, the total receipts being three hundred and fifty-seven thousand seven hundred and forty-eight dollars and sixty-one cents. With the remaining scrip for five hundred and thirty-two thousand acres he located five hundred and twelve thousand three hundred and forty-three and sixty-five hundredths acres; and of the land thus located he sold one hundred and eleven thousand and forty six and eighty six-hundredths acres for four hundred and seventy thousand three hundred and sixty-four dollars and eighty-eight cents. The residue of the land he carried until October, 1874, when a new agreement was made, with the consent of the proper state officers, in virtue of which "the Cornell University" was to take the place and assume the duties and obligations of Ezra Cornell, in his contracts with the state, of November, 1865, and August, 1866, accepting from him a conveyance of his entire interest, and all his rights under such contracts, and of all the

lands located by him with college scrip, and paying at once in cash to the comptroller the full amount of Cornell's bond to the state principal and interest, and henceforward assuming the burden of the care, management, and sale of such lands." The university thus took the place of Ezra Cornell in his contracts with the state ; but subsequently the legislature by an act passed May 18, 1880, directed the comptroller, upon the request of Cornell University, to assign, transfer, pay, and deliver to the latter " all money, security, stocks, bonds and contracts, constituting a part of or relating to the fund known as the Cornell Endowment Fund, now held by the state for the use of said university," and a short time thereafter such transfer was made. From the lands handed over by Mr. Cornell—four hundred and one thousand two hundred and ninety-ix and seventy-nine-hundredths acres—the Board of Trustees, through the agency of their Land Committee (of which Henry W. Sage was chairman), have already realized a net return of about four million dollars. The absolute ownership by the university of the Cornell Endowment Fund was, on May 19, 1890, established by the decision of the Supreme Court of the United States, affirming a decision of the New York Court of Appeals.

The College Land Scrip Fund amounts to six hundred and eighty-eight thousand five hundred and seventy-six dollars and twelve cents. By chapter 78 of the laws of 1895 it was turned into the treasury of the state and a certificate of indebtedness for an interest thereupon of five per cent. annually was issued to Cornell University by the State, conformably to the conditions of the act of congress of July 2, 1862, under which the donation of public land was made.

The original charter of Cornell University set limits to the amount of property it could hold ; but by an act passed May 12, 1882, the clause in the charter restricting the holdings of the university was amended so as to remove every limitation, the precise language of the amendment being as follows :

" The corporation hereby created [' Cornell University '] may take and hold real and personal property to such an amount as may be or become necessary for the proper conduct and support of the several departments of education heretofore established or hereafter to be established by its board of trustees, and such property, real and personal, as has been or may hereafter be given to said corporation by gift, grant, devise, or bequest in trust or otherwise, for the uses and purposes permitted by its charter, and in cases of trusts so created the several trust estates shall be kept distinct, and the interest or income shall be faithfully applied to the purposes of such trust in accordance with the provisions of the act or instrument by which the respective trusts were created."

BOARD OF TRUSTEES.

ALONZO B. CORNELL, -----		Ithaca
The PRESIDENT of the University, -----	}	Ithaca
His Excellency, the GOVERNOR of New York, -----		Albany
His Honor, the LIEUTENANT-GOVERNOR, -----		Albany
The SPEAKER of the Assembly, -----		Albany
The SUPERINTENDENT of Public Instruction, -----		Albany
The COMMISSIONER of Agriculture, -----		Albany
The PRESIDENT of the State Agricultural Soc., -----		Brooklyn
The LIBRARIAN of the Cornell Library, -----		Ithaca
*ALFRED C. BARNES, -----	(B.) ¹	Brooklyn
*FRANKLIN C. CORNELL, -----	(B.)	Ithaca
*CHARLES S. FRANCIS, B.S., -----	(A.) ²	Troy
*JARED TREMAN NEWMAN, Ph.B., LL.B., -----	(A.)	Ithaca
*WILLIAM H. SAGE, A.B., -----	(B.)	Albany
*ROGER B. WILLIAMS, A.M., -----	(B.)	Ithaca
WALTER CRAIG KERR, B.M.E., -----	(B.)	New York
C. SIDNEY SHEPARD, A.B., LL.B., -----	(B.)	New Haven
HIRAM W. SIBLEY, Ph.D., LL.B., -----	(B.)	Rochester
RUTH PUTNAM, B.Lit., -----	(A.)	New York
HENRY WOODWARD SACKETT, A.B., -----	(A.)	New York
STEWART L. WOODFORD, LL.D., -----	(B.)	New York
ROBERT B. ADAM, -----	(B.)	Buffalo
WILLARD BEAHAN, B.C.E., -----	(A.)	Winona, Minn.
HENRY RUBENS ICKELHEIMER, B.L., -----	(B.)	New York
LELAND OSSIAN HOWARD, Ph.D., -----	(A.)	Wash. D. C.
HENRY B. LORD, -----	(B.)	Ithaca
ANDREW D. WHITE, LL.D., L.H.D., D.C.L., -----	(B.)	Ithaca
ANDREW CARNEGIE, LL.D., -----	(B.)	Pittsburg, Pa.
JOSEPH C. HENDRIX, -----	(B.)	Brooklyn
CHARLES H. BLOOD, Ph.B., LL.B., -----	(A.)	Ithaca
CHARLES GRAY WAGNER, B.S., M.D., -----	(A.)	Binghamton
FRANK H. HISCOCK, A.B., -----	(B.)	Syracuse
GEORGE R. WILLIAMS, LL.B., -----	(B.)	Ithaca
SAMUEL D. HALLIDAY, A.B., -----	(B.)	Ithaca
HENRY MANNING SAGE, A.B., -----	(B.)	Menands
CHARLES E. TREMAN, B.L., -----	(A.)	Ithaca
ROBERT H. TREMAN, B.M.E., -----	(B.)	Ithaca
GEORGE B. TURNER, B.S., -----	(A.)	Auburn
MYNDERSE VAN CLEEF, B.S., -----	(B.)	Ithaca

*Term of office (5 years) expires in 1903, the next group of six in 1904, etc., etc.

(1) B., elected by Board. (2) A., elected by Alumni.

OFFICERS OF THE BOARD OF TRUSTEES.

----- *Chairman.*
 EMMONS L. WILLIAMS ----- *Secretary-Treasurer.*

EXECUTIVE COMMITTEE OF THE BOARD OF TRUSTEES

SAMUEL D. HALLIDAY, ----- *Chairman.*
 The PRESIDENT of the University, JARED T. NEWMAN,
 The LIBRARIAN of the Cornell Library, CHARLES E. TREMAN,
 CHARLES H. BLOOD, ROBERT H. TREMAN,
 ALONZO B. CORNELL, MYNDERSE VAN CLEEF
 FRANKLIN C. CORNELL, ANDREW D. WHITE,
 SAMUEL D. HALLIDAY, GEORGE R. WILLIAMS,
 HENRY B. LORD, ROGER B. WILLIAMS.
 EMMONS L. WILLIAMS, ----- *Secretary.*

STANDING COMMITTEES OF THE BOARD OF TRUSTEES.

Committee on Buildings :

R. H. TREMAN, the PRESIDENT, the TREASURER.

Committee on Grounds :

F. C. CORNELL, the PRESIDENT, C. H. BLOOD,

Finance Committee :

G. R. WILLIAMS, H. B. LORD, S. D. HALLIDAY, the PRESIDENT.

Land Committee :

S. D. HALLIDAY, A. B. CORNELL, the TREASURER.

Committee on Appropriations :

The PRESIDENT, H. B. LORD, J. T. NEWMAN.

Auditing Committee :

H. B. LORD, M. VAN CLEEF, R. B. WILLIAMS.

DEPARTMENTS AND FACULTIES.

1. **THE UNIVERSITY.**—Cornell University comprehends the following departments, to-wit: the Graduate Department, the Academic Department (or Department of Arts and Sciences), the College of Law, the College of Civil Engineering, the Sibley College of Mechanical Engineering and Mechanic Arts, the College of Architecture, the College of Agriculture and the Medical College. The New York State Veterinary College and the New York State College of Forestry are administered by Cornell University, and their work is organically connected with that of the University.

2. **THE FACULTIES.**—The Faculties of Cornell University are: (a) a General Faculty, designated the University Faculty; and (b) Special Faculties as follows: the Faculty of Arts and Sciences, the Faculty of Law, the Faculty of Civil Engineering, the Faculty of Mechanical Engineering, the Faculty of Architecture, the Faculty of Agriculture, the Faculty of Veterinary Medicine, the Faculty of Forestry, and the Medical Faculty.

3. **THE UNIVERSITY FACULTY.**—The University Faculty consists of the President, who is *ex-officio* the presiding officer, and the Professors and Assistant Professors of the University, including the Professors and Assistant Professors of the New York State Veterinary College and the New York State College of Forestry. It is the function of the University Faculty to consider questions which concern more than one Special Faculty, questions of University policy and questions relating to the administration of the discipline of the University. The Graduate Department is under the immediate charge of the University Faculty.

4. **THE SPECIAL FACULTIES.**—Each Special Faculty is composed of the President, who is *ex-officio* the presiding officer, and all Professors, Assistant Professors, and Instructors who teach in the department or departments under the charge of that Faculty; but Instructors shall not have the right to vote. Subject to the right of revision by the University Faculty, on all matters affecting general University policy, it is the duty of each Special Faculty to determine the entrance requirements for its own students; to describe and define courses of study for them; to determine the requirements for such degrees as are offered to students under its jurisdiction; to enact and enforce rules for the education of its students; and to recommend to the Trustees such candidates for degrees as may have completed the requirements.

OFFICERS OF INSTRUCTION AND ADMINISTRATION.

THE UNIVERSITY FACULTY.

[*Arranged in groups in the order of seniority of appointment.*]

- JACOB GOULD SCHURMAN, A. M., D.Sc., LL.D., PRESIDENT,
41 East Avenue
- THOMAS FREDERICK CRANE, A.M., Dean of the University Faculty, and Professor of the Romance Languages and Literatures,
9 Central Avenue
- GOLDWIN SMITH, D.C.L., LL.D., Professor of English History, Emeritus,
Toronto, Canada
- THE REV. CHARLES BABCOCK, A.M., Professor of Architecture, Emeritus,
1 Sage Avenue
- GEORGE CHAPMAN CALDWELL, B.S., Ph.D., Professor of Chemistry, Emeritus, and Lecturer on Chemistry, *11 Central Avenue*
- BURT GREEN WILDER, B.S., M.D., Professor of Neurology, Vertebrate Zoology, and Physiology, *60 Cascadilla Place*
- JAMES LAW, F.R.C.V.S., Director of the State Veterinary College, and Professor of Principles and Practice of Veterinary Medicine, Veterinary Sanitary Science, and Veterinary Therapeutics,
33 East Avenue
- JOHN LEWIS MORRIS, A.M., C.E., Sibley Professor of Practical Mechanics and Machine Construction, *108 North Geneva Street*
- HIRAM CORSON, A.M., LL.D., Professor of English Literature,
Cascadilla Cottage
- *ESTEVEAN ANTONIO FUERTES, Ph.D., C.E., M.A.S.C.E., Professor of Astronomy in charge of the A. C. Barnes Observatory.
- ISAAC PHILLIPS ROBERTS, M.Agr., Director of the College of Agriculture, and Professor of Agriculture, *37 East Avenue*
- JOHN HENRY COMSTOCK, B.S., Professor of Entomology and General Invertebrate Zoology, *43 East Avenue*
- WATERMAN THOMAS HEWETT, A.B., [Ph.D., Professor of the German Language and Literature, *31 East Avenue*
- EDWARD HITCHCOCK, JR., A.M., M.D., Professor of Physical Culture and Hygiene, and Director of the Gymnasium,
1 Grove Place
- ROBERT HENRY THURSTON, C.E., Ph.B., A.M., LL.D., Dr. Eng'g, Director of Sibley College, and Professor of Mechanical Engineering, *15 East Avenue*
- EDWARD LEAMINGTON NICHOLS, B.S., Ph.D., Professor of Physics,
5 South Avenue

* Deceased.

- LIBERTY HYDE BAILEY, M.S., Professor of Rural Economy,
Sage Place
- JAMES MORGAN HART, A.M., J.U.D., L.H.D., Professor of Rhetoric and English Philology,
1 Reservoir Avenue
- THE REV. CHARLES MELLEN TYLER, A.M., D.D., Sage Professor of the History and Philosophy of Religion and of Christian Ethics,
9 East Avenue
- JEREMIAH WHIPPLE JENKS, A.M., Ph.D., Professor of Political Economy and Politics,
2 South Avenue
- LUCIEN AUGUSTUS WAIT, A.B., Professor of Mathematics,
35 East Avenue
- IRVING PORTER CHURCH, C.E., Professor of Applied Mechanics and Hydraulics,
9 South Avenue
- GEORGE LINCOLN BURR, A.B., Professor of Mediæval History,
Barnes Hall
- CHARLES EDWIN BENNETT, A.B., Professor of Latin,
1 Grove Place
- ERNEST WILSON HUFFCUT, B.S., LL.B., Professor of Law,
109 Cascadilla Place
- FRANCIS MILES FINCH, A.B., LL.D., Director of the College of Law, and Professor of History and Evolution of the Law,
3 Fountain Place
- CUTHBERT WINFRED POUND, Professor of Law,
611 East Seneca Street
- SIMON HENRY GAGE, B.S., Professor of Histology and Embryology,
4 South Avenue
- ROLLA CLINTON CARPENTER, M.S., C.E., M.M.E., Professor of Experimental Engineering,
125 Eddy Street
- CHARLES LEE CRANDALL, C.E., Professor of Railway Engineering and Geodesy,
408 Hector Street
- GEORGE WILLIAM JONES, A.M., Professor of Mathematics,
113 Stewart Avenue
- JAMES EDWIN CREIGHTON, A.B., Ph.D., Sage Professor of Logic and Metaphysics,
2 Reservoir Avenue
- HARRIS JOSEPH RYAN, M.E., Professor of Electrical Engineering,
114 Cascadilla Place
- WILLIAM FREDERICK DURAND, Ph.D., Professor of Marine Engineering, and Principal of the Graduate School of Marine Engineering and Naval Architecture,
5 Central Avenue
- EDWARD BRADFORD TITCHENER, M.A., Ph.D., Sage Professor of Psychology,
Thurston Avenue
- WILLIAM ALBERT FINCH, A.B., Professor of Law,
C Cascadilla Place
- GEORGE FRANCIS ATKINSON, Ph.B., Professor of Botany with special reference to Comparative Morphology and Mycology,
5 East Avenue
- RALPH STOCKMAN TARR, B.S., Professor of Dynamic Geology and Physical Geography,
1 East Avenue
- EDWIN HAMLIN WOODRUFF, LL.B., Professor of Law,
401 North Aurora Street

- VERANUS ALVA MOORE, B.S., M.D., Professor of Comparative and Veterinary Pathology and Bacteriology, and of Meat Inspection,
914 *East State Street*
- WALTER LONG WILLIAMS, V.S., Professor of Principles and Practice of Veterinary Surgery, Zootechny, Obstetrics, and Jurisprudence,
115 *Valentine Place*
- THE REV. NATHANIEL SCHMIDT, A.M., Professor of the Semitic Languages and Literatures,
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The Cornell Athletic Association is an independent organization incorporated under the laws of the State of New York. Its board of trustees is composed of one representative from the Executive Committee of the Board of Trustees, and four from the Faculties of the University, with one member at large, who, together with representatives of the alumni, and eight students representing officially the different branches of athletics, besides the representative of the undergraduate wearers of the "C," and the president of the interscholastic league, constitute the Athletic Council. The Association owns Percy Field, the boats and boat houses, a steam launch and other athletic equipment. The Association issues an annual membership ticket on the payment of \$10.00. The holders of these membership tickets are entitled to free admission to every athletic contest under the management of the Association, which includes all games of baseball, football, track, and lacrosse. Members are also entitled to first choice of reserved seats, no reserved seat tickets for games or boat races being sold until the members of the Association have been supplied with the seats they require. No further subscription toward the support of athletics is solicited from holders of membership tickets. The Athletic Council is charged with the active management of the athletic interests of the University. The graduate treasurer is custodian of the funds belonging to the Association and to the various branches.

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ADMISSION AND CLASSIFICATION.

CONDITIONS OF ADMISSION.

Candidates must be at least *sixteen* years of age, or, if women, *seventeen*. In the College of Law the minimum age is *eighteen* years. The minimum age for these entering as specials is given on page 52. They must have certificates of good moral character, and students from other colleges or universities are required to furnish from those institutions certificates of honorable dismissal.

Candidates for admission must file their credentials at the Registrar's office and obtain permits for examination. The results of the examinations may be ascertained from the Registrar.

ENTRANCE EXAMINATIONS.

Examinations in all the subjects required for admission to the University are held, *in Ithaca* in September, at the beginning of the first term.

The certificates issued as the result of the examinations to be held in June by the College Entrance Examination Board of the Middle States and Maryland will be accepted under the same conditions as if such examinations were held by this University. For further particulars address Secretary of College Entrance Examination Board, Sub-station No. 84, New York City.

No examination of candidates for admission will be held at any other times or places. Further information in regard to the time of examinations in September may be found in calendar, and on page 49. Specimen copies of examination papers will be sent on application to the Registrar.

ADMISSION ON EXAMINATION.

I. The Primary Entrance Examinations.

(Required for all courses, [except as stated elsewhere], but not sufficient for admission to the University without the advanced examinations indicated on pp. 36-49.)

1. **In English.** One hour of examination is assigned to answering questions upon the books marked *A*. Two more hours are occupied with writing longer papers upon subjects taken from the books marked *B*.

The books prescribed for 1903, 1904, and 1905 are : *A*, Shakespeare, *The Merchant of Venice*, *Julius Caesar* ; *The Sir Roger de Coverley Papers in the Spectator* ; Goldsmith, *the Vicar of Wakefield* ; Scott, *Ivanhoe* ; Coleridge, *The Ancient Mariner* ; Carlyle, *Essay on Burns* ; Tennyson, *The Princess* ; Lowell, *The Vision of Sir Launfal* ; George Eliot, *Silas Marner*. *B*, Shakespeare, *Macbeth* ; Milton, *Lycidas*, *Comus*, *L'Allegro*, *Il Penseroso* ; Burke, *Conciliation with America* ; Macaulay, *Essays on Milton and on Addison*.

The examination is not designed to test the candidate's familiarity with the history of English literature or with the minutiae of the books prescribed, but to test his ability to express himself readily and easily in accordance with the usages of ordinary prose composition. To this end the candidate is urgently advised :

a. To train himself in writing concise paragraphs in answer to questions upon the most striking narrative and descriptive incidents in the books of the *A*-list.

b. To study more systematically the contents of the books of the *B*-list, endeavoring to retain a knowledge of each book as an organized whole. This result will be best secured by writing numerous essays or compositions of considerable length upon the general purport of each book.

c. To cultivate—in all his writing—the habits of correct grammar and spelling (including proper names characteristic of the books read), of correct sentence-structure, punctuation, and paragraphing.

d. To avoid most carefully the error of believing that the mere oral memorizing of the contents of the books prescribed is the kind of preparation desired. The candidate is expected to learn from these books the art of expressing himself.

In every case the University examiner will treat mere knowledge of the books as less important than the ability to write good English.

No candidate markedly deficient in English will be admitted to any course in the University.

Regents' credentials (see p. 50) are not accepted in place of the entrance examination, unless they cover first year English, second year English, and *either* third year English or English Reading. School certificates are not accepted in place of the entrance examination in English. But candidates coming from schools the certificates of which have been accepted in other subjects may obtain exemption from the one-hour examination in books marked *A*, by submitting specimens of school work upon these books. Printed directions to this end should be procured from the Registrar, not later than the first of January.

Graduates of high schools and academies of approved standing and holders of a Regents' diploma or any sixty academic count Regents' certificate are admitted to the College of Law without an examination in English.

The Cornell medical student's certificate issued by the Regents admits to the Medical College. See also under Medical College.

In History, *one* (but see page 51) of the four following subjects must be offered :

2. Ancient history, with special reference to Greek and Roman history, and including also a short introductory study of the more ancient nations and the chief events of the early Middle Ages, down to the death of Charles the Great (814 A.D.).

3. Mediæval and modern European history, from the death of Charles the Great to the present time.

4. American history and civil government.

5. English history.

Each of the above topics is intended to represent one year of historical work wherein the study is given five times per week, or two years of historical work wherein the study is given three times per week.

The examination in history will be so framed as to require comparison and the use of judgment on the pupil's part, rather than the mere use of memory. The examination will presuppose the use of good text-books, collateral reading, and practice in written work. Geographical knowledge will be tested by requiring the location of places and movements on an outline map, or otherwise.

(The requirement in History is based on the recommendations of the Committee of Seven of the American Historical Association.)

6. **Plane Geometry.** Including the solution of simple original exercises, numerical problems, and questions on the metric system ; as much as is contained in the larger American and English text-books. The nature and scope of the work is shown in "McMahon's Plane Geometry."

7. **Elementary Algebra.** Factors, common divisors and multiples, fractions, equations of the first degree with one or more unknown quantities, involution including the binomial theorem for positive entire exponents, evolution, the doctrine of exponents, radicals and equations involving radicals, quadratics, equations of one or two unknown quantities and equations solved like quadratics, ratio and proportion, and putting problems into equations ; as much as is contained in the larger American and English text-books. The nature and scope of the work is shown in "Tanner's Elementary Algebra."

In the fundamental operations of algebra, such as multiplication and division, the management of brackets, the solving of numerical and literal equations of the first and second degrees, the combining and simplifying of fractions and radicals, the interpretation and use of negative quantities and of 0 and ∞ , the putting of problems into equations—the student should have distinct notions of the meaning and reason of all that he does, and be able to state them clearly in his own language; he should also be able to perform all these operations, even when somewhat complex, with rapidity, accuracy, and neatness; and to solve practical problems readily and completely. In his preparatory study he is advised to solve a great many problems, and to state and explain the reasons for the steps taken.

In geometry he should learn the definitions accurately, whether in the language of the text-book or not, and in proving a theorem or solving a problem he should be able to prove every statement made, going back step by step till he rests upon the primary definitions and axioms. He should be able to apply the principles of geometry to practical and numerical examples, to construct his diagrams readily with rule and compass, and to find for himself the solutions of simple problems and the demonstrations of simple theorems. To cultivate this power of origination, he should always, before reading the solution or proof given in his text-book, try to find out one for himself, making use, if necessary, of his author's diagram; and if successful he should compare critically his own work with his author's, and see wherein either is the better. Besides oral recitation, he is advised to write out his demonstrations, having regard both to the matter and to the form of his statements; and when written he should carefully study them to make sure, first, that he has a complete chain of argument, and secondly, that it is so arranged that without defect or redundance one step follows as a logical consequence of another.

II. Advanced Examination for Admission to the Various Courses.

For admission to the various courses of study, examinations *in addition to the Primary Entrance Examinations* are required as follows:

To the Course Leading to the Degree of Bachelor of Arts.

In addition to the primary entrance examinations as given on pages 33-36, the applicant must offer either A, B, or C, as below.

A.

1. **In Greek**: Candidates are examined in the entrance requirements adopted by the College Entrance Examination Board. These are:

a. i. GREEK GRAMMAR : The inflections of nouns and verbs ; the principles of the syntax of nouns and of verbs ; the structure of sentences in general, with particular regard to relative and conditional sentences, and to indirect discourse ; versification so far as applied to the dactylic hexametre.

ii. GREEK PROSE COMPOSITION : Consisting principally of detached sentences to test the candidate's knowledge of grammatical constructions.

The examination in grammar and prose composition will be based on the first two books of Xenophon's *Anabasis*.

b. XENOPHON : The first four books of the *Anabasis*.

c. HOMER : The first three books of the *Iliad* (omitting II, 494-end).

2. In Latin : Candidates are examined in the entrance requirements adopted by the College Entrance Examination Board. These are :

a. i. LATIN GRAMMAR : The inflections ; the simpler rules for composition and derivation of words, syntax of cases and the verbs ; structure of sentences in general, with particular regard to relative and conditional sentences, indirect discourse and the subjunctive : so much prosody as relates to accent, versification in general, and dactylic hexameter.

ii. LATIN COMPOSITION : Translation into Latin of detached sentences and very easy continuous prose based upon Caesar and Cicero.

b. CAESAR : Any four books of the *Gallic War*, preferably the first four.

c. CICERO : Any six orations from the following list, but preferably the first six mentioned : The four orations against Catiline, Archias, the Manilian Law, Marcellus, Roscius, Milo, Sestius, Ligarius, the fourteenth Philippic.

d. VIRGIL : The first six books of the *Æneid*.

B.

1. In Latin as above.

2. In Advanced French or Advanced German : *The examination in advanced French or in advanced German covers the examination in the elementary requirement in each subject.* The attention of teachers preparing students in French or German is called to the valuable report of the "Committee of Twelve" of the Modern Language Association of America, published by D. C. Heath & Co., Boston. Mailing price, sixteen cents.)

Elementary French.—(a) The translation at sight of ordinary nine-

teenth century prose. It is important that the passages set be rendered into clear and idiomatic English. It is believed that the power of translating at sight ordinary nineteenth century prose can be acquired by reading not less than four hundred duodecimo pages from the works of at least three different authors. Not more than one-half of this amount ought to be from works of fiction. This number of pages is to include not only prepared work, but all sight reading done in class. (b) The translation from English into French of sentences or of a short connected passage, to test the candidate's familiarity with elementary grammar. Elementary grammar is understood to include the conjugation of regular verbs, of the more frequent irregular verbs, such as aller, envoyer, tenir, pouvoir, voir, vouloir, dire, savoir, faire, and those belonging to the classes represented by ouvrir, dormir, connaître, conduire, and craindre; the forms and positions of personal pronouns, the uses of other pronouns and of possessive, demonstrative, and interrogative adjectives; the inflection of nouns and adjectives for gender and number, except rare cases; the uses of articles, and the partitive constructions.

Pronunciation should be carefully taught and pupils be trained to some extent to hear and understand spoken French. The writing of French from dictation is recommended as a useful exercise.

Advanced French: [Equivalent to Intermediate French of the College Entrance Examination Board.] (a) The translation at sight of standard French. It is important that the passages set be rendered into clear and idiomatic English. It is believed that the necessary proficiency in translation at sight can be acquired by reading, in addition to the elementary work, not less than six hundred duodecimo pages (a total, with the elementary requirement, of 1,000 pages) of prose and verse from the writings of at least four standard authors. A considerable part of the amount read should be carefully translated into idiomatic English. (b) The translation into French of a connected passage of English prose. Candidates will be expected to show a thorough knowledge of *accidence*, and familiarity with the essentials of French syntax, especially the uses of tenses, moods, prepositions, and conjunctions. Careful attention should be paid to pronunciation and the uses of spoken French.

For examination no specific authors or works are designated. An examination in pronunciation and the writing of French from dictation will be included. All applicants for admission are required to present a statement from their teacher mentioning the text-books used and the authors read, including the number of pages translated from French into English and from English into French.

Elementary German.—(a) The examination will require an accurate knowledge of the principles of grammar and especially of the declension of articles, adjectives, pronouns, and nouns; the conjugation of verbs; the prepositions and their government; the uses of the modal auxiliaries; the elementary rules of syntax and word order. The proficiency of the applicant will be tested by questions on the above topics and by the translation into German of simple English sentences. (b) Translation at sight of a passage of easy prose containing no rare words. It is believed that the requisite facility can be acquired by reading not less than two hundred duodecimo pages of simple German.

Practice in pronunciation, in writing German from dictation, and in the use of simple German phrases in the class room is recommended.

Advanced German.—[Equivalent to Intermediate German of the College Entrance Examination Board.] (a) Advanced grammar. In addition to a thorough knowledge of accidence, of the elements of word formation, and of the principal uses of prepositions and conjunctions, the candidate must be familiar with the essentials of German syntax, and particularly with the uses of modal auxiliaries and the subjunctive and infinitive moods. The proficiency of the applicant will be tested by questions on these topics, and by the translation into German of easy connected English prose. (b) Translation at sight of passages from standard classical authors. It is believed that the requisite facility can be acquired by reading, in addition to the amount mentioned under elementary German, at least five hundred pages (a total, with the elementary requirement, of 700 pages) of classical and contemporary prose and poetry. It is recommended that not less than one-half of this reading be selected from the works of Lessing, Schiller, and Goethe.

It is recommended that the candidate acquire the ability to follow a recitation conducted in German and to answer in that language questions asked by the instructor.

For examination no specific authors or works are designated. An examination in pronunciation and the writing of German from dictation may be included. All applicants for admission are required to present a statement from their teacher, mentioning the text-books used and the authors read, including the number of pages translated from German into English and from English into German.

C.

1. In **Advanced French** as above.
2. In **Advanced German** as above.
3. In **Advanced Mathematics** as below. See page 46.

As an alternate requirement for advanced mathematics one of the following sciences, viz., Physics, Chemistry, Botany, Geology, or Zoology may be offered as below.

a. **Physics.**—Students offering physics for entrance must show an acquaintance with the more important phenomena and with the principles involved in the explanation of them. They must, in addition to a year's work with the text-book, have completed a year of laboratory practice and must be prepared to work simple numerical problems upon the laws of falling bodies ; upon the pendulum ; upon properties of liquids and gases, including the determination of density ; upon thermometry and calorimetry, including specific heats and heats of fusion and liquefaction ; upon the relations of current and electromotive force and resistance ; upon velocity, wave length, and resonance in sound ; upon refractive indices, focal lengths, and the size and position of images in optics. The student must understand and be able to use the metric system in measurement and computation.

The laboratory work offered must be chiefly quantitative in character, and must consist of at least forty exercises or experiments of the character given in Nichols's "Outlines of Physics," or other works similar to this in grade and method. The laboratory work prescribed above must have been performed by the student individually, in evidence whereof he must present his laboratory note book at the time of examination. He must, moreover, be prepared to describe intelligently the method pursued and the results obtained in the experiments which he has performed.

b. **Chemistry.**—Remsen's "Introduction to the study of Chemistry," or its equivalent, is to be taken as the basis of the examination. In addition to that, laboratory practice must have been taken with the same book as a guide, or some other book of a similar character representing eighty hours of actual work ; the notes upon this, carefully written out, must be presented at the time of the examination, and this record should be endorsed by the teacher at the close of each day's work. Problems in the calculation of gas volumes, and in stoichiometry will be included in the examination. Finally, the applicant will be examined on such an amount of qualitative analysis as can be accomplished in eighty hours of actual practice in the laboratory. A carefully written and endorsed note book of this work must also be presented at the time of the examination.

Laboratory as well as oral or written examinations will be held in those parts of the work requiring laboratory practice. The nature and scope of the problem work is shown in Trevor's "Chemical Problems."

c. **Botany.**—The student should aim to acquire a knowledge of the

general laws and fundamental principles of plant nutrition, assimilation, growth, etc., as exemplified by plants chosen from the different groups, as well as the general comparative morphology and the broader relationships of plants.

The following brief synopsis will suggest the topics and methods of study :

Study protoplasm in plants representing different groups, as *spirogyra*, *mucor*, *nitella*, and in the tissues of some of the higher plants, in order to demonstrate that this substance, though occurring in widely different plants, is fundamentally the same, and reacts in a similar manner to treatment with certain simple reagents.

Study absorption and osmose in plant cells, employing such plants as *spirogyra*, *mucor*, the cells of some higher plant as the beet, and in the root hairs of a seedling plant ; test the effect of salt solutions in plasmolyzing the cells of these plants, then the restoration of turgescence in the same cells, and the movement of the protoplasmic membrane to demonstrate the part it plays in the process of absorption in plants.

Study nutrition by comparison of soil and water culture in seedlings ; study also root pressure ; turgidity in plant parts and cell masses ; transpiration ; the path of movement of liquids in higher plants, and the general structure correlated with these processes ; study nutrition of parasites (*carnation rust*, *dodder*), of mushroom.

Study the movement of gases in carbon assimilation as shown by *spirogyra*, *vaucheria*, *elodea*, etc., in respiration as shown in germinating seeds ; study forms of chlorophyll bodies and the formation of starch, noting the parts of the plant where these processes take place, and using for comparison, *spirogyra*, *zygnema*, *vaucheria*, *oedogonium* ; liverworts like *riccia*, *marchantia*, *cephalozia* ; mosses like *funaria*, *mnium* ; and a few of the higher plants, including *lemna*.

Study growth of seedlings with reference to increase in length and diameter, direction of growth ; irritability shown by movement of parts in response to stimuli. (The topics as above arranged, as far as possible represent progression of function, and the study of the lower plants throws great light on the processes in the higher forms, and at the same time familiarizes the student with a few of these lower forms).

Study general morphology, reproduction and fruiting in the different groups. Examples are suggested as follows : Among the algae,—*spirogyra*, *vaucheria*, *oedogonium*, *coleochetae* ; among the fungi,—*mucor*, *saprolegnia*, *puccinia*, (*wheat rust*), one of the *erisyphaeae* (*powdery mildews*), mushrooms ; among the liverworts,—*riccia*, *mar-*

chantia, cephalozia ; among the mosses,—funaria, mnum, or polytrichum ; among fern plants,—a fern, equisetum, selaginella, isoetes ; among gymnosperms,—one of the pines ; among angiosperms,—one of the monocotyledons and a dicotyledon. (In this study it will be found useful in dealing with the lower plants to use the same plant as often as possible for the different topics, since fewer new names will be introduced and the student can concentrate the mind upon processes and structures. The plants suggested are chosen for a purpose since they represent progression of form and structure. The student should study all the stages suggested from the actual material, using text-books only as aids.)

In the algae, liverworts, mosses, and ferns the organs of reproduction can usually be easily studied by beginners if material is preserved at the proper stages in advance, or it may be grown as wanted. In the higher plants the study of the reproductive organs is attended with difficulty. Here and in other difficult topics the studies should be supplemented by demonstrations on the part of the teacher, and by collateral reading.

Study the special morphology of the higher plants by a careful examination of types in the families of angiosperms. The following are suggested,—ranunculaceae, cruciferae, leguminosae, rosaceae, umbelliferae, compositae, labiatae, cupuliferae, salicaceae, liliaceae, araceae, cyperaceae, gerniaceae, orchidaceae.

As a part of the examination, careful notes and drawings must be presented as evidence that the work on the several topics outlined above has been faithfully and successfully accomplished. Those who wish to prepare an herbarium in addition, may present the same as partial evidence, but weight will be given to this only when the herbarium is prepared with a view of illustrating some definite problem either of relationship or of ecological study, as plant distribution in relation to soil, topography of the country, plant formations, etc.

d. **Geology.**—To meet the requirement in geology it will be necessary to devote to the study at least five periods a week for one year. Of this time not less than two periods a week must be given to laboratory and field work. The text-book used should cover the ground treated in such books as Scott's "Introduction to Geology," Geikie's "Class Book of Geology," and Tarr's "Elementary Geology ;" but in addition to the subjects included in these books the student will be expected to do collateral reading in such works of reference as Geikie's "Text-book of Geology," Dana's "Manual of Geology," Lyell's "Principles of Geology," and LeConte's "Elements of Geology." It would also be well to refer to books treating portions of Geology more

specifically, such as Dana's "Characteristics of Volcanoes," Dana's "Corals and Coral Islands," Russell's "Volcanoes," Russell's "Lakes," Wright's "Ice Age in North America," Russell's "Glaciers," etc. The examination will test not merely the knowledge upon the text-book itself, but also the range and thoroughness of the work done with reference books. Carefully written digests of the parts read in the reference books, if certified to by the teacher, may be offered in evidence of the amount of work done with them.

Much stress will be placed upon that part of the examination testing the laboratory and field work. This laboratory and field work should in large measure be made a study of the home geology ; and evidence of good work in this connection will be necessary in order to pass the subject. Note books, certified to by the teacher, may be presented as evidence of work done in the field and laboratory.

In the laboratory the common minerals and rocks should be studied so that the pupil may identify them without difficulty. Photographs of geological phenomena should also be studied, and training be given in the interpretation of geological maps. An elementary knowledge of paleontology should be obtained by the study of some of the common fossils ; and if the school is situated in a fossiliferous region, field work in stratigraphic geology should be included, together with the collection of fossils and their identification in the laboratory. Some hints concerning the nature of the work expected in the laboratory and the field may be gained from Tarr's "Suggestions for Laboratory and Field Work in High School Geology."

e. **Zoology.**—The examination in zoology will consist of two parts as follows :

1. **Invertebrate Zoology.**—The candidate must have devoted the equivalent of five periods a week for at least one-half year to the study of invertebrate zoology ; and the greater part of this work must have been laboratory practice in the observation of living forms and in dissection. His laboratory notes and drawings, endorsed by the teacher, will be required at the time of the examination as evidence of the nature of this part of the work. This laboratory practice should include a study of at least thirteen of the forms named in the following list : amœba, paramœcium, hydra, sea-anemone, star-fish, sea-urchin, earth-worm, cray-fish, lobster, spider, millipede, centipede, locust (grasshopper), dragon-fly, squash-bug, butterfly, bumblebee, clam, snail, and squid.

The laboratory work must be of the character given in Needham's "Elementary Lessons in Zoology," Colton's "Practical Zoology," Kellogg's "Elementary Zoology," or other works similar to these in

grade and method. In addition to the above books, the student should have access to some advanced work like Parker and Haswell's "Text-book of Zoology," or Adam Sedgwick's "Student's Text-book of Zoology," 1898, for reference.

The examination will call for a discussion of the habitat, mode of life, and post-embryonic development (transformation) as well as of the morphology of the forms studied.

2. **Vertebrate Zoology.**—To meet the requirement there should be submitted drawings and notes in evidence of the dissection of the viscera of forms representing groups as follows: Mammal (cat, dog, monkey, rabbit, rat or opossum); Bird (common fowl, pigeon, or other convenient form); Reptiles (serpent, and either a turtle or an alligator); Batrachians (salamander, toad or frog, and a tadpole); "Fishes" (sturgeon, amia, or gar; cat-fish, sucker, carp, or other soft-rayed fish; bass, perch or other spiny-rayed fish; shark or ray; lamprey or hag; lancelet (*amphioxus*), and a simple tunicate, *i. e.*, *boltenia* or *molgula*).

Particular attention should be paid to the brain, the heart and the respiratory apparatus. The muscles of the arm and leg should be dissected upon a mammal, a bird, and a reptile, and the differences pointed out. There must be prepared a skeleton (which need not be mounted) of a mammal, bird, or fish; and skulls of at least five other vertebrates. (In preparing these remember that the hyoid goes with the skull.) The skulls, with proper labels, must be submitted at the examination.

Two mammals should be compared in respect to their habits, food, mode of locomotion, etc.; likewise two birds, two reptiles, two batrachians, and two "fish"

Besides the practical work above indicated, the student must gain from lectures, or from text-books designed for high schools or colleges (*e. g.*, Parker and Haswell's "Text-book of Zoology," 1897, or Adam Sedgwick's "Student's Text-book of Zoology," 1898), a comprehensive knowledge of the members of the classes or groups represented by the forms studied as described above. This knowledge must include their geographical distribution, habits, and relation to human beings, whether beneficial or injurious, directly or indirectly; the relations of the young to the parent in respect to oviparity and viviparity and the exceptions to the general rules; the form and structure of the red blood corpuscles and the exceptions to the general rules. In case some point of information in your note book is derived from a text-book or a cyclopedia, give an exact reference to the source of information.

To the Course Leading to the Degree of Bachelor of Laws.

In addition to the primary entrance examinations as given on pages 33-36, the applicant must offer either A, B, or C, as above. For equivalents see also under College of Law.

To the Course Leading to the Degree of Doctor of Medicine.

A Cornell medical student's certificate, issued by the Regents of the State of New York, and based upon 48 counts including first year English, second year English, American History and Civil Government, Plane Geometry, Elementary Algebra, first year Latin, and second year Latin. (Instead of second year Latin, the candidate may offer any one of the following: Caesar, Nepos, first year Spanish, first year German, or first year French.)

A medical student's certificate is granted by the Regents for 48 counts, as a result of the Regents' examination or on evidence of four years of satisfactory high school work or its equivalent. The medical student's certificate offered for entrance to Cornell University must bear upon its face the above required subjects or the candidate must pass entrance examinations in those required subjects which are not covered by the certificate. The credentials should be sent directly to the Regents' Office, Albany, N. Y., and application made for a medical student's certificate. This certificate should then be submitted to the Registrar for entrance to the medical course at Ithaca.

[For admission to this course in New York City, address the Secretary, First Avenue, 27th to 28th Streets, New York City.]

To the Course Leading to the Degree of Bachelor of the Science of Agriculture.

In addition to the primary entrance examinations as given on pages 33-36, the applicant must offer either A, B, or C, as above or an equivalent of one of them. See also under College of Agriculture.

To the Course Leading to the Degree of Doctor of Veterinary Medicine.

For the present entrance requirements to this course see under Veterinary College and apply to the Director of the State Veterinary College, Ithaca, N. Y.

To the Course Leading to the Degree of Forest Engineer.

In addition to the primary entrance examinations as given on pages 33-36, the applicant must offer Advanced French, Advanced

German, and Advanced Mathematics, as on pages 38, 39, and 46. Latin as given on page 37 may be substituted for the Advanced French.

**To the Course Leading to the Degree of Bachelor of
Architecture.**

In addition to the primary entrance examinations as given on pages 33–36, the applicant must offer as below.

1. In **Advanced Mathematics** as much as is contained in the standard American and English text-books on Solid Geometry, Advanced Algebra, and Plane and Spherical Trigonometry. The following topics may be especially noted in :

Solid Geometry.—The properties of straight lines and planes, of dihedral and polyhedral angles, of projections, of polyhedrons, including prisms, pyramids, and the regular solids, of cylinders, cones, and spheres, of spherical triangles ; and the measurement of surfaces and solids.

Precise definitions and rigorous proofs are required. Those under examination are expected to make neat drawings, to be able to prove simple propositions that are not in the text-books, and to make simple constructions. Warning is given that the proofs by “limits,” as given in the books are generally unsatisfactory.

Advanced Algebra.—Variation, proportion, inequalities, and incommensurable numbers ; the theory of powers and roots, including fraction powers and incommensurable powers ; the theory of quadratic equations, including problems in maxima and minima that may be solved by aid of quadratics ; the three progressions ; the theory and use of logarithms ; permutations, combinations, and probabilities ; elementary propositions in series including the development and the summation of series and interpolation ; continued fractions ; elementary propositions in the theory of equations, including the plating of entire functions of one letter and the solution of higher numerical equations ; and so much of the theory of numbers as pertains to the properties of prime and composite numbers, and to the multiples and measures of integers and of entire functions of one letter.

In algebra, theory and problem solving have equal weight.

Plane and Spherical Trigonometry.—The definition and relations of the six principal trigonometric functions, the properties of right and oblique plane triangles, and their solution, including the proof of the necessary formulae and the use of trigonometric tables ; applications of trigonometry to problems in surveying ; the properties of trihedral angles ; and the solution of right and oblique spherical triangles, including the determination of the ambiguous cases.

The trigonometric functions must be defined as ratios, not as lines ; and both the definitions and the proofs of trigonometry must be so broad as to apply to all angles, and all triangles, whatever the size or sign of the parts involved.

Special Directions.—Of the preparatory work in Mathematics two things are specially demanded.

That it shall have developed in the student a certain degree of mathematical maturity, and familiarized him with the subject matter and methods of mathematical work.

That it shall have furnished him with those specific facts, an accurate and ready knowledge of which is indispensable in the further prosecution of his professional study.

The first of these demands is fairly well satisfied in the case of students who have conscientiously performed the mathematical work required for a Regents' diploma or for a diploma from one of our better high schools. A careful review of this part of the student's work, given immediately before entering the University, would give him a broader and more comprehensive knowledge, would make clear to him the reasons for many things which he did not understand when he first went over them, and would equip him with better and more rapid methods of work. Thus informed, his work in the University would not only be much easier for him, but it would also mean much more to him, and such a review is therefore advisable.

On the other hand, most students who fail in their university mathematics fail because they are poorly equipped in the second requirement above mentioned. For example ; they cannot perform the ordinary operations of algebra either rapidly or accurately, they do not know the theory of quadratic equations, they are lost among trigonometric formulæ, and they blunder when they use logarithms. Instead of spending their time and energy upon their new work, they must spend much of it in studying up those things with which they ought to be familiar, and, thus handicapped, they cannot keep up the pace set by men who are properly prepared, and they cannot do the work that must be done to fit them for the professional work that follows. They become discouraged and disheartened, and they soon rank as third-rate men, when a little care in their preparation might have made them first rate men.

It is not sufficient that the student *should once have known* his preparatory mathematics : he must know them *at the time when he begins his work here*. It seems absolutely essential, therefore, that these subjects be very carefully reviewed just prior to entrance.

2. In **Advanced French** or **Advanced German** (French preferred) as given on pages 38 and 39.

NOTE : The applicant must present a satisfactory Regents' credential (see page 50), or a certificate of graduation from an approved school (see page 51). Otherwise he must, in addition to the requirements mentioned in 1 and 2, pass examinations or present acceptable certificates representative of an amount of work equivalent to three years time in a single subject in preparatory schools of approved standing.*

For the above work a free choice among the various subjects not otherwise counted, that are taught in the preparatory schools of approved standing, will usually be accepted; while at the same time, combinations of the following subjects are recommended as the most suitable for entrance to the course in the College of Architecture: Physics, Chemistry, Geology, Free-Hand Drawing, and the alternative Modern Language.

To the Course Leading to the Degree of Civil Engineer.

1. **In Solid Geometry, Advanced Algebra, and in Plane and Spherical Trigonometry,** as much as is contained in the standard American and English text-books. See page 46.

2. **In Advanced French or Advanced German,** as given on pages 38-39.

NOTE : The applicant must present a satisfactory Regents' credential (see page 50); or a certificate of graduation from an approved school (see page 51); or, in addition to the requirements mentioned above in 1 and 2, he must pass examinations, or present acceptable certificates, showing that he has done an amount of work equivalent to a course of three years' duration in a single subject in preparatory schools of approved standing.* For the above amount of equivalent work, a free choice among the various subjects taught in the preparatory schools of approved standing, and not otherwise counted, will usually be accepted; but combinations of the following subjects if equivalent to three years' time under instruction, are recommended as most suitable for entrance to the courses in the College of Civil Engineering :

- (a) History, or additional English language and literature.
- (b) Additional modern languages or literatures.
- (c) Freehand and linear drawing.
- (d) Chemistry, physics, botany, zoology, descriptive astronomy, or physiology.
- (e) Latin or Greek.

*This additional requirement is equivalent to 12 counts on the Regents' scale in the State of New York.

To the Course Leading to the Degree of Mechanical Engineer (Including Electrical, Marine, and Railway Mechanical Engineering.)

1. In **Solid Geometry, Advanced Algebra, and Plane and Spherical Trigonometry** as much as is contained in the standard American and English text-books. See page 46.

2. In **Advanced French or Advanced German** (German preferred) as given on pages 38 and 39.

NOTE : The applicant must have presented a satisfactory Regents' credential (see page 50) or a certificate (see page 51) of graduation from an approved school. Otherwise he must, in addition to the requirements mentioned in 1 and 2, pass examinations or present acceptable certificates representative of an amount of work equivalent to three years time in a single subject in preparatory schools of approved standing.*

For the above work a free choice among the various subjects taught in the preparatory schools of approved standing, and not otherwise counted, will usually be accepted ; at the same time, combinations of the following subjects are recommended as most suitable for entrance to the courses in Sibley College ; The Alternate Modern Language, Free-Hand Drawing, Physics, Chemistry.

While the above represent the formal requirements, it is by no means advised that the candidate confine himself to this amount of preparation. He is on the contrary, strongly urged to secure before entering on his professional course, as comprehensive a general and liberal education as his circumstances will permit.

III. Time and Conditions of the Examinations.

The examinations are held in *September* (for June see page 52) in Ithaca in the following order. The dates may be found in the calendar.

First Day.—English History, 9 A. M.; Plane Geometry, 3 P. M.

Second Day.—English, 9 A. M. ; Elementary Algebra, 3 P. M.

Third Day.—Solid Geometry, Physics and Chemistry, 8 A. M. ; Ancient History, 10:30 A. M. ; Elementary and Advanced German and Greek, 3 P. M.

Fourth Day.—American History and Civil Government, 9 A. M.; Latin, Trigonometry, and Zoology, 3 P. M.

Fifth Day.—Elementary and Advanced French, 9 A. M. ; Mediæval

* This additional requirement is equivalent to 12 counts in the Regents' scale in the state of New York.

and Modern European History ; Advanced Algebra, Botany, and Geology, 3 P. M.

Candidates for admission to the University, instead of passing the entire examination at one time, may present themselves in different years under the following conditions :

1. For the purposes of the division between two years the examinations in June given by the College Entrance Examination Board and those in September given by the University in the same year may count as one series, the applicant at his option, taking a part in June and a part in September.

2. Candidates are expected at their first presentation to take all the prescribed subjects of the primary entrance examinations before trying the advanced examinations.

3. No account will be taken of the result of such examinations (except in English) unless at least four subjects are satisfactorily passed.

Candidates intending to offer Greek at this preliminary examination may present themselves for examination in the Anabasis. Those intending to offer Latin may offer Caesar, or either Virgil or Cicero.

Students deficient in any of the subjects required for admission, who may be admitted to the University by the Faculty in spite of such deficiencies, *must make up all deficiencies within one year*, and they will not in that case be permitted to remove them by attending University instruction in those subjects but are required to take the necessary instruction outside of the University. For exception in case of students entering the Academic Department see page 80.

ADMISSION WITHOUT EXAMINATION.

I. On Regents' Credentials.

Diplomas and sixty count academic certificates issued by the Regents of the University of the State of New York are accepted in place of examinations in all the subjects required for entrance which are covered by such credentials, including upon the recommendation of the University departments concerned, the subjects of French, German, Physics, Chemistry, Botany, Geology, and Zoology. A statement from the teacher giving in detail the work done and the proficiency attained in these subjects, must be submitted by the holder of the credentials.

No other credentials, including pass cards and certificates, (for exceptions see under Veterinary and Medical Colleges), issued by the Regents' are accepted unless they are presented by the holder of a Regents' diploma or sixty count academic certificate.

If a student fail in any subject in the University that depends upon an entrance subject, for which Regents' credentials have been accepted, the credits for that entrance subject may be cancelled.

To secure exemption from the entrance examinations in English, (see page 33), the Regents' diploma or sixty count academic certificate must cover first year English, second year English, and *either* third year English or English Reading.

[*In 1903*, to secure exemption from the entrance examination in History (page 35), a candidate presenting an acceptable credential for admission without examination must offer for 2 (page 35) both Greek and Roman History and for 4 (page 35), both American History and Civics. These equivalents, although in the case of 2 not fully covering the prescribed requirement, will be accepted until in and after 1904.]

Application for credit in all subjects for which credit is desired must be made at the time of the admission of the applicant, and not be postponed to any later date in his course.

Diplomas, certificates, and statements should be sent by mail to the Registrar before the opening of the term.

II. On School Certificates.

The following rules and regulations have been adopted by the University Faculty of Cornell University on the subject of admission by certificate :

1. Certificates of work done in public and private schools, in or out of the state, will not be accepted in lieu of examinations, unless the applicant has completed a full course in the school, and has been duly graduated after at least one year in the school, and the University authorities are satisfied regarding the standing of the school.

2. The application for the admission of a student by certificate must be made by the principal of a school and not by the candidate himself.

3. The application from the principal must be accompanied by full and specific information with regard to the completeness and thoroughness of the studies and course in which instruction is given. In case a catalogue or circular is published, a copy thereof should also be furnished.

4. Admission by certificate is in all cases provisional. If a student fail in any subject in the University that depends upon an entrance subject for which a certificate has been accepted, the credit for that entrance subject may be cancelled. Certificates from schools whose students prove to be imperfectly fitted will ultimately not be considered.

5. Subjects in which an examination has been passed for admission to the school, may be included in the certificate, but in all cases the full information called for by the blank should be given.

6. *No school certificate will be accepted in place of the entrance examination in English (see pages 33, 50 and 59.)*

7. The committee having charge of the acceptance of certificates may meet at any time during the collegiate year, but the certificate should be forwarded as soon after the graduation of the student as is possible, and at least as early as the first of September.

8. The University does not engage in advance to accept the certificates of any school, and the previous acceptance of such certificates merely raises the presumption that similar certificates may be accepted again, but does not establish a permanent right to such acceptance.

9. Application for credit in all subjects for which credit is desired, must be made at the time of the admission of the applicant, and not be postponed to any later date in his course.

All communications on this subject and all certificates must be addressed to the Registrar, from whom also blank forms for certificates may be obtained.

III. On the Certificates of the College Entrance Examination Board.

The certificates issued as the result of the examinations to be held in June by the College Entrance Examination Board of the Middle States and Maryland will be accepted under the same conditions as if such examinations were held by this University. See page 50.

For further particulars address Secretary of College Entrance Examination Board, Sub-station No. 84, New York City.

IV. As Special Students.

Persons of the requisite age may be admitted as special students, without examination, provided they give evidence of ability to do creditably special work in the University, are recommended to the Faculty concerned by the professor in charge of the department of study in which they desire to take a large part of their work, and have not already been admitted to the University, nor, having applied for admission, been rejected. By Faculty action, the recommendation of a special student is to be referred to a committee for provisional acceptance before final ratification by the Faculty concerned. Such students may graduate in any of the courses, on condition of passing all the required examinations, including those for admission. Students are not permitted to make up deficiencies in entrance subjects

by attending university instruction in those subjects, but are required to take the necessary instruction outside of the University. Special students are subject to the same regulations in regard to examinations and number of hours as students in the other courses.

Special students in the Academic Department are admitted at the age of twenty-three years.

Special students in the College of Law are admitted at the age of twenty years.

Special students in the College of Agriculture are admitted at the age of eighteen years.

For admission as special students in Forestry see under College of Forestry.

Special students in the College of Architecture and Sibley College are admitted at the age of twenty-one years.

The College of Civil Engineering admits as special, students of the age of twenty-one, only graduates of other institutions pursuing advanced work, when the applicants are not candidates for a degree.

Special students in Sibley College will be expected to work with regular classes wherever practicable, and to pursue a regular mechanic arts course, such as is considered by the Director to be suitable for artisans and other optional students, not candidates for a degree.

Candidates for admission as special students should correspond directly with the professor in whose department they expect to take work, in order to secure a recommendation.

ADMISSION TO ADVANCED STANDING.

1. **On Examination.** On presenting evidence of good character, or, in case he comes from another college or university, a letter of honorable dismissal, a candidate may be admitted to any class at the beginning of any term not later than the first term of the senior year, provided he appears, on examination, to be well versed in the following subjects :

a. In the studies required for admission to the freshman class of the course which he proposes to enter. But diplomas and certificates will be received for certain of these studies, as stated on pages 50, 51.

b. In all the studies already required of the class to which admission is sought, or in accepted equivalents therefor.

In a subject in which examinations are held only at stated times the candidates may, at the option of the department concerned, be required to wait until the first regularly recurring examination.

2. **Without Full Examinations.** Applicants for a baccalaureate degree coming from other colleges and universities, may be admitted

provisionally to such standing and upon such terms as the Faculty concerned may deem equitable in each case, regard being had to the applicant's previous course of study, and to the evidence of proficiency exhibited. Every such candidate for a baccalaureate degree is required, at the time of making his application, to forward to the Secretary of the Faculty concerned, (application for admission to the Academic Department should be forwarded to the Registrar of the University) along with a catalogue of the institution in which he has studied, a careful statement, duly certified to, of the studies which he has pursued, and of the degree of proficiency attained therein, including his record at the *entrance* examinations and a letter of honorable dismissal. This statement should be made as full as possible, giving details of subjects taken, authors read, and in mathematics, the textbooks used. To avoid delay in arranging the course, these credentials should be presented at an early date in order that the status of the applicant may be determined as far as is feasible before his arrival. Applications for credit in all subjects for which credit is desired, must be made at the time of the admission of the applicant, and not be postponed to any later date in his course.

A student who has thus been admitted provisionally to a class, is considered to be in full and regular standing in that class, if, having taken the regular studies of the course he give proof, by passing term examinations, that he is able to go on satisfactorily with the class to which he has been temporarily assigned. Should he be unable to pass these examinations, special examinations may then be held or the terms of his admission revised, and he shall take the position and rank to which he may thereby be found entitled.

Admission to the Graduate Department.—Applications for admission to the Graduate Department are to be addressed to the Dean of the University Faculty. See page 69.

RESIDENCE AND GRADUATION.

REGISTRATION EACH TERM.

At the beginning of every term each student must obtain a Certificate of Registration from the Registrar of the University, and no student, after having been once admitted to the University, will be allowed to register after the close of the Registration Day, except by special permission of the Faculty concerned.

REGISTRATION OF STUDIES.

Students in all undergraduate courses register at the beginning of the collegiate year at the Registrar's office for the work of the entire year. No credit will be allowed for work not so registered. Changes in registration will not be allowed later than one week after Registration Day in the first term except by special permission of the Faculty concerned.

EXERCISES OF THE TERM.

In the Academic Department, students may take twelve to eighteen hours; but no student will be graduated until he has passed successfully examinations in work which shall amount to an aggregate of fifteen hours a week during the entire four years, exclusive of the requirement of drill and gymnasium.

In the technical courses, the number of hours required each term may be seen in the detailed statement of those courses.

In all courses, two hours and a half of laboratory work, and, in the technical courses, three hours of drafting or shop work, are regarded as the equivalent of one recitation or lecture.

PAYMENTS TO THE UNIVERSITY.

The annual tuition fee, in the College of Law, in the State Veterinary College and the College of Forestry, and in the Academic Department, (for specials \$125, and for free tuition see below), for both graduates and undergraduates, is \$100, \$55 to be paid at the beginning of the first term in September and \$45 to be paid at the beginning of the second term in February. In all other courses (except for Medicine \$150, see below), for both graduates and undergraduates (in-

cluding candidates for advanced degrees in absentia in which case the whole fee is to be paid in advance), and for special students (for specials in Medicine \$150, see below), it is \$125, \$70 to be paid at the beginning of the first term in September and \$55 to be paid at the beginning of the second term in February.

The annual tuition fee in the Medical College is \$150, \$85 to be paid at the beginning of the first term in September, and \$65 to be paid at the beginning of the second term in February. In New York City, the entire fee is paid at the beginning of the year.

These fees must be paid at the office of the Treasurer within twenty days after the registration day announced in the calendar.

Tuition is free to the students with State scholarships ; to New York State students in the State Veterinary College and in the College of Forestry ; to students pursuing the prescribed course in Agriculture and intending to complete that course ; and to special and graduate students in Agriculture taking at least two-thirds of their entire work in the departments of agriculture, horticulture, and in the courses in agricultural chemistry, entomology, origin of soils, diseases of farm animals, zootechny, and silviculture.

Any student who has received free tuition under the above regulations and who desires to change to a course for which tuition is charged, must first pay to the Treasurer of the University the tuition fees for the full time spent in the free tuition course.

Students taking work in Sibley College are charged \$10 per half-year for material and extra expenses.

An incidental fee of \$7.50 per half year, to cover cost of materials used, is required of all students in Agriculture, except those in the first two years of the regular course.

A fee of \$5, to cover expenses of graduation, degree, etc., is charged to each person taking the baccalaureate degree. This fee must be paid at least ten days before Commencement. The amount will be refunded should the degree not be conferred.

The fee charged for an advanced degree is \$10, and it must in all cases be paid at least ten days before Commencement. The amount will be refunded should the degree not be conferred.

Every person taking laboratory work or practicums in chemistry, physics, zoology, botany, or entomology, must deposit with the Treasurer security for the materials to be used in the laboratory or in the practicums. Supplies in the chemical and physical departments are furnished at New York City list prices. Students residing in University buildings must pay their room bills one half-year in advance. All the members of the University are held responsible for any injury done by them to its property.

EXPENSES.

The expense of text-books, instruments, etc., varies from \$25 to \$75 per annum.

The cost of living in Ithaca, including board, room, fuel, and lights, varies from \$4 to \$10 per week. By the formation of clubs, students are sometimes able to reduce their expenses to \$3.50 per week for room and board, and occasionally to even less than that amount.

A fair estimate of the yearly expenses is from \$300 to \$500, but much depends on the personal tastes of the student.

The cost of board, rent of furnished room, fuel, and lights, in Sage College or Sage College Cottage, which are exclusively for women, varies from \$5 to \$6.50 a week. A student occupying alone one of the best rooms pays \$6.50 a week. If two occupy such a room together, the price is \$5.75. Those occupying less desirable rooms, with two in a room, pay \$5 a week each. Both buildings are warmed by steam, lighted by electricity, and, in most cases, the sleeping apartment is separated from the study.

The responsibility for the conduct of the students living in Sage College and the Cottage rests with the Warden of Sage College.

Letters of inquiry in regard to board and rooms at the Sage College and the Cottage should be addressed to Mr. G. F. Foote, Business Manager of Sage College, Ithaca, N. Y.

GRADUATION.**The First Degree.**

The degrees of Bachelor of Arts, Bachelor of Laws, Bachelor of the Science of Agriculture, Doctor of Veterinary Medicine, Doctor of Medicine, Bachelor of Architecture, and the corresponding degrees of Forest Engineer, Civil Engineer and Mechanical Engineer, are conferred after the satisfactory completion of the respective courses.

The single degree of Bachelor of Arts will be conferred on students in the Academic Department.

All these courses, except the courses in Law and Veterinary Medicine require four years for their completion; and no student is allowed to graduate in less than four years of actual residence (except in case of admission to advanced standing, as elsewhere provided for), without special permission of the Faculty concerned; which permission will not be granted until the applicant has been in the University at least one year; nor will it be granted after the first term of the year in which he proposes to graduate.

The courses in Law and Veterinary Medicine require three years each for their completion.

SCHOLARSHIPS AND PRIZES.

STATE SCHOLARSHIPS.

Under the law of the State the Superintendent of Public Instruction is empowered to award annually a number of free scholarships in Cornell University equal to the number of Assembly districts in the State. These Scholarships entitle the holder to free tuition for four years.

For particulars in regard to the Scholarships, application should be made to the Superintendent of Public Instruction at Albany, N. Y.

Holders of State Scholarships are notified that failure to register before the close of registration day of each term involves the severance of their connection with the University and consequently the forfeiture of their scholarships. The President of the University is required by law to send immediate notice of such vacancies to the Superintendent of Public Instruction and the Superintendent fills vacancies forthwith.

The law provides that "any State student who shall make it appear to the satisfaction of the President of the University that he requires leave of absence for the purpose of earning funds with which to defray his living expenses while in attendance, may, in the discretion of the President, be granted such leave of absence, and may be allowed a period not exceeding six years from the commencement thereof for the completion of his course at said University." Under this provision of the charter, the President of the University will, for the purposes indicated therein, grant leave of absence after an applicant has been regularly admitted to the University. The Scholarship will then be kept good ; but will not be extended for more than *four* years from its date, unless application is made after at least one year from the time of entrance, in case of applicants who have acquitted themselves creditably in the University during this period. Those holding scholarships are therefore advised, if possible, to enter the University at once, and to postpone asking for leave of absence until after one year in the University has been completed.

UNIVERSITY UNDERGRADUATE SCHOLARSHIPS.

Pursuant to the action of the Trustees there will annually be thrown open to competition for all members of the freshman or first year class who are registered in courses leading to first degrees, at a

special examination held *at Ithaca* at the beginning of the freshman year, eighteen scholarships of the annual value of \$200 each.

Students of high ability from the state of New York will have the additional advantage of being able to secure State Scholarships, as there is nothing in the University statutes to prevent a student from holding both a State Scholarship and a University Scholarship.

The name of every successful competitor for these scholarships is inserted in the annual Register of the University, together with the name of the school at which the competitor was fitted for college, and the name of the principal of the school ; and these names remain in the Register so long as the Scholarship is retained.

The statute in regard to scholarships is as follows :

1. There have been established by the University thirty-six undergraduate scholarships each of the annual value of \$200.

2. These Scholarships are named as follows : The Cornell Scholarships ; the Lord Scholarships ; the McGraw Scholarships ; the Sage Scholarships ; the Sibley Scholarships ; the President White Scholarships ; the Horace Greeley Scholarships ; the John Stanton Gould Scholarships ; the Stewart L. Woodford Scholarships.

3. These Scholarships are given for the first two years of any course on the basis of excellence in special examinations held at the beginning of the freshman year.

4. Recipients of the above scholarships must be free from entrance conditions.

5. These scholarships will be given for passing examinations which shall average the highest in any three of the following groups, of which group (a) must be one. Previous to entering this competitive examination, however, candidates are required to pass satisfactorily at the University the regular entrance examination in English, or the entrance examination in English given by the College Entrance Examination Board, or by offering satisfactory Regents' credentials covering first year English, second year English, and either third year English or English reading. See page 33 and 52. *Other diplomas and School certificates* are not accepted in place of this English examination.

(a). Algebra through quadratic equations, and plane geometry.

(b). Solid geometry, advanced algebra, plane and spherical trigonometry.

(c). Greek.

(d). Latin.

(e). French.

(f). German.

The above examinations cover substantially the same ground as the entrance examinations in the respective subjects. See pages 35, 36, 37, 38, 39 and 46.

6. The holder of a University Undergraduate Scholarship shall forfeit the right to the same in case said scholar shall during incumbency change the course registered in at the time of receiving the award, unless the records of entrance examinations shall show that, at the time of the holder's admission to the University, all the subjects required for admission to the course last chosen were passed, and all candidates must state before the scholarships are awarded what course they intend to pursue.

7. All persons shall be debarred from the competition for these Scholarships, who shall have participated in any previous competition for the same or shall have been in the previous year or years registered as a student in this University or in any other University or College.

8. These Scholarships will be forfeited at any time in case two-thirds of the Faculty present at any meeting, notice having been given at the meeting immediately before, shall decide that the holders have been guilty of negligence, or failure to maintain a high standard of scholarship, or of conduct of any kind that is unbecoming students holding such Scholarships.

9. Whenever any of these Scholarships shall for any reason become vacant, the vacancy shall be filled as the Faculty may determine.

10. The moneys due on Scholarships are paid at the office of the Treasurer of the University in two equal payments, on the 15th of January, and the 1st of June.

The Frank William Padgham Scholarship has an annual value of \$150 and will be assigned to the best competing candidate in the scholarship examination in the studies required for entrance to the regular course in Mechanical Engineering, who shall have had his preparatory education in the public schools of Syracuse, New York. For particulars address the Registrar. See also under Sibley College.

The Alumnæ Scholarship is an undergraduate scholarship of \$100 for the present University year, and a like sum for each year hereafter so long as the sum is raised by the Associate Alumnæ by annual subscription. The scholarship is to be given under the following conditions :

1. It shall be awarded to a self-supporting woman who has already spent at least one year in the University as a student.

2. The basis of award shall be excellence of scholarship as shown by the University records, and a need of financial aid.

3. The nomination for the scholarship shall be made by a committee of the Alumnæ, who, after consultation with the Dean of the University Faculty and the Registrar as to the standing of the applicants, shall decide as to which one of them will be most benefited by the financial aid of the scholarship.

4. The approval of said nomination by the President of the University shall constitute an appointment.

The Boardman Senior Law Scholarship. A Senior law scholarship of the value of one hundred dollars, the gift of Judge Douglass Boardman, the first Dean of the College, is awarded annually by the Faculty of Law in June to the Junior who during the preceding two years has, in the judgment of the Faculty, done the most satisfactory work in the College of Law. It is available during the Senior year and is payable in the same way as other University Scholarships.

PRIZES.

The Woodford Prize, founded by the Hon. Stewart Lyndon Woodford and consisting of a gold medal of the value of one hundred dollars will be given annually for the best English oration, both matter and manner being taken into account.

The prize may be competed for under the following conditions :

1. Any member of the graduating class who is to receive a degree at the coming Commencement, and who does not already hold a first degree, may be a competitor.

2. Every competitor shall be required to submit, at the Registrar's office on or before April 1st, an original oration upon a subject which shall have previously been approved by the Assistant Professor of Elocution and Oratory.

3. The competing orations shall be limited to fifteen hundred words and shall be written with a typewriter.

4. The orations submitted shall be read in private by their authors to a committee appointed by the Faculty, after which the committee shall examine the orations and shall select the best, not to exceed six in number, for delivery in public. The names of the successful writers shall be announced as early as practicable.

5. The contest for the prize will take place on the evening of the first Friday of May, under the direction of the President of the University.

6. The prize shall be awarded by a committee of three, to be appointed by the President, and wherever practicable, from persons not resident in Ithaca.

7. The prize shall not be conferred unless the successful competitor shall complete his course and take a degree at the Commencement next following.

8. A copy of each of the orations selected for the competition shall, within one week after the selection, be deposited by its author with the committee charged with the selection, which shall, after the completion of the competition, deposit the orations permanently in the University Library.

The '86 Memorial Prize is an undergraduate prize for declamation to be awarded at a public contest held in May of each year, being the income of a sum of money left as a memorial by the class of 1886, and amounting to eighty-six dollars annually. The conditions of the contest are as follows, viz. :—

1. The Assistant Professor of Elocution and Oratory is empowered to select from the students pursuing the courses in Public Speaking, twelve speakers, whose general excellence, in his judgment, warrants their competing for the prize.

2. The announcement of this selection is to be made not later than May 1st.

3. The contest for the prize takes place on the evening of the fourth Friday in May, under the direction of the Assistant Professor of Elocution and Oratory.

4. The prize is awarded by a committee appointed by the President of the University.

The Horace K. White Prizes in Veterinary Science. See under the State Veterinary College.

The Sibley Prizes in Mechanic Arts.—See under Sibley College.

The Mrs. A. S. Barnes Shakespeare Prize.—A prize of fifty dollars, offered by Mrs. A. S. Barnes, is given annually for the best essay on some subject connected with the plays of Shakespeare, written by a student of Cornell University. The essay must be written with a typewriter, must be completed and deposited with the Registrar on or before the first day of June, and must bear, in every case a fictitious signature, accompanied with the name of the writer in a sealed envelope.

The subject of the Essay, will be :

For 1902-1903. The imperial movement in Julius Cæsar and Antony and Cleopatra ; the dramatic situation and dramatic movement in Antony and Cleopatra, as a tragedy ; the subserviency of its dramatic perspective to moral proportion and a comparative presentation of the individual and civic character of Antony and of Octavius.

For 1903-1904. Shakespeare's use of English history in the service of

his own independent dramatic motives, in his English historical plays, including *Macbeth* and *King Lear*.

For 1904-1905. The fatalism of passion exhibited in Shakespeare's tragedies, including *Antony and Cleopatra*.

The Fuertes Medals.—See under the College of Civil Engineering.

The '94 Memorial Prize is an undergraduate prize for debate to be awarded at a public contest held in January of each year, being the income of a fund established by the class of 1894 and amounting to about twenty-five dollars annually. The conditions governing the debate are as follows :

1. Any undergraduate student of Cornell University may become a competitor for this prize.

2. From the whole body of competitors there shall be selected by the University Faculty, in such manner as may seem best, the debaters, not to exceed eight in number, who shall take part in the final competition.

3. The final competition shall take place at a public debate to be held annually, under the direction of the President of the University, at such date and place and in such manner as shall be from time to time determined by the University Faculty.

4. The question for each competition shall be selected by the Professor of Oratory, subject to the approval of the University Faculty, and shall be publicly announced by him at least four weeks before the date set for each debate.

5. The prize shall be awarded by a committee of three judges appointed annually by the President of the University, to that competitor who shall be deemed by them the most effective debater, account being taken both of his thought and of its expression.

6. Any undergraduate who has already taken the prize may be selected by the University Faculty as an additional speaker, but may not be awarded the prize.

The Guilford Essay Prize, established by the will of the late James B. Guilford, who bequeathed to Cornell University a sum of money the income from which was to be applied to this purpose, is an undergraduate prize amounting to about \$150 annually to be awarded each year for excellence in English prose composition. The prize will be open for competition to all undergraduates and will be awarded under such regulations and restrictions as the University Faculty may establish. If, however, none of the essays submitted in any year shall, in the judgment of the Faculty, reach a high standard of excellence, the prize shall not be awarded but the income for that year will be constituted a special scholarship to be assigned to that

graduate student who, in the judgment of the Faculty, writes the best English prose.

The Caroline Rollin Corson Dante Prize, established by Professor Hiram Corson and consisting of a gold medal of the value of \$50, will be awarded annually for the best essay on some assigned subject connected with the *Divina Commedia* or other works of Dante. The recipient of the medal must be a graduate student or a member of the senior class and must have a good knowledge of the Italian language. This prize is never to be awarded in money.

The Hiram Corson Browning Prize, established by Professor Hiram Corson and consisting of a gold medal of the value of \$50, will be awarded annually for the best essay on some assigned subject connected with the poetry of Robert Browning. The recipient of the medal must be a graduate student or a member of the senior class. This prize is never to be awarded in money.

GRADUATE DEPARTMENT.

Courses appropriate for graduate students and leading to advanced degrees are provided in the various departments, as indicated in the list of courses of instruction, and in the description of the departments and colleges. An inspection of these courses will show that the amount of instruction offered is greatly in excess of the amount of which any person can take advantage while an undergraduate student. Many of the courses are open to undergraduates who have prepared themselves by taking the necessary preliminary electives, but a large number of courses are specially adapted to the wants of graduate students. No sharp line of demarcation separates the two classes, but in all cases the necessary prerequisite work must have been taken. In nearly or quite every branch of study the advanced courses of lectures and the seminars and laboratories afford abundant opportunities for carrying on profitable work of a high grade during two or three years after the baccalaureate degree has been taken. The facilities thus afforded commend themselves specially to graduates of those colleges elsewhere which do not offer a large range of electives during the undergraduate course.

LABORATORY AND SEMINARY FACILITIES.

In the graduate work the aim is to surround the student with an atmosphere of earnest devotion to the cause of the advancement of knowledge, and to excite a truly scholarly spirit. The greater part of such work is carried on in the numerous well-equipped laboratories and seminars, in which the student, with the aid and under the intimate personal guidance and direction of the professor, is encouraged in the prosecution of original investigation of an advanced nature.

Graduate students have access to the alcoves of the library, as well as to the special collections in the seminary rooms, and thus have exceptional opportunities for prosecuting advanced work. The great library building, with its rich collections, affords an attractive and inspiring environment.

FELLOWSHIPS AND GRADUATE SCHOLARSHIPS.

Applications for fellowships and graduate scholarships should contain a full statement of the branches of study which the candidate

intends to carry on, if appointed ; and if any literary or scientific work has been produced which could be put in evidence, specimens should accompany the application. Those candidates who are graduates of other colleges or universities should submit recommendations from the instructors best acquainted with their ability and attainments in the special subjects which they desire to pursue. It should be borne in mind by such applicants that information cannot be too exact or detailed in the case of students not personally known to the appointing body.

The Statute in regard to Fellowships and Graduate Scholarships is as follows :

1. There have been established at this University the following Fellowships and Graduate Scholarships :

(a). Eight University Fellowships, denominated respectively, the Cornell Fellowship ; the McGraw Fellowship ; the Sage Fellowship ; the Schuyler Fellowship ; the Sibley Fellowship ; the Goldwin Smith Fellowship ; the President White Fellowship ; and the Erastus Brooks Fellowship.

(b). Five University Fellowships.

The above thirteen University Fellowships have been assigned to the following Departments or groups of Departments : Mathematics, Chemistry, Physics, Civil Engineering, Neurology and Physiology and Vertebrate Zoology (including Anatomical Methods and Human Anatomy and Microscopy, Histology, and Embryology) with Invertebrate Zoology and Entomology, Botany and Geology, Architecture, Agriculture and Horticulture and Veterinary Science, English, Germanic Languages, Romance Languages, one each ; Mechanical and Electrical Engineering, two.

(c). Two President White Fellowships, denominated ; first, the President White Fellowship of Modern History ; second, the President White Fellowship of Political and Social Science.

(d). Three Susan Linn Sage Fellowships in Philosophy.

(e). Two Fellowships in Political Economy.

(f). Two Fellowships in Greek and Latin.

(g). One Fellowship in American History.

The President White Fellowships in History and in Political and Social Science have an annual value of \$600 each ; the others have an annual value of \$500 each.

(h). Six Graduate Scholarships in the Susan Linn Sage School of Philosophy, each of the annual value of \$300.

(i). Ten Graduate Scholarships, each of the annual value of \$300, have been assigned to the following Departments or groups of Depart-

ments: Mathematics, Chemistry, Physics, Civil Engineering, Latin and Greek, Archæology and Comparative Philology, Neurology and Physiology and Vertebrate Zoology (including Anatomical Methods and Human Anatomy and Microscopy, Histology, and Embryology), with Invertebrate Zoology and Entomology, Botany and Geology, English, History, one each.

(j). The Oliver Graduate Scholarship in Mathematics, founded November, 1896, in memory of Professor James Edward Oliver, has an annual value of \$300 and is awarded under the same conditions as other graduate scholarships.

2. All candidates for Fellowships and Graduate Scholarships must be graduates of this University, or of some other institution having equivalent courses of instruction, and must be of high character and marked ability in some important department of study.

3. Fellows and Graduate Scholars will be selected by the University Faculty on the recommendation of the department in which the applicants desire to carry on the principal part of their work.

4. All applications and testimonials must be filed with the Registrar on or before the 15th of April of the collegiate year preceding the one for which the application is made. Blank forms for application may be obtained from the Registrar.

5. The term of each Fellowship and Graduate Scholarship is one year; but the term may be extended to two years, providing the extension does not increase the number of Fellows and Graduate Scholars beyond that named in paragraph 1 of this act.

6. The moneys due on Fellowships and Graduate Scholarships are paid at the office of the Treasurer of the University in two equal payments, on the 15th of January, and the 1st of June.

7. In view of the fact that practical University instruction will be of use in training said Fellows and Scholars for future usefulness, each holder of a Fellowship or Graduate Scholarship shall be liable to render service to the University in the work of instruction or examination to the extent of four hours per week through the collegiate year. The distribution and assignment of this service shall be determined by the head of the department in which the Fellow or Scholar is doing the principal work. It is expected that the President White Fellows in History and Political Science will do a large part of their study in the President White Library, and to this end it is required that, except when, with the consent of the Librarian of the University, they are excused or assigned to other duties by the Professors of History and Political Science, said Fellows shall be in attendance in the Library not less than four hours each per day.

8. No person shall hold at one time more than one Fellowship or Graduate Scholarship, except in the case hereafter specified under paragraph 12 of this statute, and any Fellow or Scholar may be dispossessed of the income of the Fellowship or Graduate Scholarship by action of the University Faculty, if guilty of any offense, or of any course of conduct, which in the opinion of said Faculty shall render the holder unworthy of retaining such Fellowship or Graduate Scholarship ; but final action in such cases by the Faculty shall be by ballot, and shall require a two-thirds vote.

9. Vacancies in Fellowships and Graduate Scholarships that occur after October 1st, in order to be filled, shall require a three-fourths vote of the Faculty present.

10. All persons elected to Fellowships are required, upon accepting their appointments, to file a bond of one thousand dollars (with two sureties to be approved by the Treasurer), to pay the University in case of their resignation before the expiration of the time for which they were appointed, any sums which they may have received.

11. In all cases where Fellowships and Graduate Scholarships are not awarded, or when from any cause the income of one or more Fellowships or Graduate Scholarships may cease to be paid, or when the aggregate sum paid shall be less than the amount contemplated by this act, the surplus thus accruing shall be added to the principal of the loan fund for needy and meritorious students.

12. Either or both of the President White Fellowships in History and Political Science may, in the discretion of the University Faculty, be made a Traveling Fellowship for the purpose of study and investigation, the holder thereof making from time to time to said Faculty such reports of progress as may be required. In the case of a student of very exceptional ability and promise in the fields of either of these Fellowships, the two Fellowships may, in the discretion of said Faculty, for the sake of enabling very thorough research, be combined for a single year into one.

SPECIAL FELLOWSHIP IN ARCHITECTURE.

See under College of Architecture.

Honorary Fellowships.

A class of Fellowships termed Honorary Fellowships was established in 1898. These Fellowships are open only to persons already holding the Doctor's degree. Holders of such Fellowships are to receive no emoluments and are not to be charged tuition. These Fellowships are to be conferred only upon persons actually in attendance at the University.

Admission.

Graduates in the several courses of this University, or of other institutions in which the requirements for the baccalaureate degree are substantially equivalent, may upon the recommendation of the Committee on Graduate Work and Advanced Degrees, be admitted to the graduate department. Such applicants may further be admitted to candidacy for the Master's and Doctor's degree on recommendation of the same committee, in case the previous course of study and preparation in the major and minor subjects to be pursued, is accepted as adequate by the departments concerned. Graduate students who are not candidates for a degree, as well as those who are, are required to work under the direction of a special committee of the University Faculty, appointed for the purpose of supervising and directing their work. Tuition fees are charged in all cases, including candidacy for degrees *in absentia*.

Applications for admission to the graduate department are to be addressed primarily to the Dean of the University Faculty. Full details should be forwarded of the candidate's previous course of study, the degree desired, and the special preparation already had in the major and minor subjects to be pursued.

The applicant would naturally communicate also with the professors in whose departments he intends to study, as they must ultimately approve of his application.

In acting upon an application for graduate work, the first question to be decided is whether the degree already taken by the applicant is substantially the equivalent of one of the degrees given at this University, so that the applicant may be admitted to the graduate department. Full information upon this point is therefore required, including a general statement of the character of the course pursued, with special reference to the amount of mathematics and languages. Blank forms of application may be obtained from the Dean of the University Faculty.

After this point has been decided, the second question is whether the applicant is qualified to enter upon advanced work in the special departments of study in which the advanced degree is desired. In order to decide this question, a specific and detailed statement is to be made of the previous course of study and preparation in the major and minor subjects to be pursued. This statement is then submitted to the departments concerned for approval.

Official evidence of all the above statements must ultimately be presented.

After the status of the applicant is determined by the general committee, he is then put under the supervision of the special committee conducting the work which he desires to pursue. This special committee is made up of the professors in charge of the work in the major and minor subjects. It has been decided by the Faculty that instructors are not eligible for membership on the special committees nor on the committees conducting examinations. The chairman of the special committee, after consultation with the other members of the committee, is assumed to represent their views of action, and to be the regular channel of communication between candidates and the general committee; conveying or indorsing, for instance, petitions from candidates, and forwarding recommendations for changes in the announcements of major and minor subjects, or additions suggested to the membership of the special committee itself, either for the guidance of the work of candidates or to complete the number of examiners.

The function of the general committee is to decide matters of precedent or procedure or policy, securing Faculty action where necessary, and to be the channel of communication between the special committees and the University Faculty.

Advanced Degrees.

Courses of graduate study leading to advanced degrees are provided in the following departments: Semitic Languages, Classical Archæology and History of Art, Comparative Philology, Greek, Latin, Germanic Languages, Romance Languages, English Literature and English Philology, Philosophy, Science and Art of Education, History and Political Science, Mathematics and Astronomy, Physics, Chemistry, Botany and Arboriculture, Entomology and General Invertebrate Zoology, Physiology and Vertebrate Zoology and Neurology, Anatomical Methods and Human Anatomy, Microscopy and Histology and Embryology, Geology and Paleontology and Mineralogy, Agriculture, Horticulture, Veterinary Science, Architecture, Civil Engineering, including Bridge, Railroad, Sanitary, Hydraulic and Geodetic Engineering, and in Mechanical Engineering, including Electrical, Steam, and Marine Engineering, Naval Architecture, and Railway Machinery.

Candidates for advanced degrees must present themselves for examination in one major and two minor subjects (except for the Master's degree, for which one major and one minor are required), which must have been determined upon, with the approval of a committee of the University Faculty, as early as October 15 of the year in which

the degree is expected to be given, if it be the Master's degree, or of the year preceding that in which the degree is expected to be given, if it be the Doctor's degree.

The above date is the limit for the acceptance of applications and for the selection of majors and minors, in the case of applicants who desire to receive credit for attendance during the whole of the academic year then entered upon.

The work of candidates for advanced degrees in the general courses must be devoted to those subjects (one major and one or two minors), which may be comprised within the limits of one department of instruction, or may extend to two or three; with the provision, however, that, except in case of special permission to the contrary granted by the University Faculty, the subjects shall be so related to one another as to imply a definite aim on the part of the student. The subject of the thesis required must be filed with the Registrar, with the written approval of the special committee in charge of the work of the candidate, and be announced to the University Faculty as early as December 1 of the year in which the degree is expected to be given, and the paper in its completed form must be presented as early as May 1. Theses accepted are to be delivered to the Registrar on or before the Friday preceding Commencement.

The degree of Master is intended to represent a year of faithful work of an advanced character performed by a student who has previously taken a degree fully equivalent to that which is given in this University at the completion of four years of undergraduate work. The degree of Doctor is intended to represent not a specified amount of work, covering a specified time, but long study and high attainment in a special field, proved, in the first place, by the presentation of a thesis which displays the power of independent investigation, and in the second place, by passing corresponding examinations upon the ground covered by the three subjects chosen at the beginning of the candidacy and approved by the University Faculty.

Successful candidates for the degree of Master must deposit one copy of the thesis in the University Library.

Successful candidates for the degree of Doctor must print their thesis and deposit fifty copies in the University Library. In the title page of each of these copies shall appear the statement that the thesis was presented to the University Faculty of Cornell University for the degree in question. Unless the printed copies be previously deposited in the University Library, a type-written copy of the the thesis must be delivered to the Registrar on or before the Friday preceding the Commencement at which the degree is conferred. This type-written copy is to become the permanent property of the University.

A text-book, presumably written and published without reference to the degree for which it was presented, will not be accepted in lieu of a thesis.

The final examinations for these degrees may be both oral and written, and in the non-technical courses are to be in charge of a committee of not less than three members, except for the Master's degree, where two members may suffice. These examinations occur in the second week before Commencement, except in the case of candidates who take their examination in a year subsequent to that in which the required amount of resident study was completed. In case of necessity, the examinations may be held during the week next preceding that now fixed for holding them.

In the final examination for advanced degrees, the examination of the thesis shall regularly precede the further examination of the candidate. In the case of students who take the examination in the year subsequent to that in which the required amount of study has been completed, the special committee is authorized to arrange such examinations at any time during the University year ; provided that two weeks' notice be given to the chairman of the general committee.

The special requirements for these degrees are as follows :

The Master's Degree.

Hereafter, in place of the degrees of Master of Arts, Master of Philosophy, Master of Letters, and Master of Science, the one degree of Master of Arts is to be conferred. See pages 69 and 70.

Candidates for the Master's Degree whose major subject is in a department under the direction of the College of Agriculture, the College of Architecture, the College of Civil Engineering, or of Sibley College, are required to register for the corresponding Master's Degree, that is, M.S. in Agr., M.S. in Arch., M.C.E., or M.M.E.

The degree of Master of Science in Architecture is to be conferred as heretofore on those who have taken the corresponding baccalaureate degree here, or at some other college or university where the requirements for the said baccalaureate degree are equal to those of this University, in case the candidate has spent at least one year at the University, pursuing an accepted course of study, upon presenting a satisfactory thesis and passing the required special final examinations as above.

The degree of Master of Civil Engineering, Master of Mechanical Engineering, or Master of Science in Agriculture is conferred, after at least one year of resident study, on candidates who have received the corresponding first degree, upon presenting a satisfactory thesis

and passing the required special final examination as above. In special cases graduates of this University, on the recommendation of the special committee that would have charge of their work, may, by vote of the University Faculty in each case, become candidates for the degree of M.C.E., M.M.E., and M.S. in Agr., after two years of professional practice and study *in absentia*.

Candidates for degrees *in absentia* are to appear in person at the University to be examined, and to receive the diploma at Commencement.

The time spent in study for the Master's degree, whether that degree be taken or not, may be counted in the time required for the Doctor's degree, provided the special committee in charge of the work approve, certifying the work done as suitable to such Doctor's degree.

The Degree of Doctor of Philosophy.

Hereafter, in place of the degrees of Doctor of Philosophy and Doctor of Science, the one degree of Doctor of Philosophy is to be conferred.

The degree of Doctor of Philosophy is conferred on graduates of this University, and of other universities and colleges whose requirements for the baccalaureate degree are equal to those of this University, on the following conditions :

1. In order to become a candidate, the applicant must have pursued a course of study substantially equivalent to that required for graduation in this University in the Academic Department.

2. The candidate is expected to spend at least three years at the University, pursuing a course of study marked out by the University Faculty. Graduate work in a university elsewhere may, by a special vote of the University Faculty, be accepted ; but at least one year's residence at this University is in all cases required.

3. He must present a thesis of such a character as shall display power of original and independent investigation, and must pass the requisite special final examinations. Before the degree is conferred, a type-written copy of the thesis must be deposited in the University Library, unless the required number of printed copies be already deposited. The diploma for the degree shall be withheld until the required number of copies be so deposited. [See also pages 70 and 71].

The work of graduate students is expected to be in large measure independent of the regular courses of instruction. The special announcement of each department and college will, however, indicate the courses which are available as a basis for graduate work.

ACADEMIC DEPARTMENT.

FACULTY OF ARTS AND SCIENCES.

JACOB GOULD SCHURMAN, A. M., D.Sc., LL. D., President.

WALTER FRANCIS WILLCOX, LL. B., Ph. D., Dean, and Professor of Political Economy and Statistics.

GOLDWIN SMITH, D. C. L., LL. D., Professor of English History, Emeritus.

GEORGE CHAPMAN CALDWELL, B. S., Ph. D., Professor of General Chemistry and of Agricultural Chemistry.

BURT GREEN WILDER, B. S., M. D., Professor of Neurology, Vertebrate Zoology, and Physiology.

HIRAM CORSON, A. M., LL. D., Professor of English Literature.

THOMAS FREDERICK CRANE, A. M., Dean of the University Faculty, and Professor of the Romance Languages and Literatures.

JOHN HENRY COMSTOCK, B. S., Professor of Entomology and General Invertebrate Zoology.

WATERMAN THOMAS HEWETT, A. B., Ph. D., Professor of the German Language and Literature.

EDWARD HITCHCOCK, JR., A. M., M. D., Professor of Physical Culture and Hygiene, and Director of the Gymnasium.

EDWARD LEAMINGTON NICHOLS, B. S., Ph. D., Professor of Physics.

JAMES MORGAN HART, A. M., J. U. D., L. H. D., Professor of Rhetoric and English Philology.

THE REV. CHARLES MELLEN TYLER, A. M., D. D., Sage Professor of the History and Philosophy of Religion and of Christian Ethics.

JEREMIAH WHIPPLE JENKS, A. M., Ph. D., Professor of Political Economy and Politics.

LUCIEN AUGUSTUS WAIT, A. B., Professor of Mathematics.

GEORGE LINCOLN BURR, A. B., Professor of Mediæval History.

CHARLES EDWIN BENNETT, A. B., Professor of Latin.

SIMON HENRY GAGE, B. S., Professor of Histology and Embryology.

GEORGE WILLIAM JONES, A. M., Professor of Mathematics.

JAMES EDWIN CREIGHTON, A. B., Ph. D., Sage Professor of Logic and Metaphysics.

- EDWARD BRADFORD TITCHENER, M.A., Ph.D., Sage Professor of Psychology.
- GEORGE FRANCIS ATKINSON, Ph.B., Professor of Botany with special reference to Comparative Morphology and Mycology.
- RALPH STOCKMAN TARR, B.S., Professor of Dynamic Geology and Physical Geography.
- THE REV. NATHANIEL SCHMIDT, A.M., Professor of the Semitic Languages and Literatures.
- GEORGE PRENTICE BRISTOL, A.M., Professor of Greek.
- CHARLES DE GARMO, Ph.D., Professor of the Science and Art of Education.
- EVANDER BRADLEY MCGILVARY, A.M., Ph.D., Sage Professor of Moral Philosophy, and Secretary of the University Faculty.
- LOUIS MUNROE DENNIS, Ph.B., B.S., Professor of Inorganic and Analytical Chemistry.
- JOSEPH ELLIS TREVOR, Ph.D., Professor of General Chemistry and Physical Chemistry.
- WILLIAM PERCY VAN NESS, Major U. S. A., Professor of Military Science and Tactics.
- JOHN ROBERT SITLINGTON STERRETT, Ph.D., LL.D., Professor of Greek.
- CHARLES HENRY HULL, Ph.D., Professor of American History.
- FRANK ALBERT FETTER, A.B., Ph.D., Professor of Political Economy and Finance.
- GEORGE SYLVANUS MOLER, A.B., B.M.E., Assistant Professor of Physics.
- HERBERT CHARLES ELMER, A.B., Ph.D., Assistant Professor of Latin.
- JAMES McMAHON, A.M., Assistant Professor of Mathematics.
- WILLIAM RIDGELY ORNDORFF, A.B., Ph.D., Assistant Professor of Organic and Physiological Chemistry.
- WILLIAM ALEXANDER HAMMOND, A.M., Ph.D., Assistant Professor of Ancient and Mediæval Philosophy.
- ERNEST MERRITT, M.E., Assistant Professor of Physics.
- WILLARD WINFIELD ROWLEE, B.L., D.Sc., Assistant Professor of Botany with special reference to Comparative Histology and Systematic Botany.
- DUNCAN CAMPBELL LEE, A.M., Assistant Professor of Elocution and Oratory.
- FREDERICK BEDELL, Ph.D., Assistant Professor of Physics.
- GILBERT DENNISON HARRIS, Ph.D., Assistant Professor of Palæontology and Stratigraphic Geology.

ADAM CAPEN GILL, Ph.D., Assistant Professor of Mineralogy and Petrography.

JOHN HENRY TANNER, B.S., Ph.D., Assistant Professor of Mathematics, and Secretary of the Faculty of Arts and Sciences.

WILDER DWIGHT BANCROFT, A.B., Ph.D., Assistant Professor of Physical Chemistry.

FREDERICK CLARKE PRESCOTT, A.B., Assistant Professor of Rhetoric.

EVERETT WARD OLMSTED, Ph.B., Ph.D., Assistant Professor of the Romance Languages.

WILLIAM STRUNK, Jr., Ph.D., Assistant Professor of Rhetoric and English Philology.

CHARLES LOVE DURHAM, A.B., Ph.D., Assistant Professor of Latin.

EMIL MONNIN CHAMOT, Ph.D., Assistant Professor of Chemistry.

ALFRED GUEDEMAN, Ph.D., Acting Assistant Professor of Latin.

ALBERT LEFEVRE, Ph.D., Assistant Professor of Philosophy.

ERNEST ALBEE, Ph.D., Assistant Professor of Philosophy.

ISAAC MADISON BENTLEY, Ph.D., Assistant Professor of Psychology.

HEINRICH REIS, Ph.D., Assistant Professor of Geology.

HENRY AUGUSTUS SILL, Ph.D., Assistant Professor of History in charge of Ancient History.

† RALPH CHARLES HENRY CATTERALL, A.B., Assistant Professor of History in charge of Modern European History.

GUY MONTROSE WHIPPLE, Ph.D., Lecturer in the Science and Art of Education.

HOMER JAMES HOTCHKISS, A.M., M.M.E., Instructor in Physics.

HENRY HAYDEN LANNIGAN, Instructor in Gymnastics and Assistant in Physical Examinations.

JOHN SANDFORD SHEARER, B.S., Ph.D., Instructor in Physics.

JOHN IRWIN HUTCHINSON, A.B., Ph.D., Instructor in Mathematics.

FRANK EMIL LODEMAN, A.M., Ph.D., Instructor in Romance Languages.

VIRGIL SNYDER, A.M., Ph.D., Instructor in Mathematics.

BERT BRENETTE STROUD, D.Sc., Instructor in Physiology, Vertebrate Zoology, and Neurology.

ELIAS JUDAH DURAND, A.B., D.Sc., Instructor in Botany and Assistant Curator of the Cryptogamic Herbarium.

- ALFRED AUSTIN MOORE, A.B., Instructor of Romance Languages.
- † GEORGE BURRIDGE VILES, A.B., Ph.D., Instructor in German.
- BLIN SILL CUSHMAN, B.S., Instructor in Chemistry.
- ELLEN BRAINARD CANFIELD, Instructor in Sage College in charge of Gymnasium.
- THEODORE WHITTELYSEY, A.B., Ph.D., Instructor in Chemistry.
- CLARK SUTHERLAND NORTHUP, A.B., Ph.D., Instructor in English.
- HECTOR RUSSELL CARVETH, A.B., Ph.D., Instructor in Physical Chemistry.
- KARL MCKAY WIEGAND, B.S., Ph.D., Instructor in Botany and Assistant Curator of the Phanerogamic Herbarium.
- CHARLES NELSON COLE, Ph.D., Instructor in Latin.
- EUGENE PLUMB ANDREWS, A.B., Instructor in Archæology and Curator of the Museum of Casts.
- OTHON GUEPP GUERLAC, Licencié ès lettres, Instructor in Romance Languages.
- ROBERT CLARKSON BROOKS, A.B., Instructor in Political Economy.
- ALEXANDER DYER MACGILLIVRAY, Ph.B., Instructor in Entomology.
- GEORGE MAXWELL HOWE, Ph.D., Instructor in German.
- DONALD ALEXANDER McRAE, A.B., Instructor in Greek.
- BENTON SULLIVAN MONROE, Ph.D., Instructor in English.
- HENRY ROSE JESSEL, B.S., Ph.D., Instructor in Chemistry.
- † CLINTON LEROY BABCOCK, Ph.D., Instructor in Latin.
- ERNEST BLAKER, Ph.D., Instructor in Physics.
- GEORGE WALTER STEWART, Ph.D., Instructor in Physics.
- ARTHUR LYNN ANDREWS, M.L., Ph.D., Instructor in English.
- WILLIAM BENJAMIN FITE, Ph.D., Instructor in Mathematics.
- WILLIAM ROSS LEE, A.M., Instructor in Elocution and Oratory.
- JOHN EDGAR TEEPLE, B.S., Instructor in Chemistry.
- HENRY FREEMAN STECKER, Ph.D., Instructor in Mathematics.
- WILLIAM ALBERT RILEY, B.S., Instructor in Entomology.
- LEWIS LEAMING FORMAN, Ph.D., Instructor in Greek.
- JAMES PERCIVAL KING, Ph.D., Instructor in German.
- PAUL RUSSEL POPE, A.B., Instructor in German.
- CHESTER MURRAY, Ph.B., Instructor in Romance Languages.
- LANE COOPER, Ph.D., Instructor in English.

† Absent on leave.

GEORGE ASHTON OLDHAM, A.B., Instructor in Elocution and Oratory.

WILLIAM COOK THRO, A.M., Instructor in Histology and Embryology.

HUGH DANIEL REED, B.S., Instructor in Systematic Zoology.

FRED CLARKSON FOWLER, Mechanician in the Department of Physics.

EDWARD GODFREY COX, A.M., Assistant in English.

GEORGE HOWARD BURROWS, B.S., Assistant in Chemistry.

FRANK ALLEN, Ph.D., Assistant in Physics.

JOHN ROBERT BENTON, Ph.D., Assistant in Physics.

WILLIAM ALLEY FRAYER, Assistant in Elocution and Oratory.

ADDAMS STRATTON McALLISTER, M.M.E., Assistant in Physics.

GEORGE CHARLTON MATSON, B.S., Assistant in Geology.

WILLIAM FREDERIC WISMAR, A.B., Assistant in Histology and Embryology.

GEORGE L MANNING, Ph.D., Assistant in Physics.

BENTON DALES, Ph.D., Assistant in Chemistry.

JOSEPH HEYWOOD RUSSELL, A.B., Assistant in Chemistry.

FRED WILLIAM FOXWORTHY, B.S., A.M., Assistant in Botany.

JAY EMERY ROOT, A.B., Assistant in Chemistry.

ROY EDWARD FOWLER, B.S., Assistant in Chemistry.

ROBERT G ALLEN, Assistant in Meteorology.

WILLIAM CHAUNCEY GEER, A.B., Assistant in Chemistry.

GERTRUDE VERNON KAHN, A.B., Assistant in English Literature.

JOHN WALLACE BAIRD, Ph.D., Assistant in Psychology.

PERLEY ORMAN RAY, A.B., Assistant in American History.

PAUL FREDERICK GAEHR, A.B., Assistant in Physics.

ANDREW GILBERT LAUDER, B.S.A., Assistant in Chemistry.

FRANK SMITH MILLS, A.B., Assistant in Geology.

CHARLES EDWARD SMITH, A.M., Assistant in Geology.

WILLIAM ATWOOD HILTON, Ph.D., Assistant in Histology and Embryology.

WILLIAM ALFONSO ROWE, Assistant in Military Science.

GEORGE EDWARD GIBSON, Assistant in Military Science.

JOHN WESLEY YOUNG, A.M., Assistant in Mathematics.

CHARLES THOM, Ph.D., Assistant in Botany.

CALVIN HENRY KAUFFMAN, A.B., Assistant in Botany.

SPECIAL LECTURERS.

- SILENCE DALES, *Lincoln, Nebr.*
Violin Recital.
- CASPAR RENÉ GREGORY, Ph.D., D.D., *Leipzig, Germany.*
Modern Social Movements in Germany.
- WILLIAM McMURTRIE, Ph.D., *New York City.*
A University Course in Technical Chemistry.
- N. J. COREY, *Detroit, Mich.*
The Great Man in Art.
- JOHN P WISSER, Major, Artillery Corps, *United States Army.*
The Principles of Coast Defense.
- J. D. PENNOCK *Syracuse.*
Retort Coke Ovens and their Chemical Products.
- POULTNEY BIGELOW, B.A., *New York.*
The German Military System in relation to Liberty
and American Institutions.
- A. F. WEST, Ph.D., LL.D., *Princeton, N. J.*
The Philobiblon of Richard DeBury.
- SAMUEL M. JONES, Mayor, *Toledo, O.*
A Man without a Party.
- DAVID IRONS, Ph.D., *Bryn Mawr, Pa.*
Rationalism in Ethics.
- JOHN DEWEY, Ph.D., *Chicago, Ills.*
The Significance of Change.
- FRANK THILLY, Ph.D., *Columbia, Mo.*
The World-View of Hæckel : A Scientist's Philosophy.
- HUGUES LE ROUX, *Paris, France.*
The French Novel.
- F. W. CLARKE, B.S., *Washington, D. C.*
The Chemical Work of the U. S. Geological Survey.
- G. S. FULLERTON, LL.D., *Philadelphia, Pa.*
Philosophy and Life.
- E. P. MORRIS, A.M., *New Haven, Conn.*
Philological Openings.
- C. F. CHANDLER, Ph.D., LL.D., *New York City*
Electrolytic Processes at Niagara Falls.
- C. M. ANDREWS, Ph.D., *Bryn Mawr, Pa.*
The last Thirty Years of European History.
- GEORGE E. HOWARD, Ph.D., *Lincoln, Nebr.*
Mirabeau and the Constituent Assembly.
- G. E. KARSTEN, Ph.D., *Bloomington, Ind.*
Goethe's Faust ; the Pre-Weimarian Plan.

REQUIREMENTS FOR ADMISSION AND GRADUATION.

The following subjects are required for admission to the course leading to the degree of Bachelor of Arts: English, History [one of the four following divisions in History: (a) American and Civil Government, (b) English, (c) Ancient, (d) Mediæval and Modern European,] Plane Geometry, Algebra, and either *A*, *B*, or *C*, as follows:

A. Greek and Latin.

B. Latin and Advanced French or Advanced German.

C. Advanced French, Advanced German, and Advanced Mathematics.

An alternate requirement instead of Advanced Mathematics may be offered in Physics, Chemistry, Botany, Geology, and Zoology.

Students, admitted to the Academic Department without satisfying the specific subjects in the above groups, must make up such deficiency during the freshmen year by attending the University instruction in such subjects if given. The credit thus obtained will be counted toward entrance and not toward graduation.

[For details as to subjects and methods of admission see pages 33-54.

For admission to the freshman class, communications should be addressed to the Registrar. See pages 33-54.

For admission to advanced standing from other colleges and universities, and as special students, communications should be addressed to the Registrar. See pages 53-54.

For admission to graduate work and candidacy for advanced degrees, communications should be addressed to the Dean of the University Faculty. See page 69.]

Degree. The single degree of Bachelor of Arts is conferred on students in the Academic Department, irrespective of the studies elected.

General Conditions for Graduation. For graduation, 120 hours (or 180 hours of the former three-term year) of instruction, besides military drill and physical training during the freshman year, are to be completed. In the case of students relieved from military drill and physical training, an equivalent in hours is added to the 120 hours (or 180 hours of the former three-term year). The work of the entire course is elective, except as regards military drill and gymnasium,

and is subject only to the limitations prescribed by each department of instruction. Students are, however, advised to lay out definite and systematic lines of study.

Thesis.

If a senior elect to write a graduating thesis, it must represent some phase of the student's principal line of work during the later years of his course. The subject of the thesis must receive the written approval of the professor in charge of the study to which it appertains, and with such approval must be left with the Registrar not later than the fifteenth day of October in order to be announced, and accepted by the Faculty, without whose permission no change in the subject can thereafter be made. In order to be acceptable, the thesis must have the character of a scholarly dissertation on the subject chosen ; and if finally accepted by the Faculty, it will entitle the writer to credit. The copy of the thesis presented to the Faculty shall, if accepted, become the property of the University. The merit of the thesis will be judged not only from a technical point of view, but also from the point of view of its literary workmanship ; and its merits, as judged from these two points of view, will be taken into account in determining the standard of the student for graduation. A standard form and size for theses has been adopted, said size to be eight by ten and one-half inches.

LIST OF COURSES OPEN TO FRESHMEN IN THE ACADEMIC DEPARTMENT.

The following list comprises the courses of instruction open to election by freshmen in the Academic Department without special permission. They may not register in any other course until the written consent of the professor in charge of the subject be presented to the Registrar :

Semitic Languages and Literatures.—Courses 1a, 2a, 6a, 8a. and 9.

Classical Archæology.—Course 2, 3, 5, and, as stated, 12, 13, 14.

Greek.—Courses 1, 1a, A, and, as stated, 12, 13, 14.

Latin.—Courses 1 and 3.

Germanic Languages.—Course 1, and, under certain restrictions, courses 2, 3, 4, 5, 7, 13, 14, and 15.

Romance Languages.—Course 1, and, under certain restrictions, courses 2, 3, 5, 6, 7, 8, 10, 12, 13, 15, and 16.

English.—Courses 1, and 54.

Philosophy.—Course 7.

History.—Courses 4, and 8.

Music.—Course 1.

Bibliography.—Courses 1, and 2.

Mathematics.—Courses 6, 8, and 9.

Physics.—Course 2a. Course 2b [if advanced mathematics has been offered at entrance].

Chemistry.—Courses 1-4. Course 7 [open to Freshmen also registered in Medicine].

Botany.—Courses 1, 2, 3, and 5.

Entomology and General Invertebrate Zoology.—Courses 1, 2, 3, 4, 5, and 7.

Physiology, Vertebrate Zoology, and Neurology.—Courses 1-6.

Geology.—Courses 2, 21.

Military Science.—Course 4.

Hygiene and Physical Culture.—Course 2.

Freehand Drawing.—Course 1.

Juniors and seniors in good standing in the Academic Department are allowed, with the permission of the Faculty of Arts and Sciences, and with the consent of the Faculty concerned in each case, to elect studies in other Colleges which shall count towards graduation in the Academic Department, but the sum total of hours elected cannot exceed the number required for one year's work in such Colleges, nor exceed nine hours per week in any term. No student, however, in the Academic Department is allowed to register in the Medical College until the beginning of his senior year, but he may then devote the whole of that year to studies in the Medical College.

DEPARTMENTS OF INSTRUCTION.

[Unless otherwise indicated, each course runs through the year. Courses enclosed in brackets will not be given in 1902-3, but may be expected in 1903-4.]

SEMITIC LANGUAGES AND LITERATURES.

Office of the Department, White 3 B. Consultation hours, T., Th., 12 M.

The work in this department falls under three heads.

The Languages. An elementary course in Hebrew will be given each year. The advanced work in this language is so arranged as to cover in three years the leading writers of the Old Testament and some parts of the Mishnaic and Talmudic literature. General students with linguistic interests, and those preparing to teach, are advised to begin their study of the Semitic languages with the Arabic, which will also be offered each year. Aramaic and Egyptian will alternate with Assyrian and Ethiopic. In the Semitic Seminary, a part of each year will be given to epigraphical studies.

The Literatures. A course of lectures on the most important literary productions of the Semites will be given annually. *For this course a knowledge of Semitic Languages is not required.* The lectures will be devoted in part to a discussion of questions of authorship, date, literary composition and historical value, and in part to a translation and elucidation of the texts themselves. Much attention will be bestowed on the Old Testament. Thus an opportunity will be afforded to students who are not familiar with the Hebrew to become acquainted with the results of scientific Bible-study. The Hebrew apocrypha and pseudepigrapha, the Mishnah and the Talmud, the Quran and the Arabic poets, the Babylonian Gilgamesh epic and the Book of the Dead will be discussed in a similar manner.

The History. In a series of lectures covering four years, an outline will be presented of the political and social history of Babylonia, Assyria, Persia, India, Armenia, Syria, Arabia, Ethiopia, Egypt, and the Spanish Caliphate.

Bracketed courses will not be given in 1902-1903.

1a. **Hebrew.** Grammar (Harper, Kautzsch, König). Exercises in composition. Genesis. M., W., F., 2, *White 3 B.* Professor SCHMIDT.

[1b. **Neo-Hebraic.** Grammar (Geiger). Selections from the Mishna and from Rashi. F., 4, *White 3 B.* Professor SCHMIDT.]

2a. **Arabic.** Grammar (Socin, Wright, Caspari-Müller). Selections from prose writers, poets, and the Quran. W., F., 5, *White 3 B.* Professor SCHMIDT.

[2b. **Advanced Arabic.** Exegetical study of the Quran. The Muallaqat. Arabic Palæography. Professor SCHMIDT.]

2c. **Modern Arabic.** Grammar (Spitta). Selected texts from the Fiske Collection. T., Th., 3, *White 3 B.* Professor SCHMIDT.

2d. **Ethiopic.** Grammar (Prætorius, Dillmann). Dillmann's Chrestomathia. The Book of Enoch. W., F., 4, *White 3 B.* Professor SCHMIDT.

[3a. **Biblical Aramaic.** Grammar (Marti). Ezra, Daniel, and selected Targums. Professor SCHMIDT.]

3b. **Samaritan.** Grammar (Peterman). Selections from the Version. S., 4-6, *White 3 B.* Professor SCHMIDT.

[3c. **Syriac.** Grammar (Nestle, Nöldeke, Duval, Brockelmann). Selections from the Peshita, the Sinaitic Gospels, the Syro-Hexapla, the Curetonian, and the Evangeliarium. Professor SCHMIDT.]

[3d. **Mandaic.** Grammar (Nöldeke). Selections from the Ginza, the Qolasta, and the Incantations. Professor SCHMIDT.]

[3e. **Talmudic Aramaic.** Grammar (Luzzato, Dalman). Selections from the Palestinian and Babylonian Talmuds. Professor SCHMIDT.]

[4a. **Assyrian.** Grammar (Lyon, Delitzsch). Meissner's Chrestomatie. Professor SCHMIDT.]

4b. **Advanced Assyrian.** Texts of the reigns of Sargon and Sennacherib. Critical study of the history of these reigns. T., 4-6, *White 3 B.* Professor SCHMIDT.

[4c. **Shumerian.** Grammar (Hommel). Hommel's Sumerische Lesestücke. Professor SCHMIDT.]

[5a. **Egyptian.** Grammar (Erman). Hieroglyphic Texts of Middle and New Empires. Professor SCHMIDT.]

5b. **Advanced Egyptian.** Hieroglyphic and Demotic Texts of Saitic Period. T., Th., 4-6, *White 3 B.* Professor SCHMIDT.

[5c. **Coptic.** Grammar (Steindorff). Pistis Sophia. Professor SCHMIDT.]

6a. **Semitic Literature.** Daniel and the Sibylline Oracles, first half-year. The Talmud, second half-year. M., W., 3, *White 3 B.* Professor SCHMIDT.

[6b. **Semitic Literature.** Proverbs and the Five Rolls, first half-year. The Pseud-epigrapha, second half-year. Professor SCHMIDT.]

Courses 6a and 6b are general courses for which a knowledge of the Semitic languages is not required.

7a. **Semitic Seminary.** Genesis, first half-year. Phœnician Inscriptions, second half-year. M., 4-6, *White 3 B.* Professor SCHMIDT.

[7b. **Semitic Seminary.** Leviticus first half-year. Hebrew Palæography, second half-year. Professor SCHMIDT.]

8a. **Oriental History.** Syria, first half-year. Pre-Islamic Arabia and Ethiopia, second half-year. T., Th., 2, *Morse 3.* Professor SCHMIDT.

[8b. **Oriental History.** The Spanish Caliphate, first half-year. Babylonia and Assyria, second half-year. Professor SCHMIDT.]

9. **Geography and Antiquities of the Semites.** F., 3, *White 3 B.* Professor SCHMIDT.

[10. **Comparative Semitic Philology.** Origin of the cuneiform signs, and of the alphabet, first half-year. Genesis I-IV in Hebrew, Aramaic (Targumic, Samaritan, Edessene), Arabic, and Ethiopic, second half-year. Professor SCHMIDT.]

Courses 1a, 2a, 6a, 8a, and 9 are open to freshmen without special permission.

CLASSICAL ARCHÆOLOGY AND HISTORY OF ART.

The **Museum of Classical Archæology** contains a collection of casts which furnishes ample material for the illustration of the history of Greek and Roman sculptural art. The museum is also equipped with a fine collection of Greek coins, with a full set of the British museum electrotypes, with a collection of Greek vases representing the periods of Greek ceramic art, and with various plans, models and reconstructions.

Course 3, the shorter course of lectures on Greek sculpture in the museum, will give the student a knowledge of the general history of the development of Greek art, such a knowledge as will enable him to view the treasures of the larger museums of this country and of Europe intelligently. The three hour course will give more opportunity for independent investigation. This course will be attractive to all who desire a somewhat more definite and intimate acquaintance with the work of the best Greek sculptors, and to those who would value the ability to recognize the beauties, spirit, and meaning of ancient art.

The courses in Greek Archæology and in Pausanias are planned to be of profit to those who would be glad to acquire, for a knowledge of the Greek language and literature, or of Greek history, a background of acquaintance with the Greek people in their artistic and industrial

activities, or of the land, the cities and the temples of Greece. The course in Pausanias presupposes ability to read Greek prose readily. The Archæological Seminary is intended primarily for those who desire specializing work in Greek architecture and Greek epigraphy. Courses 1, 2, 4, and 5 will prepare for the examinations for the fellowships of the American School of Classical Studies in Athens. Courses 12, 13, and 14 are culture courses; they will be of value not only to students of Greek, but will enable students of English to read English literature with more understanding and pleasure.

1. **Greek Archæology.** Lectures and readings. Mycenæan art and civilization, Greek terracottas, coins, bronzes, gems and vases. Greek Architecture, with special reference to the buildings on the acropolis of Athens. The coins and vases in the Museum of Classical Archæology will be used as material for study. Lectures illustrated by lantern slides. W., F., 9. *Museum of Casts.* Mr. ANDREWS.

2. **History of Greek Sculpture.** Lectures in the Museum of Casts. M., W., F., 11. Mr. ANDREWS.

3. **Outline History of Greek Sculpture.** Lectures in the Museum of Casts. T., Th., 10. Mr. ANDREWS.

4. **Pausanias.** A reading course in the sources of the knowledge of Greek topography, with special reference to Athenian topography. Supplemented by illustrated lectures and by readings from Thucydides, Herodotus and Xenophon. Each member of the class will be expected to own a Teubner text of Pausanias, of Thucydides, and of Herodotus. T., Th., 9, *White 6.* Mr. ANDREWS.

5. **Archæological Seminary.** Greek epigraphy. First half-year. Greek epichoric alphabets and dialectal inscriptions. Second half-year, Attic inscriptions. The large collection of paper impressions of inscriptions will be used. M., 3-5, *White 3a.* Mr. ANDREWS.

[12. **Myths of the Epic Cycle.** The entire cycle of myths relating to events before, during, and after the Trojan war will be illustrated by lantern views of extant monuments: vase paintings, bas-reliefs, sculpture in the round, gems and coins. First half-year. M., F., 12, *White 6.* Professor STERRETT.]

Open to students who have entrance Latin.

[13. **Myths of the Theban and Dionysiac Cycles.** A lecture course illustrated by lantern views as in course 12. Second half-year. M., F., 12, *White 6.* Professor STERRETT.]

Open to students who have entrance Latin.

[14. **Art Mythology.** The origin and development of the types of the great gods. The history of gods and demi-gods as told in art and literature. With illustrations by lantern views of extant monuments. M., F., 12, *White 6.* Professor STERRETT.]

COMPARATIVE INDO-EUROPEAN PHILOLOGY.

The work in comparative philology is planned with reference to the needs: first, of the general student with linguistic interests; second, of those proposing to be teachers of language, and more especially, of the classical languages; third, of those who propose to devote themselves to the special scientific study of the Indo-European languages,

To the first mentioned class of students, course 1 is especially adapted. For those who propose to be teachers of other than the classical languages, courses 2 and 3 are recommended in addition to course 1. The courses on Greek and Latin grammar, the course on the Greek dialects, and the Seminary work are of the first importance for prospective teachers of the classics, and for such work a preliminary study of the elements of Sanskrit is considered desirable though not absolutely essential. Attention is called to the courses offered by the English department in Gothic, in English philology, and in the history of the English language; also to the philological courses offered by the departments of Semitic languages, Germanic languages, and Romance languages.

[1. **General Introduction to the Science of Language.** The essential principles of the life and growth of language; outlines of the science of phonetics; history of the science of comparative philology; historical and ethnological results of the science; classification of languages; the various branches of the Indo-European family of languages; methods of investigation. Relation of the Teutonic languages to the Indo-European parent speech. W., F., II, *White 3B*. Professor BRISTOL.]

The aim of this course is to acquaint teachers of ancient or modern languages with the general principles of the science of language and its history. It is open to all seniors and graduates.

2. **Comparative Grammar.** Methods and principles of language study. The elements of phonetics. The Greek alphabets. The phonology of Indo-European. Historical and comparative treatment of sounds and inflections with special reference to the Greek, Latin, and Germanic languages. W., F., II, *White 3B*. Professor BRISTOL.

3. **Elementary Sanskrit.** Whitney's Sanskrit Grammar and Lanman's Reader. The course is designed with special reference to the needs of students in Classical and Germanic Philology. T., Th., at hours to be fixed after consultation. *White 3B*. Professor BRISTOL.

4. **Vedic Sanskrit.** The reading of selected hymns. Introduction to Vedic literature. Study of the Vedic period of the language and of the Vedic Religion. One meeting a week. Professor BRISTOL.

Historical Latin Grammar, see Latin course 41.

Germanic and English Philology, see German, course 8, and English course 23.

Romance Philology, see Romance languages course 6.

GREEK.

The courses of study in this department have been arranged with distinct reference to the belief that the choice of Greek as a subject of study during the first two years of the college course should not necessarily imply an intention on the part of the student to specialize in Greek.

A course in elementary Greek is provided for the benefit of students who have not taken Greek in their preparatory course, and have found it desirable to acquire at least a rudimentary knowledge of the subject, and who are willing to incur the labor incident to doing two years' work in one. The purpose of the course is to attain in one year of extraordinary effort a reading knowledge of Attic prose, and all other objects are made secondary to this.

The work of the freshman year is directed toward cultivating the ability of reading easily and at sight. Authors of the simplest style have therefore been selected—Lysias and Plato as representatives of the purest Attic type, and the *Odyssey* of Homer, of the Epic. The first term of the year will include, in connection with the reading of Lysias, a thorough review of the fundamentals of accidence and syntax, and exercises in Greek composition will be required throughout the year.

The work of the sophomore year aims at giving the student some acquaintance with the scope and meaning of Greek literature as the embodiment of Greek thought. In order to enable the student to read a larger amount of literature a course in cursory reading in easy authors is provided.

The work adapted to specializing study falls under three distinct heads :

1. The literature. Reading courses accompanied by lectures are offered, of which are given this year a junior course in Herodotus and Thucydides, a course in Aristophanes, a course in Plato, a course in Pausanias, a course in Elegiac and Lyric Poetry, and a course in the rapid reading of the *Iliad* of Homer. Besides these the study of some one Greek author is taken up in alternate years in the Seminary.

2. The antiquities. Course 9 treats of the entire equipment and environment of ancient Greek life, its usage and occupations, its ideas and institutions. Courses 10 and 11 are given in alternate years and give a consecutive account of Greek Literature down to the time of

Justinian. Courses 12, 13, and 14 are intended to supplement the study of Epic and Tragic poetry, by which Greek art was inspired. Greek vase-painting, reliefs, etc., depict the stories told by Homer, Aeschylus, Sophocles, and Euripides, and give an archæological commentary which illustrates, enlivens, and makes still more charming both Epic and Tragic poetry. Modern poetry draws so largely on Greek mythology that these courses will be found valuable to students of all modern literatures. The department of Classical Archæology offers also courses in Greek art and archæology, and in epigraphy.

3. The language. Two courses in Advanced Prose Composition will give maturer students an opportunity for its practice in the writing of Greek under the direct personal supervision of a teacher, and for instruction in special questions of syntax and style. All students who intend to become specialists in Greek are advised to take these courses, if possible, both in the junior and senior years. The Teachers' Course in Greek is also adapted to the needs of undergraduates who expect to teach the classics. Lectures on Greek grammar from a historical point of view are given in alternate years and are intended for seniors and graduates. The course in Modern Greek should be taken by all who intend to specialize in archæology, or who plan to continue their studies in Greece.

The exercises of the philological seminary are especially adapted to the needs of graduate students, and introduce the student to the original sources of information concerning the language and its history, and accustom him to methods of independent investigation in matters of textual criticism and literary interpretation. The seminary room in the library building has been equipped with a reference library of over two thousand volumes and will be used as a regular study-room and laboratory by the more advanced students.

A. **Elementary Greek.** Forman's First Greek Book. The essentials of the grammar. Simple exercises in composition. The reading of selections from the Anabasis of Xenophon. M., T., W., Th., F., 8, *White 4*. Mr. MACRAE.

This course is designed for, and may be elected by all students who wish to acquire by extraordinary effort in one year, the ability to read Attic prose.

1. **Lysias, Homer, Plato.** Review of Attic inflections and syntax; Greek composition; Greek history in outline. Readings in the Odyssey. Brief introduction to Greek philosophy. M., T., W., Th., F., 10, *White 4*. Dr. FORMAN.

1 a. **Lysias, Homer, Plato.** Substantially as above, in course 1. Smaller amounts of the authors will be read, with less collateral work. T., Th., S., 10, *White 3 B*. Mr. MACRAE.

2. **Demosthenes.** The *Philippics*, with study of the life of the orator, and the history of his time. First half-year. M., W., F., 9, *White 3 B.* Professor BRISTOL.

Euripides and Sophocles. The *Ion* and *Oedipus Tyrannus* will be read. Each play will be illustrated by lantern views of the ancient monuments relating thereto. Introduction to the Attic drama. Second half-year. M., W., F., 9, *White 6.* Professor STERRETT.

Open to students who have passed in course 1.

2 a. **Course in Rapid Translation.** Selections from Diodorus and Lucian. May be elected as supplementary to course 2, or taken independently by students who have completed course 1. W., F., 10, *White 5.* Mr. MACRAE.

3. **Herodotus.** Reading of books one, three and seven with special reference to local history, topography and antiquities. First half-year. M., W., F., 10, *White 6.* Professor STERRETT.

Thucydides. Reading of books six and seven mainly with reference to the literary and historical questions connected with the subject matter. Second half-year. M., W., F., 10, *White 3 B.* Professor BRISTOL.

Open to students who have passed in courses 1 and 2, and to those who have passed in 1, and are taking course 2.

5. **Elegiac and Lyric Poetry.** First half-year the elegiac and iambic poets. Second half-year, the melic poets in Hiller's *Anthologia Lyrica*. T., Th., 11, *White 6.* Professor STERRETT.

Open to seniors and graduates.

[6. **The Tragedy.** Aeschylus, *Prometheus*; Sophocles, *Philoctetes* and *Ajax*; Euripides, *Hippolytus* and *Ion*. T., Th., 11, *White 6.* Professor STERRETT.]

Open to seniors and graduates.

[7. **The Attic Orators.** Selected orations, including the *De Corona* of Demosthenes. The study of Attic oratory through its chief representatives. M., W., F., 9. Dr. FORMAN.]

8. **Aristophanes.** The *Acharnians*, *Knights*, *Clouds*, *Wasps*, *Birds*, *Frogs*. Study of the development of Greek comedy and its scenic representation. M., W., F., 9, *White 5.* Dr. FORMAN.

Open to seniors and graduates.

9. **Greek Life.** The land and the people. Home life and private antiquities. Public life and social institutions. A study of the private life of the Greek, with illustrations (by lantern views, photographs, etc.) from ancient monuments and remains. T., Th., 10, *White 6.* Professor STERRETT. This course is open to all students of the University except freshmen.

[10. **Greek Literature.** Lectures. A history of the development of the poetical literature in connection with the political and social history of the people. T., Th., 10, *White 6*. Professor STERRETT. This course is open to all students of the University except freshmen.]

[11. **Greek Literature.** A lecture course covering the history of the prose literature of the classical period, and of the post-classical literature in general. T., Th., 10, *White 6*. Professor STERRETT.]

Courses 9, 10, and 11 are given in successive years.

[12. **Myths of the Epic Cycle.** The entire cycle of myths relating to events before, during, and after the Trojan war will be illustrated by lantern views of extant monuments: vase-paintings, bas-reliefs, sculpture in the round, gems and coins. First half-year. M., F., 12, *White 6*. Professor STERRETT.]

Open to students who have entrance Latin.

[13. **Myths of the Theban and Dionysiac Cycles.** A lecture course illustrated by lantern views as in course 12. Second half-year. M., F., 12, *White 6*. Professor STERRETT.]

Open to students who have entrance Latin.

[14. **Art Mythology.** The origin and development of the types of the great gods. The history of gods and demi-gods as told in art and literature. With illustrations by lantern views of extant monuments. M., F., 12, *White 6*. Professor STERRETT.]

15. **Plato.** Reading of the Greek text of the Republic. M., W., F., 10, *White 5a*. Assistant Professor HAMMOND.

This course is intended for students of Greek Literature as well as of Greek Philosophy. The Republic will be read in its entirety, the main attention being devoted to the content.

See Philosophy, course 9.

[16. **New Testament Greek.** First half-year. General introduction to the canonical and extra-canonical gospels; reading and interpretation of the Gospel according to Mark. Second half-year. Justin Martyr. The members of the class should be provided with Westcott and Hort's New Testament in Greek, and Gildersleeve's Apologies of Justin Martyr. W., F., 8, *Barnes Hall Library*. Dr. A. C. WHITE.]

17. **Pausanias.** A reading course in the sources of the knowledge of Greek topography, with special reference to Athenian topography. Supplemented by illustrated lectures and by readings from Thucydides, Herodotus and Xenophon. Each member of the class will be expected to own a text of Pausanias, of Thucydides and of Herodotus. T., Th., 9, *White 6*. Mr. ANDREWS. Open to all students who have completed 1 and 2.

18. **Modern Greek.** The literary language as found in Athenian newspapers and the spoken idiom as presented in Gardner's *Practical Method of Modern Greek*, W., F., 10. *Museum of Casts*. Mr. ANDREWS. Open to all students who have completed 1.

19. **Greek Composition.** A. Intermediate course. T., F., 4, *White 4*. Mr. MACRAE. B. Advanced course. One hour, to be arranged upon consultation. Dr. FORMAN.

20. **Teachers' Training Course.** The subjects treated will be those contained in "The Teaching of Greek in the Secondary School," which will be used as a text-book. The attention of the class will be directed to the problems connected with the teaching of the language and the literature, and to the auxiliary helps for the interpretation of the latter. The entire *Anabasis* of Xenophon will be read with the class, and portions of Homer's *Iliad* will be studied. T., Th., 12, and Monday evening 7.30, *White 3 B*. Professor BRISTOL.

These hours may be counted towards the number requisite for the certificate in the department of the Science of Education.

21. **Advanced Reading Course.** The aim of this course is to enable students to acquire a knowledge of the entire works of some one author, or of a particular field of literature. In 1902-3, Homer's *Iliad*, will be read and translated in weekly meetings at a time to be fixed. Professor STERRETT and Dr. FORMAN.

In 1903-4 the dramatic poets will be read. Designed for seniors and graduates.

22. **Greek Seminary.** The *Agamemnon* of Aeschylus will be studied as an introduction to textual criticism. Preparation and discussion of papers by members of the seminary. W., 3-5, and an additional hour at the pleasure of the instructor. Professor STERRETT. Open to graduates.

In 1903-4, Greek Epigraphy. Interpretation of the more important Attic inscriptions. Special study of the dialects from inscriptions.

For courses in Greek art, Greek architecture, etc., see under Classical Archæology. For Greek history, see under History and Political Science. For Greek philosophy, see also under Philosophy.

LATIN.

Office of the Department, Morrill 14.

The reading courses are as follows:

Course 1, the regular freshman reading course, open to all students that have presented Latin at entrance.

Courses 6, 7, and 8, the regular sophomore reading courses, open to those that have had course 1.

Courses 16 and 17, the regular junior and senior reading courses, open to those that have had courses 1 and either 6, 7, or 8.

Courses 2 and 3, intended primarily for freshmen that are taking course 1.

Courses 11 and 12, sophomore electives, intended primarily for those that are taking courses 6, 7, or 8, but open to all that have taken course 1.

Course 4, which can be taken to make up an entrance deficiency in Cicero, Virgil, or Latin composition.

The composition courses, the undergraduate, and the graduate lecture courses are open to students under the restrictions mentioned with each course.

1. **Livy, Book 1; Cicero, De Senectute; Horace, Selections from the Odes; Latin Writing.** Five sections: M., W., F., 9, *Morrill 3*, Professor BENNETT. M., W., F., 9, *Morrill 6*, Acting Assistant Professor GUEDEMAN. M., W., F., 10, *Morrill 3*, Dr. COLE. M., W., F., 11, *Morrill 3*, Assistant Professor DURHAM. M., W., F., 12, *Morrill 13*, Assistant Professor ELMER.

[2. **Sight Translation: Caesar, Civil War; Plautus, Aulularia; Apuleius, Cupid and Psyche.** Courses 2 and 3 are given in alternate years.]

3. **Sight Translation: Cicero, Selected Letters; De Amicitia; Plautus, Amphitruo.** Six sections: T., 12, *Morrill 6*, Acting Assistant Professor GUEDEMAN. W., 12, *White 4*, Assistant Professor DURHAM. F., 12, *White 4*. Assistant Professor DURHAM. S., 10, *Morrill 3*, Assistant Professor DURHAM. S., 11, *Morrill 3*, Dr. COLE. S., 12, *Morrill 3*, Acting Assistant Professor GUEDEMAN.

Especially recommended as collateral work for those that are taking course 1, but open to all students.

4. **Cicero, Selected Orations; Virgil's Aeneid; Latin Composition.** T., Th., S., 12, *Morrill 13*, Dr. COLE.

Students that have an entrance condition in Cicero, Virgil, or Latin Composition are required to make up that deficiency by taking the corresponding part of this course. Open, by permission, also to qualified students that do not present Latin at entrance.

[6. **Terence, Phormio; Horace, Selections from the Satires, Epistles, Ars Poetica; Tacitus, Dialogus and Agricola.** Collateral reading in the history of Rome for the period covered by the life of Horace. Latin Writing. Wilkin's Primer of Roman Literature. Assistant Professor ELMER.

Courses 6 and 7 are given in alternate years.]

7. **Virgil, Aeneid**: rapid reading of books vii to xii; **Lucan, Selections from the Pharsalia**; **Seneca, De Vita Beata**. Two sections: T., Th., S. 9, *Morrill 21*; T., Th., S., 10, *Morrill 21*, Assistant Professor ELMER.

Open to students that have completed course 1. *See under course 8.*

8. **Catullus**; **Virgil, Georgics**; **Tibullus and Propertius, Selections**; **Ovid, Selections from Tristia, Amores, and Fasti**; **Phaedrus**; **Martial**. Two sections: T., Th., S., 9, *Morrill 13*, Assistant Professor DURHAM. T., Th., S., 10, *Morrill 13*, Dr. COLE.

Open to students that have completed course 1.

Either course 7 or course 8 admits to the advanced reading courses 16 and 17.

11. **Selections from Cicero's Letters**; **Cicero, De Oratore**. W., F., 11, *Morrill 13*. Assistant Professor ELMER.

Open to students that have completed course 1.

[12. **Selections from Cicero's De Officiis**; **Cicero's Second Philippic**. Assistant Professor ELMER.

Open to students that have completed course 1.

Courses 11 and 12 are given in alternate years.]

16. **Selections from the Republican Literature**: **Plautus**, three plays; **Lucretius**. Lectures on the History of Roman Literature. T., Th., S., 9, *Morrill 3*. Professor BENNETT.

Open to students that have completed courses 1 and 6, 7, or 8.

[17. **The Literature and History of the Early Empire**: **Pliny the Younger, Juvenal, Tacitus**. History of Roman Literature, Capes' Early Empire. T., Th., S., 9, *Morrill 3*, Professor BENNETT.

Open to students that have completed courses 1 and 6, 7, or 8.

Courses 16 and 17 are given in alternate years.]

21. **Intermediate Course in Latin Writing**. Open to students that have completed course 6, 7, or 8. M., 11, *Morrill 13*, Assistant Professor ELMER.

22. **Advanced Course in Latin Writing**. For students that have completed course 21, or an equivalent elsewhere. S., 11, *Morrill 13*, Assistant Professor ELMER.

26. **Teachers' Training Course**.

a. Study of the evidences for the pronunciation of Latin; Hidden quantities; Peculiarities of orthography; Theoretical consideration of Latin Syntax; Lectures on problems connected with the teaching of Latin in secondary schools. W., F., 12, *Morrill 3*. Professor BENNETT.

b. **Virgil**. This course is intended primarily for those prospective teachers in preparatory and high schools that desire an accurate knowledge of the various subjects that pertain to Virgil in general and

the teaching of the Aeneid in particular. A course of introductory lectures will be given, and books i-vi of the Aeneid will be studied carefully with reference to all the points that should be emphasized in elementary instruction. M., 12, *Morrill* 3. Assistant Professor DURHAM.

Course 26b can be taken only in connection with course 26a.

The general aim of courses 26a and 26b is to prepare students that are intending to teach to enter upon their work with confidence.

These courses are open only to students that have had courses 1 and 6, 7, or 8, and have taken or are taking course 11, 12, 16, or 17. Special students in Latin are also admitted.

See also under Science and Art of Education, course 5.

[27. **Roman Antiquities.** First term and until Easter recess : A systematic consideration of the constitution of the Roman family, status of women, marriage, children, education, slavery, the Roman house and its furniture, food, dress, baths, games and amusements, books, trade, travel, religion, death, burial, etc. Lectures, illustrated by lantern views, photographs, and material in the Museum of Casts. Easter recess until end of second term : The Political and Legal Antiquities of the Romans. Lectures. W., F., 12, *Morrill* 3. Professor BENNETT.

Open to students of the sophomore, junior, and senior years. See also under History and Political Science, course 3.

Course 27 alternates with courses 26a and 26b.]

[28. **Roman Archaeology** : architecture, sculpture, painting, pottery, numismatics, etc. Lectures illustrated by lantern views, photographs, and material in the Museum of Casts. Mr. BABCOCK.]

29. **Roman Literature of the Empire** : Velleius to Apuleius. Lectures, supplemented by illustrative readings. M., 11, *White* 3 b, Dr. COLE.

Open to juniors, seniors, and graduates.

30. **History of Roman Literature.** First term : Cicero, Orator, with history of Ancient Rhetoric ; second term : Tacitus' Dialogus, with history of Roman Oratory. W., F., 11, *White* 6, Acting Assistant Professor GUEDEMAN.

Open to juniors, seniors, and graduates.

31. **German Philological Reading.** Schanz, *Geschichte der römischen Litteratur, I, die römische Litteratur in der Zeit der Republik.* For juniors, seniors, and graduates. S., 12, *Morrill* 14. Assistant Professor DURHAM.

The object of the course is to familiarize students of Latin, Greek, and Comparative Philology with the style and vocabulary of modern German philological investigations.

36. **Latin Pro-Seminary.** The critical work of the year 1902-1903 will be a textual and exegetical study of the works of Catullus.

The primary object of the pro-seminary is to prepare students for membership in the graduate seminary. It will also serve to introduce to the principles of scientific textual criticism and interpretation students that may not be intending to take graduate courses.

Open to seniors and by special permission to juniors. M., 3, *Latin and Greek Seminary Room*, Assistant Professor DURHAM.

[37. **Latin Pro-Seminary.** After a course of introductory lectures on the history and development of Latin Epic Poetry from the earliest times down to Statius, the work of the pro-seminary will be devoted to a textual and exegetical study of selected portions of Virgil. Each student will prepare a paper embodying the results of original investigation of some topic suggested by the work of the year. M., 3, *Latin and Greek Seminary Room*, Assistant Professor ELMER.

For the general objects that the pro-seminary has in view see under course 36. Courses 36 and 37 are given in alternate years.]

38. **Latin Seminary.** The work of the seminary for 1902-1903 will consist of a textual and exegetical study of the *Germania* of Tacitus, combined with the more rapid reading of the other works of Tacitus.

The object of the seminary is to familiarize its members with the methods and habits of independent investigation. The work, therefore, as far as possible, is thrown into the hands of the students themselves. The seminary is open to graduates. Students that intend to take this course should confer with the instructor before Commencement, in order that the necessary books may be ordered from abroad in due season. The textual and exegetical work will come T., 2-3:30; the reading, Saturday at 10. *Greek and Latin Seminary Room*, Acting Assistant Professor GUEDEMAN.

[39. **History, Scope, and Aim of Classical Studies, with especial reference to Latin.** This course will present the history of classical study, particularly since the Renaissance, will outline the various fields of investigation, stating the present state of knowledge in each along with the chief problems still awaiting solution, and will give a very full bibliography. Open to graduates. Th., 10, *Morrill 3*, Professor BENNETT. Courses 39 and 40 are given in alternate years.]

40. **Historical Latin Syntax.** Lectures on the original force and historical development of the cases, and upon the subjunctive mood, with reference especially to its primitive meaning and its development in subordinate clauses. Open to graduates. T., Th., 10, *Morrill 3*, Professor BENNETT.

41. **Comparative Grammar with reference to Latin, and Historical Grammar of the Latin Language.** Lectures. For juniors,

seniors, and graduates. T., Th., 12, *Morrill 3*, Assistant Professor DURHAM.

42. **Italic Dialects. Oscan and Umbrian.** Sounds, inflexions, and word formation. Lectures, and interpretation of Conway's *Dialectorum Italicarum Exempla Selecta*. For graduates. Second half-year. Th., 2, *Morrill 14*, Assistant Professor DURHAM.

[43. **Latin Epigraphy.** Introductory lectures and the interpretation of selected Latin inscriptions. For juniors, seniors, and graduates. T., Th., 12, *Morrill 3*, Assistant Professor DURHAM.]

44. **Latin Palæography.** An actual study of mediæval manuscripts and fac-similes in the possession of the University. Second half-year. W., 4-5. Professor BURR.

For Roman History, see under Ancient History.

THE GERMANIC LANGUAGES.

The aim of the first two courses in German, besides preparing the student for progressive and independent work, is to afford those who have not a full classical training, some grammatical and linguistic discipline, an insight into the relations between German and English, and a certain degree of literary culture.

In course 1 the Joynes-Meissner Grammar and Hewett's Reader are used, accompanied by exercises in writing German, and in translation at sight. Later in the year easy novels or plays are studied.

In course 2 standard German classics are read, and special attention is paid to advanced syntax and etymology, the force of prefixes and suffixes, the composition of words, synonyms and sight translation.

The later work, in the form of lectures and recitations, includes the advanced study of the German literature and language. Courses are given, varying from year to year, embracing the works of the leading authors and the literature of different periods. Classes are also formed in composition and conversation, and recent dramatic literature and the writings of living novelists are read. Systematic instruction is further provided in Gothic, Old Norse, Netherlandish, in Old and Middle High German, also in the history of the German language and in the comparative grammar of the Germanic languages.

In the German Seminary attention will be paid in successive years both to German literature and philology. The Seminary in German literature is open to students who have had the elementary courses in German and at least one full course in German literature. For the Seminary in philology, preliminary courses in Gothic and Middle High German, also in the general principles and facts of language are

desirable. Investigation, the careful examination of authorities and special reports constitute distinctive features of this work. All graduate students will participate in both these Seminaries. Later, independent research in chosen fields according to the special gifts and tastes of individual students will follow. Broad as well as accurate culture will be sought in the case of all graduate students.

Courses for those intending to be teachers are also given on classroom methods of instruction and theories of instruction in the modern languages. The department is equipped with a rare collection of lantern slides for illustrative purposes. The seminary room in the general library building has a valuable library for consultation, containing the leading collections of German literature, philological journals and books of reference. The Zarncke library which has been recently presented to the University contains one of the largest single collections of books for the study of German literature and philology in America, has materially enlarged the resources of the seminary and leave little to be desired.

A series of lectures in German by eminent scholars upon German life, literature and art will be given during the year.

Course 1, which cannot be taken to make up an entrance deficiency, is for beginners in German, and for those who have not already passed the entrance examination in Elementary German.

Course 2, which cannot be taken to make up an entrance deficiency, is otherwise open to those who have had course 1, or have passed the entrance examination in Elementary German. Course 2 cannot be taken by those who have passed the entrance examination in Advanced German (equivalent to the Intermediate German of the College Entrance Examination Board.)

Courses 3-16 are open, under the restrictions hereafter noted, to those only who have had at least the equivalent of courses 1 and 2.

Course 1, and under certain restrictions, courses 2, 3, 4, 5, 7, 13, 14, and 15, are open to Freshmen.

1. **Elementary Course in German.** Joynes-Meissner Grammar, Hewett's German Reader. The principles of German pronunciation, inflexions, rules of syntax, re-writing of easy exercises in German, and memorizing familiar poems. T., Th., S., 11, 12, *Morrill 21*, Dr. HOWE; T., Th., S., 8; M., W., F., 11, 12, *Morrill 6*, Dr. KING; M., W., F., 9, 10, *Morrill 5*; T., Th., S., 10, *Morrill 21*, Mr. POPE.

2. **Second Year.** a. Schiller's Wilhelm Tell, Goethe's Hermann und Dorothea, Freytag's Verlorene Handschrift, 10, 11, M., W., F., *Morrill 21*, First and Second half-years, Dr. HOWE; T., Th., S., 10,

Morrill 5, First half-year, Dr. KING ; T., Th., S., 9, *Morrill 5* ; 11, *Morrill 6*, Mr. POPE.

b. Course of rapid reading of easy German prose, with sight translations. The object of this course is to give facility in translation and especially to aid students in their later reading of technical and scientific works. This is a parallel course to 2a for the second half-year. T., Th., S., 10, *Morrill 6*, Dr. KING ; T., Th., S., 9, *Morrill 5* ; 11, *Morrill 6*, Mr. POPE.

3. **Exercises in German Composition**, M., W., F., 12, *Morrill 21*. First half-year, Dr. HOWE. Open only to students who have had courses 1 and 2.

4. **Advanced German Composition**. M., W., F., 12, *Morrill 21*, Second half-year, Dr. HOWE. Open only to students who have had courses 1, 2, and 3, and to others by special permission of the instructor.

5. **Goethe's Life and Writings**. Lectures, recitations and reports. a. Selections from *Dichtung und Wahrheit* and the *Italienische Reise*. M., W., F., 9, *Morrill 13*. First half-year.

b. **Dramas and Lyric Poems**. Second half-year. M., W., F., 9, *Morrill 13*, Professor HEWETT.

6. **Lectures on the History of German Literature from the Beginning to Luther**, with readings from the master-pieces. This course will be conducted entirely in German. T., Th., 11, *Morrill 5*, Dr. ———.

7. **Heine and the Romantic School**. M., W., F., 10, *Morrill 13*, Professor HEWETT.

8. **Introduction to General Germanic Philology and Phonology**. Elementary phonetics, with special reference to German pronunciation and the laws of linguistic change. The history of the German language. T., Th., S., 10, *Morrill 5*. First half-year, Dr. ———.

9. **German Seminary**. a. **German Literature from Luther to Lessing**. Sources of the New High German language. b. **Teachers' Course**. Methods of instruction in the German language. Text books, authorities, order of studies, moot points in pronunciation and syntax. Follows course a. T., Th., 9, *German Seminary Room*, Professor HEWETT. Open only upon special application.

10. **Middle High German**. Hartmann von Aue, *Nibelungenlied* and *Gudrun*. T., Th., S., 12, First half-year, *German Seminary Room*. ———.

11. **Advanced Course in Middle High German**. The Minnesinger, Walther von der Vogelweide and the court epics. T., Th., S., 12, *German Seminary Room*. Second half-year, ———.

12. **Old High German.** Braune's *Althochdeutsches Lesebuch*. M., W., F., 11, *German Seminary Room*. Second half-year. ———. Follows Course 18 in Gothic. See also under English Philology, Course 23.

13. **German Literature in the Nineteenth Century.** The Historical Novel. Freytag, Scheffel, Hauff and Ebers. T., Th., S., 9, *Morrill 6*, First half-year, Dr. KING.

14. **The Modern German Drama.** Hauptmann, Sudermann, Wilbrandt and Fulda, with a comparative study of representative writers in other languages, especially of Tolstoi, Tourguenieff, Ibsen and others. T., Th., S., 9, *Morrill 6*. Second half-year. Dr. KING.

15. **German Style.** Literary and colloquial forms, the development and divergence of meaning in words, the introduction of new terms, synonyms and critical points in grammar. The works of Siutlerin, Matthias, Andresen, Weise and Vernaleken will form the basis of this study. This course will be conducted in German, and German themes will constitute a part of the work. M., W., F., 12, *Morrill 5*. First half-year. Dr. ———. This course is intended for advanced students of literature and teachers. Open to those who have had courses 1-4 or their equivalent.

16. **German Conversation.** The number of students in this course will be limited to twenty-five. Admission only to students who have had courses 1 and 2 by special application to the instructor. Preference will be given to teachers and advanced students. Second half-year. M., W., F., 12, *Morrill 5*. Dr. ———.

17. **Gothic.** M., W., F., 11, *White 2*. Assistant Professor STRUNK. First half-year. See course 2 under English philology. Candidates for the doctor's degree in Germanics are advised to present this course or its equivalent.

[17. **Old Norse.** Kahle's *Altisländisches Elementarbuch* will be used. Dr. ———. 1903-4.]

18. **Comparative Grammar of the Indo-European Languages.** W., F., 11, *White 3B*. Professor BRISTOL. See Comparative Philology, Course 2. Candidates for the doctor's degree in Germanics are advised to include also Course 1 under Comparative Philology as a part of their preparation for examination.

19. The Deutscher Verein, a club composed of the instructors in German, graduate students and others specially qualified, will meet once a month for the reading of original investigations and discussions' and reports upon recent publications in the field of German literature and philology. 7:30 P. M., *German Seminary Room*, on the first Monday of each month.

THE ROMANCE LANGUAGES.

Instruction in French during the first year is essentially the same for all courses. It is expected that students in the technical courses who take but one year of French, will be enabled to read ordinary French scientific works and the French text-books which may be used in their courses. In the second year the object of study is more literary than grammatical; three hours a week are devoted to reading advanced French and the study of the history of the literature, with special reference to its principal schools or movements.

The instruction in the department is so planned that a student who pursues French for three or four years has an opportunity to study every period in French literature from the mediæval to the modern. Special instruction is also provided for graduates and other advanced students in French philology, Old-French, and Provençal.

The courses in Spanish and Italian are of two years each. The grammar is rapidly studied the first term, and reading begun in the second. In the second year more advanced works in Spanish and Italian are read; in the former Cervantes and Calderon; in the latter, selections from Dante, Petrarch, and Boccaccio, with lectures on the history of the literature. Advanced instruction is given in Spanish and Italian philology.

The library, in which a seminary room has recently been provided, is well furnished with materials for the special study of French literature of the XVIIth century and of the Romantic School, while means are not wanting for the study of other periods, and of the other Romance literature and philology.

Course 1, which cannot be taken to make up an entrance deficiency, is for beginners in French, and for those who have not already passed the entrance examination in Elementary French. Course 2, which cannot be taken to make up an entrance deficiency, is otherwise open to those who have had the equivalent of course 1, or have passed the entrance examination in Elementary French. Course 2 cannot be taken by those who have passed the entrance examination in Advanced French (equivalent to the Intermediate French of the College Entrance Examination Board). Courses 3, 5, 6, 7, 8, 10, 12, 13, are open, under the restrictions hereafter noted, to those who have had at least the equivalent of courses 1, 2. Course 1, and under certain restrictions, courses 2, 3, 5, 6, 7, 8, 10, 12, 13, 15, 16, are open to Freshmen.

1. **French Grammar and Reader.** Fraser and Squair's French Grammar. Colin's Contes et Saynètes. M., W., F., 9, White 13,

Mr. GUERLAC. 10, *White 13*, Dr. LODEMAN. 11, *White 10*, Mr. MOORE. 12, *White 10*, Dr. LODEMAN, *White 13*, Mr. GUERLAC. T., Th., S., 9, *White 10*, Mr. MURRAY. 10, *White 11*, Assistant Professor OLMSTED. 11, *White 10*, Mr. MOORE. 12, *White 10*, Mr. MOORE, *White 11*, Mr. MURRAY.

2. **Daudet's Tartarin de Tarascon, Selections from Loti, Modern French Lyrics.** M., W., F., 9, *White 11*, Mr. MURRAY. 10, *White 10*, Mr. MOORE. 11, *White 11*, Assistant Professor OLMSTED. T., Th., S., 9, *White 13*, Dr. LODEMAN. 10, *White 10*, Mr. MOORE.

3. **French Literature of the Seventeenth Century.** Prose and verse of the classic writers of the century, including readings of plays by Corneille, Racine and Molière. Lectures and recitations. M., W., F., 9, *White 10*, Professor CRANE.

Open to all who have had courses 1, 2.

4. **Romance Seminary.** Old-Provençal literature in its relations to early Italian poetry. Chaytor's *The Troubadours of Dante*. S., 10-12, *French Seminary Room*, Professor CRANE.

Open only to graduate students, and others on application.

5. **Origin and Development of the French Language and Literature down to the Sixteenth Century.** Lectures. S., 9, *White 10*, Professor CRANE.

Open to those who have had courses 1, 2, and Latin required for admission.

6. **French Literature of the Eighteenth Century.** Lectures and recitations based on Bernardin's *Morceaux choisis des classiques français du xviii^e siècle*, with readings of plays by Regnard, Marivaux, Beaumarchais, and Voltaire. T., Th., 9, *White 11*, Assistant Professor OLMSTED.

Open to those who have had courses 1, 2.

7. **The French Romantic School.** Crane's *Le Romantisme Français* and plays by Hugo and Musset. W., F., 10, *White 11*, Assistant Professor Olmsted.

Open to those who have had courses 1, 2.

8. **The French Theatre of the Nineteenth Century.** A rapid reading course. Conducted in French. Th., S., 11, *White 11*, Assistant Professor OLMSTED.

Open to those who have had courses 1, 2, and, in the judgment of the instructor, are capable of pursuing the course with profit.

9. **French Phonetics, Old-French Texts, etc.** T., Th., 11, *White 3 B*, Mr. MURRAY.

Open to those who have had courses 1, 2, 3, or their equivalent, and Latin required for admission.

10. **French Fiction of the Nineteenth Century.** Lectures and recitations. T., Th., 12, *White 13*, Mr. GUERLAC. This course will be conducted in French.

Open to those who have had courses 1, 2.

11. **French Civilization in the Nineteenth Century.** Lectures in French on the social, political and literary life in France in the Nineteenth Century. S., 12, *White 13*, Mr. GUERLAC.

Open to those who have had courses 1, 2, 3, or their equivalent, and, in the judgment of the instructor, are capable of pursuing the course with profit.

12. **Elementary French Conversation and Composition.** T., Th., S., 11, *White 13*, Mr. GUERLAC.

Open to those who have had courses 1, 2, and, in the judgment of the instructor, are capable of pursuing the course with profit.

13. **Advanced French Conversation and Composition.** M., W., F., 11, *White 13*, Mr. GUERLAC.

Open to those who, in the judgment of the instructor, are capable of pursuing the course with profit.

14. ***Italian Reading.** Selections from Dante, Petrarch and Boccaccio. T., Th., 9, *French Seminary Room, Library*, Professor CRANE.

Open to those who have had course 15.

15.* **Italian Grammar and Reading.** M., W., F., 8, *White 11*, Mr. MURRAY.

This course cannot be taken in the same year with course 16, and is open to those who have had advanced entrance French or Latin.

16. **Spanish Grammar and Reading.** M., W., F., 12, *White 11*, Assistant Professor OLMSTED. T., Th., S., 8, *White 13*, Dr. LODEMAN.

This course cannot be taken in the same year with course 15, and is open to those who have had advanced entrance French, German, or Latin.

17.* **Spanish Reading.** Cervantes, Calderon, Lope de Vega. M., W., 11, *White 5*, Dr. LODEMAN.

Open to those who have had course 16.

* The hours for the courses marked with an asterisk may be changed to meet the convenience of those desiring to take them.

ENGLISH.

Rhetoric.

Course 1 is fundamental. Thorough instruction is given in the structure of the sentence and the paragraph; the general principles of diction are also taught and illustrated. Courses 2 and 3 are training in daily observation and reflection and in daily written expression.

Courses 14, 15, 16 are literary in substance, but are shaped with a view to the acquisition of a more finished prose style.

Courses 4, 9, 13 are designed for persons intending to become high-school teachers or desirous of studying literary expression more systematically.

Course 6 is designed for persons intending to study law, history, political science, philosophy, and other subjects involving a knowledge of argumentative methods.

1. **The technique of narrative, descriptive, and expository writing.** Open to all students in Arts. Three weekly exercises in sentence-structure, paragraphing, essay-draughting, and the interpretation of illustrative specimens.

Section 1, M., W., F., 9, White 2. Dr. COOPER. *Section 2, M., W., F., 9, White 1b.* Dr. MONROE. *Section 3, T., Th., S., 9, White 4.* Dr. COOPER. *Section 4, T., Th., S., 9, White 1b.* Mr. COX. *Section 5, M., W., F., 10, White 13.* Dr. COOPER. *Section 6, M., W., F., 10, White 1b.* Dr. MONROE. *Section 7, T., Th., S., 10, White 1b.* Dr. ANDREWS. *Section 8, M., W., F., 11, White 1b.* Dr. ANDREWS. *Section 9, T., Th., S., 11, White 1b.* Dr. ANDREWS. *Section 10, T., Th., S., 11, White 4.* Dr. MONROE. *Section 11, T., Th., S., 10, White 18.* Mr. COX. *Section 12, M., W., F., 12, White 1b.* Mr. COX.

All the work is under the direct supervision of the head of the department.

2. **English Composition.** Counts as three hours. Open to students who, having passed in Course 1, desire further training, especially in the technique of writing. The work will consist of short daily themes; longer themes mainly in exposition; conferences at hours to be arranged; and one lecture a week. Either Th., 12, or F., 12, *White 2.* Assistant Professor STRUNK, Dr. NORTHUP, and Dr. COOPER.

3. **English Composition.** Counts as three hours. Open only to students who have attained good rank in Course 1, or given other evidence of considerable proficiency in writing. The work will consist of short daily themes; longer themes mainly in description and nar-

ration ; conferences at hours to be announced ; and one lecture a week. Either T., 12, or W., 11, *White 2*. Assistant Professor PRESCOTT, Dr. MONROE, and Dr. ANDREWS.

Note.—Courses 2 and 3 are parallel courses ; except by special permission of the department, only one of them may be counted for a degree.

4. **Exposition.** Open to students who have had Courses 1 and 2 or 3. The writing of a number of expository essays of moderate length. Lectures on methods of research, the arrangement of material, and expository style. Study of texts. Designed especially to meet the needs of students in science, philosophy, and history. Counts as two hours. S., 9, *White 2*. Dr. NORTHUP.

6. **Argumentative Writing.** Open to students who have attained good rank in Course 1, or have had Courses 1 and 2 or 3. Preparatory to Course 42. Six written arguments, preceded by briefs. Study of masterpieces of argumentation. Lectures on argumentative writing and on the use of evidence. M., W., F., 10, *White 2*. Assistant Professor PRESCOTT.

9. **Advanced Composition.** Open to students of good standing in Courses 1, 3, 13, and also in one of Courses 4, 14, 15, 16. A general review of the art of writing, in connection with the critical study of some of the books prescribed for the entrance examination. Fortnightly papers, with practical exercises in correcting themes. M., F., 9, *Morrill 22*. Professor HART.

13. **Literary Forms.** Open to students who have had Course 1. Lectures and reports. A study of the origin and nature of the leading types of literary composition. First half-year : Narrative and Lyric Poetry, and the principles of Metre ; second half-year : the Drama and the principal forms of Prose. T., Th., 10, *White 2*. Assistant Professor STRUNK.

14. **English Prose, Seventeenth Century.** Open to students who have had Course 1. T., Th., 9, *White 2*. Assistant Professor STRUNK.

[14 a. **English Prose, Sixteenth Century.** Assistant Professor STRUNK.]

[15. **English Prose, Eighteenth Century.** Assistant Professor PRESCOTT.]

16. **English Prose, Nineteenth Century.** Open to students who have had Course 1. Lectures on the leading prose writers, with especial reference to style. T., Th., 11, *White 2*. Assistant Professor PRESCOTT.

Philology.

Courses 21 and 21a are elementary, for persons intending to become high-school teachers or desirous of studying early English history or Elizabethan literature.

Course 22 is for the special training of high-school teachers.

Courses 23 and 25 give thorough training in the methods of philological science as applied to English. The language is studied in its historical evolution, from the earliest recorded movements down to the seventeenth century. Stress is laid upon the relations between English and the cognate languages of the Continent. The collection of books and other material in the University (and seminary) libraries and in the possession of the head of the department are quite complete and afford ample facilities for the most advanced research.

21. The History of the English Language. Open to students in Arts who have had Course 1. An elementary course, complete in itself, but also furnishing an introduction to more systematic study. Readings in Old and Middle English, with a careful study of the grammar of Chaucer. M., W., F., 12, *Morrill 22*. Professor HART.

21 a. Review of Old and Middle English. Readings and lectures. Open to students who have had Course 21. Required in preparation for Course 22. M., W., 12, *White 2*. Dr. NORTHUP.

22. Grammar of Modern English. Open to students who have had Courses 21 and 21 a. Designed especially for students intending to become high school-teachers of English. Lectures and practical exercises. T., Th., 9, *Morrill 22*. Professor HART.

23. Old English Philology. For students engaged in the systematic study of the language. A knowledge of Greek, Latin, and German is required for admission. Students are also advised to take Course 21 in preparation. The phonology and inflections, first of Gothic, and then of Old English. Text-books, Wright, Gothic Language Primer; Cook-Sievers, Old English Grammar; Bright, Anglo-Saxon Reader. Accompanied by lectures on Teutonic philology, based chiefly upon Streitberg, *Urgermanische Grammatik*. M., W., F., 11, *English Seminary Room*. Assistant Professor STRUNK.

Note.—Students in Indo-European or in German philology may withdraw at the completion of the Gothic portion of the course.

25. Seminary in Old and Middle English. Open to students who have had Course 23. Subject and hours to be announced hereafter. *Morrill 22*. Professor HART.

Courses 1, 2, 3, 4, 6, 13, 14, 15, 16, 21, 21a, 22 are for undergraduates only and may not be taken as graduate studies.

Course 25 is primarily a graduate study.

Courses 9, 23 are primarily undergraduate studies, but may be taken as minor subjects for advanced degrees.

Course 1 is open to freshmen.

Courses 1, 2 (or 3), 9, 13, 21, 21a, 22 are required of students who desire to be recommended—by the department—to high school-teacherships of English. For other teacherships, 1, 2 (or 3), and either 4 or 9 are required.

All the courses except 23 must be continued throughout the college year.

Oratory.

Office of the Department, White Hall, 16a.

The instruction of the department embraces the art of speaking, including the philosophy of expression, the history of oratory, the writing and delivery of formal orations, and the theory and practice of logical debate.

The essentials of good speaking are taught in nine elective courses, two elementary and seven advanced, so planned as to afford a knowledge of the principles and opportunity to apply these principles under the direction of instructors.

The elementary courses are the courses in public speaking. Their aim is to give the student a practical training in the technique of speech which will fit him to pursue the advanced course in extempore speaking, debate and oratory, and prepare him as a speaker and thinker for public and professional life.

Those who elect the courses are divided into sections and the class exercises are conducted by the Professor of Elocution and Oratory, and two instructors. The work of the class-room is supplemented and further applied by the assistants in the department, who meet the students of the several sections by appointment.

Principles of thought and expression are established inductively, and applied by the student in connection with original speeches and selections from public addresses of rhetorical worth. The system teaches that there can be no right speaking without right thinking, and that the way to secure right thinking is to enlarge the powers of observation, memory and reason. The student is assisted to see and feel the full value of mental concepts, images and associated ideas, and to give expression to these as nature prompts. Stress is laid on originality in the interpretation of thought and emotion, complete assimilation, expression determined by the thought, not by the form of the sentences, rational gestures prompted by impulse, and a vocal culture that carries on voice-building and mind-training simul-

taneously. No imitation is permitted, and little of dogmatic or "elocutionary" theory finds a foothold. The purpose is to train, not public readers and elocutionists, but public speakers,—to start the young speaker on a course that will enable him to speak with composure, dignity and grace, and to satisfy the various demands of public life.

In the second half year, twelve speakers selected from the students pursuing the courses in public speaking contest for the prize founded by the class of 1886,—the '86 Memorial Prize in declamation.

The courses in oratory give an acquaintance with the masters and masterpieces of the oratorical art and aim to develop on the part of the student such an appreciation of true oratorical style that his writing may be more vigorous and better adapted to public delivery. The courses comprise lectures on the structure of orations and on oral discourse, the study of famous speeches, and the writing and speaking of orations. At the beginning of the year a limited field for research is determined upon by each student and all orations written by him during the year are based upon the result of this research. The productions are read and criticised with the writers and then delivered before the class and the public.

In the second half year there is a public contest in original oratory for the prize founded by the Hon. Stewart L. Woodford. Seniors may compete for a place in this contest according to conditions elsewhere described.

The courses in debate and extempore speaking are designed to ground the student in the principles of analysis, evidence and persuasion, and to give practice in the fields of argumentation and original public speaking, according to a carefully-planned system and under the eye of an instructor who offers daily criticism and suggestions.

Near the close of the first half year there is held a public contest in debate for the memorial prize founded by the class of 1894. Not more than eight contestants are chosen to compete for this prize according to conditions elsewhere described.

The prizes of the department are not restricted to any college or colleges in the University.

The following courses are offered for 1902-1903 :

40. **Public Speaking.** First half-year. An elementary course prescribed for admission to all the other courses of the department. A practical training in public speech, with especial emphasis laid on analysis. Open to juniors who have pursued one or more courses in the department of rhetoric, and to sophomores whose record in English of freshman year is of a high grade and who purpose specializing in the department of oratory during junior and senior years. Also

open to students in the College of Law who are not deficient in the English prescribed for admission to the college. Five sections, three hours. M., W., F., 9, 10, 11, 12; T., Th., S., 8, *White 16*. Assistant Professor LEE, Mr. W. R. LEE and Mr. OLDHAM.

Supplementary to this course and that which follows, English 40a, personal instruction will be given, by appointment, throughout the year. Messrs. LEE, OLDHAM and FRAYER.

The '86 Memorial Prize in declamation is awarded annually in connection with the courses in public speaking, the first competition being held at the end of the first half-year. For conditions governing this prize, see page 62.

40a. **Public Speaking.** Second half-year. Open only to those who have pursued course English 40, and prescribed for admission to other courses of the department named below. Thorough application of the principles of speech studied in the preceding course. Weekly speaking exercises; each exercise preceded by a written report following "How to study a declamation," and by personal instruction from one of the teachers of the department. Five sections, three hours. M., W., F., 9, 10, 11, 12; T., Th., S., 8, *White 16*. Assistant Professor LEE, Mr. W. R. LEE and Mr. OLDHAM.

42. **Brief-Writing and Debate.** The theory of the preparation of debates. Lectures and brief-writing. First half-year. Open in order of merit to a limited number of students who have passed English 6 and have pursued with distinction the courses in public speaking; and also to a limited number of especially qualified students in the College of Law who have passed English 40 and 40a with distinction. Two hours. S., 11-1, *White 16*. Assistant Professor LEE and Mr. W. R. LEE.

In the field of extemporaneous debate the University offers the '94 Memorial Prize, for conditions governing which see page 63.

42a. **Oral Debate, elementary.** Second half-year. The principles of argumentation applied to the oral discussion of questions of present interest. Weekly debates preceded by briefs. Open only to those who have passed courses 40, 40a and 42. Two hours. S., 11-1, *White 16*. Assistant Professor LEE and Mr. W. R. LEE.

42b. **Oral Debate, advanced.** First half-year. A half-course ending December 1. Open to those who have maintained a high standard of excellence in the two preceding courses in debate and who wish to enter the competitions for the '94 Memorial Prize. Credit, 1 hour first term. S., 9-11, *White 16*. Assistant Professor LEE.

43. **Extempore Speaking, elementary.** First half-year. Weekly addresses thoroughly outlined and mastered. Exercises based upon

assigned topics in the fields of American history and politics. Study of vocabulary and lectures on methods and systematic treatment. Open, in order of merit, to a limited number of students who have pursued English 40 and 40a with distinction. Two sections. Two hours. M., 4-6; T., 4-6, or other hours to be determined upon later.

White 16. Assistant Professor LEE and Mr. OLDHAM.

Application for admission to this course should be made before registration day of the first half-year.

43a. **Extempore Speaking, advanced.** Second half-year. Only those who have shown special proficiency in course 43 will be admitted to the advanced work. Weekly speaking exercises. Formal addresses. One section. Two hours. M., 4-6, *White Hall.* Assistant Professor LEE.

45. **Formal Oratory.** The writing and delivery of orations; theory and practice. First half-year. Exercise in writing orations, speeches and addresses. Each production read and criticized with the author. Public delivery of orations monthly. Open to seniors who have passed English 1 and 2, and have pursued with credit English 40 and 40a. This course will afford special training for those who wish to write orations in competition for the Woodford Prize in oratory. For conditions governing this prize see University Register. Two hours. T., Th., 12. Assistant Professor LEE.

45a. **The Masters and Masterpieces of Oratory.** Second half-year. Lectures and Readings. Open to any student who is qualified to enter the course in formal oratory. Two hours. T., Th., 12. Assistant Professor LEE.

English Literature.

The literature is presented in its *essential* character, rather than in its historical relationship, though the latter receives attention, but not such as to set the minds of students unnecessarily in that direction. It is considered all important that students should, in their literary education, first attain to a sympathetic assimilation and appreciation of literary masterpieces in their absolute character, before their adventitious features—features due to time and place—be considered.

An exposition of what is made the leading purpose of the studies pursued, is presented in the Professor's "Aims of Literary Study" and "The Voice and Spiritual Education."

The following courses are offered in 1902-1903 :

50. **Lectures, with Readings, on English Literature** from Tennyson and the Brownings to Milton, inclusive, the chronological order being reversed. Twenty lectures will be included on the drama of

the Restoration, the Collier Controversy, and the subsequent drama down to Goldsmith and Sheridan. Throughout year. M., W., F., 10. *Barnes Hall*. Professor CORSON.

51. **Shakespeare Readings.** The following plays will be read by the Professor, with lectures on their dramatic situations, their moral spirit as exhibited in the dramatic movement, their perspective, and the subserviency thereto of the told element, and other features of Shakespeare's dramatic art: *Romeo and Juliet*, *The Merchant of Venice*, *A Midsummer-Night's Dream*, *King John*, *Much Ado About Nothing*, *Hamlet*, *Othello*, *King Lear*, *Macbeth*, *Antony and Cleopatra*, *The Winter's Tale*, *The Tempest*.

Each play must be read by the members of the class, carefully and entirely, in advance of its reading by the Professor. Five readings will be devoted to each play, each reading being confined to one act. Throughout year. T., Th., 10. *Barnes Hall*. Professor CORSON.

53. **Chaucer's Canterbury Tales, The Vision of William concerning Piers the Plowman, and Spenser's Faerie Queene.** For seniors and graduates only. Throughout year. M., 11. *Barnes Hall*. Professor CORSON.

54. **Lectures, with Readings, on American Literature,** from Bryant to the present time. Throughout year. W., F., 11. *Barnes Hall*. Professor CORSON.

55. **Seminary.** For Seniors and graduates only. The works to be studied, and on which papers are to be written, will be announced at the first meeting of the Seminary soon after the beginning of the year. The papers to be read during the second half-year. Professor CORSON.

56. **Miscellaneous Prose and Poetical Readings, and Literary Conversazioni.** For seniors and graduates. T., 8-10 P. M. *Cascadilla Cottage*. Professor CORSON.

PHILOSOPHY

The Department of Philosophy is known as "THE SUSAN LINN SAGE SCHOOL OF PHILOSOPHY." This school owes its existence to the generosity of the late Henry W. Sage, Chairman of the Board of Trustees from 1875 to 1897. At a meeting of the Board held Oct. 22d, 1890, Mr. Sage signified his intention of adding to the endowment of the Susan Linn Sage philosophical professorship, which he had established in 1886 in memory of his wife, a further gift of \$200,000 to the Department of Philosophy. His object was to provide permanently at Cornell University for philosophical instruction and investigation of the most varied kind and of the highest order. To that end he stipulated that the Trustees should, whenever it was needed, supple-

ment the proceeds of his endowments with appropriations from the general funds of the University. The gift was made and the legislation went into effect in September, 1891.

There are ten members of the instructing corps; a professor of the history and philosophy of religion, a professor of logic and metaphysics, a professor of psychology, a professor of moral philosophy, an assistant professor of ancient and mediæval philosophy, two assistant professors in philosophy, an assistant professor and two assistants in psychology. Thus all sides of philosophy are represented in the courses of instruction. Furthermore every method of discovering truth—observation, experiment, historical investigation, reflection, and speculation—is employed within its appropriate domain.

The endowments of the School of Philosophy enable it to secure besides this large faculty of specialists, whatever material facilities they require for the successful prosecution of philosophical studies and research. There is already a full equipment in some of the most important lines, and additions will be continually made as required. All the philosophical journals published, both at home and abroad, are received. The library is also well supplied with philosophical works; and books not on hand are ordered when needed. In the new library building there is a large seminary room set apart for the exclusive use of advanced students in philosophy. This room contains complete sets of the more important philosophical journals, American, English, French, and German, and a carefully selected collection (which is being constantly enlarged) of books necessary for special study and independent research. Another room in the library building has been assigned to the School as an editorial room for "The Philosophical Review."

The Psychological Laboratory (Morrill Hall) consists of a suite of ten rooms, occupying a space of approximately 140 x 45 feet. Seven rooms are supplied with the direct current from the University circuit, five have gas, and three water. Every room is connected with every other by an elaborate system of telegraph wires, so that two or more rooms can be employed in a single investigation. Two rooms are devoted to work in psychological optics (one of them a dark room, 18 x 24 feet); and one each to acoustics, haptics, investigation into taste and smell, and chronometrical registration. A large lecture-room is used for experimental drill-work and demonstration. There are further a workshop and storeroom, a small room for special research work, and an office and seminary. The laboratory is especially rich in acoustical and haptical apparatus, while it is adequately supplied with the instruments necessary in other lines of investigation.

The equipment is undergoing continued improvement and apparatus needed for thesis work is at once procured. A skilled mechanic, is in the service of the Department.

The Philosophical Review, now in its eleventh year, marks another function of the School, namely, the publishing of the results of investigation. It appears once in two months, each number containing from 112 to 128 pages. A large part of the material of the *Review* is contributed by the professors, fellows and graduates in the Sage School of Philosophy. It is found that the *Review*, which stands thus in the closest connection with the School, is an effective stimulus to students, whose constant intercourse with the members of the staff engaged in writing and planning for it, enables them to keep abreast of current philosophical problems and discussions. The *Review* also furnishes advanced students with a ready medium of publication. The results of original investigations which have been accepted for doctor's degrees are, in some cases, published in it.

With the *Review* for publishing and a large faculty of specialists for investigating, the School lays great stress upon original research and inquiry. While much of the instruction is intended for undergraduates, the larger part of it is adapted to the needs of graduates of this and other institutions who are preparing themselves for positions as teachers, professors, etc. A student who has made a special study of philosophy during his junior and senior years, may still take a graduate course of three years' work in psychology, or metaphysics, or ethics, or in any other single philosophical discipline as his major subject. And for the encouragement of higher studies and research in every branch represented by the School of Philosophy there have been established for award to distinguished graduates of this and other Universities, six scholarships of the annual value of \$300 each, and three fellowships of the annual value of \$500 each, both scholarships and fellowships being tenable for one year, but subject to renewal in exceptional cases. (A full account of these scholarships and fellowships will be found on page 65). The instruction of these advanced students is carried on in the seminaries and laboratory, where the students are fellow-workers with their teachers, who seek to guide them, partly by direct suggestion, and partly by precedent and example. It is believed, too, that students will receive much instruction, as well as enjoyment and benefit, from the close personal intercourse which it is an object to the School to cultivate between graduates and the members of the philosophical faculty. Students taking the graduate courses are in this way very effectively trained for the work of teaching; and it may be mentioned that most of the men

who have completed their courses, have received appointments as instructors or professors of philosophy in different parts of the country.

Bracketed courses are not given in 1902-1903.

The courses in philosophy are designed for sophomores, juniors, seniors and graduates.

Psychological courses will be found under the numbers 1, 2, 18, 20, 21, 22, 40; courses in *Logic* and *Metaphysics*, under numbers 1, 24, 26; courses in *Ethics* under numbers 1, 6, 7, 28, 29, 43; course in *Aesthetics* under the number 16; courses in the *History of Philosophy* under numbers 3, 4, 5, 9, 10, 11, 12, 14, 15, 24, 25, 26, 27, 30, 31, 32, 33, 41, 42; courses in the *History and Philosophy of Religion* under numbers 8, 34, 44; *Reading Courses* under numbers 9, 14, 18, 19.

CONSULTATION HOURS.

Professor TYLER, M., 12, *White 9*. Professor CREIGHTON, T., Th., S., 1, *White 5*. Professor TITCHENER, until Christmas, T., Th., S., 12; after Christmas, M., W., F., 3, *Psychological Seminary Room, Morrill 16*. Professor MCGILVARY, W., F., 10, *White 9*. Professor HAMMOND, M., W., 12, *White 3a*, and at residence daily, 1:45-2:30.

I. Course Primarily for Sophomores.

1. **Introduction to Philosophy: Psychology, Logic, Ethics.** T., Th., S., 11. Psychology, until Christmas, *Psychological Laboratory Lecture Room*. Professor TITCHENER. Logic, until Easter, *Library Lecture Room*. Professor CREIGHTON. Ethics, after Easter, *Library Lecture Room*. Professor MCGILVARY.

Note.—Although Course 1 constitutes a single course, and must be taken as a whole, separate reports are made upon the three subjects treated, the credit being allowed as follows: Psychology, 2 hours first half-year; Logic, 1 hour for each half-year; Ethics, 2 hours second half-year.

This course is intended as a general introduction to the study of Philosophy through its central disciplines. The course, or its equivalent, is required of all those who propose to take work in Philosophy during their Junior or Senior year.

During the first third of the year, the class meets for lectures on Psychology by Professor Titchener, whose aim is at once to give an outline of what is established in the subject, and to remove obstacles from the path of beginners in mental science. The topics of sensation, affection, and attention are discussed in detail, and some time is devoted to the psychology of the abnormal (dreaming, hypnosis, and insanity) and to comparative psychology. The course concludes with

lectures on the more complex mental processes, emotion, action, and association. Students who intend to enter upon this course are advised to take work in Physiology during their Freshman year. The lectures are supplemented throughout by experimental demonstrations, and Titchener's *Outline of Psychology* is used as a text book in the course. (For continuation of the work in psychology, see *Note* under Course 2, below.)

On the completion of this course at Christmas, Logic is taken up during the second part of the year. The lectures will present in an elementary way what is known regarding the general character of the thinking process and the methods by which thought actually proceeds to solve the problems presented to it. A considerable amount of attention will also be given to the analysis of logical arguments and the detection of fallacies. Creighton's *Introductory Logic* will be used as a text-book.

After the Easter recess Professor McGilvary will give a series of lectures on Ethics, the object of which will be to bring out the distinctive features of moral action and to secure an insight into the leading principles underlying it.

II. Courses Primarily for Juniors and Seniors.

2. **Experimental Psychology.** Laboratory Work, with occasional lectures. M., W., F., 3, *Psychological Laboratory*. Professor TITCHENER, Assistant Professor BENTLEY, Dr. BAIRD, and Mr. —.

The course falls into two parts. (1) For the first half of the year, the student's attention is devoted to the qualitative experiments upon sensation, affection, attention, action, perception and idea, and the association of ideas, outlined in Titchener's *Experimental Psychology*, Pt. I. The lectures supplement the laboratory work, on the side of systematic psychology. (2) In the second half of the year, lectures are given, with demonstrations, on the chief psychological measurement methods. The laboratory work is quantitative: verification of Weber's law in the various sense-departments, determination of stimulus limens, measurement of memory and attention, the psychophysics of volitional and selective action (compound reaction experiments), etc.

The object of the course is to familiarize the student with the elementary mental processes and the laws of their connection, and to accustom him to the handling of instruments of precision. The course is complete in itself, and may therefore be taken by those who desire to go farther than Course 1, but have no wish to make a special study of psychology. It will naturally be useful also to those who

intend to graduate with a psychological thesis, as a preliminary to the systematic work of Course 20.

Note.—Students in their second year who have taken the psychological portion of Course 1, may enter this course for 1, 2, or 3 hours, while they are completing the Sophomore course in Logic and Ethics.

3. **History of Philosophy.** Lectures, prescribed reading, and occasional essays. T., Th., S., 12, *White 5*. Professor CREIGHTON.

This is an elementary course, and is intended primarily for the general student who wishes to know something of the history of thought, and the influence which philosophical ideas have exerted in the development of civilization. The lectures will give a general account of the history of philosophical speculation from its origin among the Greeks to the present time. An attempt will be made to present the various philosophical systems in their relation to the science and general civilization of the ages to which they belong, and to estimate their social and political significance. After a rapid survey of philosophy during the Greek, Roman, and Mediæval periods, the greater part of the year will be devoted to the theories and problems of modern times. It is proposed to give a considerable amount of time during the latter part of the course to a study of the speculative problems of the present century, and especially to an examination of the philosophical meaning and importance of the notion of Evolution or Development. Reading will be assigned from time to time, but there will be no class text-book.

4. **History of Ancient and Mediæval Philosophy.** Lectures and text-book. T., Th., 10. *White 5a*. Assistant Professor HAMMOND.

In this course will be treated the history of philosophical ideas from the early Greek cosmogonies down to the time of the Renaissance. The conditions under which occidental philosophy was developed and fostered from its beginnings in Greek literature, and the relations of those conditions to oriental influence, will form the subject of the introductory lectures. It will be the aim of the course to discuss the various systems and fragments of systems from Thales to the Neo-Platonists, and also the later influences of these systems in Rome, more particularly the ethical systems of Epicureanism and Stoicism. The course will then deal with the various movements of speculative thought in the Middle Ages. These philosophical ideas will be discussed in connection with the contemporaneous conditions of science and culture, and as the historical antecedents of modern intellectual life. Windelband's *History of Ancient Philosophy* and Gomperz's *Greek Thinkers* (both published by Charles Scribner's Sons, New York), will be used as text-books.

5. **Platonism.** Lectures on the Philosophy of Plato and reading of the Dialogues. S., II. *White 5.* Assistant Professor HAMMOND.

In the lectures of this course, Plato's philosophical system will be explained and the history of its influence on literature and culture discussed. In connection with the lectures, the following dialogues will be read: Apology, Crito, Protagoras, Gorgias, Theætetus, Phædo, Timæus, Republic, and parts of the Laws. The course is intended for students of literature as well as of philosophy.

6. **General Ethics.** Lectures, papers and discussions. W., F., *White 9.* Professor MCGILVARY.

The main problems of Ethics will be studied, chiefly with reference to their bearings on life. The more important psychological and sociological data will be presented, and the question of the relation of the individual to society will be treated somewhat in detail. This will involve an inquiry into the meaning of freedom and of moral responsibility, into the possibility of the reign of law in conduct, into the relation between tradition and individual initiative, and into the significance of human institutions for the moral life. In the light of the results thus obtained, the current conceptions of duties and virtues will be critically examined, and the metaphysical implications of morality will be discussed, especially in connection with the problems of theism and immortality.

7. **Applied Ethics.** Lectures. Th., 12. *White 9.* Professor TYLER.

In the early part of the year, the lectures of this course will be devoted to a discussion of the practical value of the ethical ideals given by Sociology, Utilitarianism, Aestheticism, Optimism, and Culture. The individualistic applications of these ideals will then be considered, and the personal virtues—right use of the intellect, control of the passions, truthfulness, honor—will be discussed. During the second term, the lectures of the course will treat of the bearing of moral standards upon Social Relations, the Duties of Friendship, Riches and Poverty, Public Opinion, University Life, the Theatre, the Press, Incivism, and kindred topics. The lectures will keep in view the mutual bearings of practical ethics and Christian civilization.

8. **History of Religions.** Two courses. M., W., 12. *White 9.* Professor TYLER. Course 8 (a) M., Primitive Religion; course 8 (b) W., Comparative History of Religion.

These lectures will be given in two courses, one hour each. They may be taken separately. The course on Mondays will deal with Primitive Religion, or the psychological origin of the religion of the first man, the origin of religious ideas, cults, and rites of Syro-Arabic and other peoples. The relation of the religion of Israel to ante-

cedent Semitic religions and the survival of ideas, names, and forms in the religion of Israel will be presented. A. Reville, W. Robertson Smith, and other authorities will be consulted by the student. The *History of Religions* by Dr. Allan Menzies will be used as text-book. The course on Wednesdays will deal with Comparative History of Religion: the religions of Persia, India, Egypt, China, Greece, and Rome. Rhys Davids, Oldenburg, C. P. Tiele, Brinton, and others will be consulted as authorities.

9. **The Republic of Plato.** Reading of the Greek text. M., W., F., 10. *White 5a.* Assistant Professor HAMMOND.

This course is intended for students of Greek Literature as well as of Greek Philosophy. The Republic will be read in its entirety, the main attention being devoted to the content. The text used will be that of Teubner, and Pater's *Plato and Platonism* (The Macmillan Co., New York) is recommended as a commentary.

10. **The Philosophy and Culture of the Renaissance.** Lectures. First half-year. S., 10. *White 5.* Assistant Professor HAMMOND.

The lectures of this course will deal with the Philosophy of Humanism from 1300 to 1600.

11. **The Influence of Philosophic Ideas upon Nineteenth Century Literature.** Lectures. Second half-year. Sat., 10. *White 9.* Assistant Professor LEFEVRE.

This course, open to both graduate and undergraduate students, will trace the general influence of philosophical conceptions, and particularly of German Idealism, upon English and American Literature. The opening lectures will discuss the general relations of philosophy and literature, and also outline and contrast the leading philosophical conceptions of eighteenth and nineteenth century thought. Coleridge will be then made the starting point, and Wordsworth, Carlyle, Emerson, Matthew Arnold, and Browning will be successively treated from this special point of view.

12. **The Theory of Evolution: Its History and Significance.** Lectures. F., 12. *White 9.* Assistant Professor LEFEVRE.

These lectures are intended primarily for undergraduates. They do not presuppose acquaintance with the history or special terminology of philosophy. The opening lectures will trace the history of the theory of evolution from the first appearance of the concept among the Greeks to its formulation in modern times by Darwin. It is then proposed to discuss the recent modifications of the theory, and to indicate the application of the evolutionary method to the various sciences, special attention being directed to its bearing on ethics, sociology, and religion. In conclusion, an attempt will be made to estimate the

significance of the evolutionary point of view for a theory of the world as a whole.

14. **Aristotle's Ethics.** Reading of the Greek text. M., 12 (or other hour to be arranged). *White 5a.* Assistant Professor HAMMOND.

In this course the *Nicomachean Ethics* books I-IV and X will be read and interpreted. The course is intended for such students of Greek as wish to read rapidly through an Aristotelian treatise and for such students of philosophy as wish to examine Aristotle's ethical ideas in the original.

15. **Thomas Aquinas:** Selections from the *Summa theologica*. F., 12. *White 5a.* Assistant Professor HAMMOND.

This course is intended for students who desire to study at first hand the *Summa theologica*. In connection with the reading of the text the members of the class will study the general system of Thomism and the completion of Mediæval Philosophy.

16. **Introduction to Aesthetics.** An elementary course on the philosophy of art. Lectures, assigned readings, and examinations. M., 11, *White 6.* Assistant Professor HAMMOND.

The aim of this course is to give an historical survey of the more important theories of Aesthetics, to explain the nature of the aesthetic judgment and its significance for life, and to discuss some of the philosophical problems connected with the various forms of beauty and art: literature, industrial and decorative art, and the fine arts. The course will be of an elementary character, and is open to all students who have taken or are taking Course 1.

Reading Courses:—

18. **Reading of German Psychology.** Second half-year. T., 9 (or other hour, to be arranged). *Laboratory Lecture Room.* Professor TITCHENER.

The aim of this course is to assist towards the accurate and idiomatic rendering of German psychological literature. Fechner's *Elemente der Psychophysik*, vol. i., will be translated in class.

Students who desire to read and translate a psychological monograph in French, German or Italian, during the first half of the year, are requested to communicate, as early as possible, with Professor TITCHENER or Assistant Professor BENTLEY.

19. **Rapid Reading of German Philosophy.** S., 12. *White 5a.* Assistant Professor LEFEVRE.

The primary aim of this course is to aid the students in acquiring facility in translation and a knowledge of German philosophical terminology. Schopenhauer's *Essay Ueber die vierfache Wurzel des Satzes vom zureichenden Grunde* will be translated.

III. Courses Primarily for Seniors and Graduates.

20. **Systematic Psychology.** Lectures, essays, and experimental illustrations. M., W., F., 9. *Laboratory Lecture Room.* Professor TITCHENER, Assistant Professor BENTLEY, and Dr. BAIRD.

The object of the course is twofold: to give the student a complete, if tentative, system of psychology, based upon the results of the experimental investigation of consciousness; and at the same time, by copious references to rival theories, to orientate him in experimental psychological literature. The first third of the year is devoted to a general introduction (problem, method, relation, and literature of psychology), and to a consideration of the problems of sensation and affection; the second third, to the topics of qualitative perception (with special emphasis upon the phenomena of tonal fusion), attention, and emotion; the remaining period, to those of spatial and temporal perception, memory and imagination, action and sentiment.

Essays will be written by the class on psychological questions. The most valuable of these may be published; several have already appeared in *Mind*, *The Philosophical Review*, and *The American Journal of Psychology*. There will be no text-book, but members of the class will be expected to be familiar with Wundt's *Human and Animal Psychology* and *Outlines of Psychology*, Sully's *Human Mind*, and Külpe's *Outlines of Psychology*, and with selected portions of James' *Principles of Psychology*, Stout's *Analytic Psychology*, and Wundt's *Grundzüge der physiologischen Psychologie*.

The course may be taken by any student who has had Courses 1 and 2, or their equivalents. It must be taken by all those who undertake advanced work in the psychological laboratory (cf. 40, below). It will also be found useful by teachers, as a basis for work in the science and art of education.

21. **Laboratory Exercises in Psychology.** Hours to be arranged. *Psychological Laboratory.* Professor TITCHENER, Assistant Professor BENTLEY, Dr. BAIRD, and Mr. ———.

These exercises will consist primarily in the repetition by the student of certain classical experiments in psychology, carried out in greater detail and with more accuracy than is possible in Course 2. They may also take the form of an original investigation in problems growing out of the work of that course, or of the simpler problems suggested by the lectures of Course 20. The course may occupy from one to five hours a week, at the option of the student.

22. **History of Psychophysics.** Second half-year. Th., 9 (or other hour, to be arranged). *Laboratory Lecture Room.* Assistant Professor BENTLEY.

This course is open to students who have taken (or are taking) Course 20. The lectures will deal with the history of Psychophysics, as defined by Fechner, devoting especial attention to the works of E. H. Weber, Fechner, Wundt, Hering, Helmholtz, G. E. Müller, and Delbœuf.

24. **Empiricism and Rationalism.** Lectures, discussions, and essays. T., Th., 10. *White 5.* Assistant Professor LEFEVRE.

In this course the empirical movement as represented by Locke, Hume, and Mill, and the rationalistic movement as represented especially by Descartes, Spinoza, Leibniz, and Wolff, will be studied with reference to their distinctive methods. The course is open to students who have taken, or are taking, Course 3 or an equivalent. The books needed will be Locke's *Essay* (Bohn edition, 2 vols.), Hume's *Treatise of Human Nature* (Clarendon Press), and Leibniz's *Philosophical Works* (Duncan's translation, Tuttle, Morehouse & Taylor, New Haven).

25. **The Critical Philosophy of Kant.** Lectures and discussions. T., Th., 11. *White 5a.* Assistant Professor ALBEE.

This course will presuppose a knowledge of the History of Philosophy. The greater part of the year will be devoted to the careful study of the *Critique of Pure Reason*, Müller's translation (published by the Macmillan Co.) being used in class. Frequent references will be given to standard commentaries and to the more recent literature on the subject. Toward the end of the year, the attempt will be made to show as clearly as possible the relation in which the three Critiques of Kant stand to each other. Instruction will be given mainly by lectures, but there will be opportunity for frequent discussions, and outside reading will be assigned from time to time.

26. **Problems of Metaphysics.** First half-year. Lectures and discussions. M., W., 12. *White 5.* Professor CREIGHTON.

This course is open to students who have had Course 3 or its equivalent. It is proposed to examine somewhat systematically, by means of lectures and informal discussions, the leading types of philosophical theory, such as Materialism, Idealism, and Pluralism. An attempt will also be made to indicate the general principles and method according to which we must proceed, in order to reach a tenable theory of the world and man's place in it.

27. **Post-Kantian Idealism.** Lectures and textual study. M., W., 12. *White 5.* Assistant Professor LEFEVRE.

In this course the class will read several of Fichte's introductory treatises, together with the greater part of the *Wissenschaftslehre*, portions of Schelling's *System des transcendentalen Idealismus*, and Hegel's *Smaller Logic*. The purpose of the course is to afford students

guidance in obtaining some first-hand knowledge of this field. In dealing with Hegel, in particular, the members of the class will be expected to undertake the study of special problems, and to utilize the investigations of all the main commentators so far as time will permit.

28. **The History of Ethics.** Lectures, essays and discussions. W., F., 11. *White 9.* Assistant Professors HAMMOND and ALBEE.

A history of ethical reflection, with special reference to the development of theories of morals in their relations to one another and to the general influences of their time. The first half-year will be occupied with the study of the moral theories and ideals of the peoples of Ancient Greece and Rome and of the Middle Ages. The second half-year will be given to the careful examination of modern theories, with special reference to the development of English ethics.

29. **Systematic Ethics.** W., F., 10. *White 9.* Professor MCGILVARY.

Some of the more important writers of different schools will be studied in detail by the students and will be fully discussed in class. Thus an acquaintance with recent systems will be gained, and by comparison of system with system an attempt will be made to secure appreciation of the strength and weakness of the various schools. All this work will be conducted with a view to aiding the student in reaching a constructive result.

[30. **German Pessimism, with special reference to Schopenhauer and E. von Hartmann.** Lectures and discussions. Two hours. *White 5a.* Assistant Professor ALBEE.]

This course was given in 1901-1902, and will be repeated in 1903-1904.

31. **The Philosophy of Lotze.** Lectures and discussions. T., Th., 12. *White 5a.* Assistant Professor ALBEE.

This course is intended to give the student a comprehensive view of Lotze's philosophical system. The main part of the work will consist in the careful study of the *Metaphysic* (Bosanquet's translation, Clarendon Press); but the greater part of the *Microcosmus* will also be read, and other collateral reading will be assigned from time to time.

[32. **Recent German Philosophy.** Lectures. One hour. Assistant Professor LEFEVRE.]

This course was given in 1901-1902, and will be repeated in 1904-1905.

[32. **Recent English Philosophy.** Lectures. *White 5a.* Assistant Professor LEFEVRE.]

During 1902-1903, the seminary in Logic and Metaphysics (Course 42) will take the place of this course of lectures.

[33. **Recent French Philosophy.** Lectures. One hour. Assistant Professor LEFEVRE.]

This course will be repeated in 1903-1904.

34. **Philosophy of Religion.** Two courses : (a) lectures, T., 12 ; (b) discussions and essays, Th., 4-6. *White 9.* Professor TYLER.

In section (a) the grounds of religious belief—metaphysical, ethical, aesthetical, and spiritual—will be treated in as popular a style as the nature of the subject will permit. Agnosticism, Pantheism, and Theism will be compared with each other. The last few minutes of the lecture hour may be occupied by the asking of questions. In section (b) Martineau's *Study of Religion* and Lotze's *Outlines of the Philosophy of Religion* will be made the basis of work. Pfeiderer, Max Müller, Renouvier, Reville, Campbell Fraser, and other writers will be consulted. In this section there is extended the privilege of free discussion, and short papers will from time to time be read and discussed.

IV. Seminars.

40. **Seminary in Psychology, and Advanced Laboratory Work.** Afternoons, except S., 2-6 ; M., W., F., 10-12. Professor TITCHENER, Assistant Professor BENTLEY, Dr. BAIRD, and Mr.—.

(a) *Graduate Section.* Graduate students will meet weekly by appointment with Professor Titchener or Assistant Professor Bentley, for the critical and historical discussion of psychological questions. These will, for the most part, be chosen with reference to thesis-subjects for advanced degrees. Theses need not necessarily be experimental ; but students who graduate without undertaking original research in the laboratory must have taken Courses 2 and 20 or their equivalents.

(b) *Undergraduate Section.* Special hours will be set apart for reports of progress in undergraduate thesis-work, experimental or historical. In the Senior laboratory work, experimental problems, of a kind to extend over one or both half-years, will be chosen to suit the inclination and attainment of students. The professor or his assistants will take constant part in all investigations in progress.

41. **Seminary in Ancient and Mediæval Philosophy.** W., 3-5. *White 5a.* Assistant Professor HAMMOND.

In this Seminary, which is open to graduates and seniors, students will be directed in thesis-work or in any special investigations they may be carrying on within the department of Ancient and Mediaeval Philosophy. Once a week, in the hours above named, the members of the seminary will read the *De anima* of Aristotle.

42. **Seminary in Logic and Metaphysics.** M., 3-5. Professor CREIGHTON and Assistant Professor ALBEE.

During the year 1902-1903, this seminary will be devoted to a study of some of the more important contributions to metaphysical theory which have been made during the last decade. By the study of recent books and periodical literature, the fundamental postulates and tacit agreements under which the philosophical thought of the present day is working will be brought to light, and, by this examination of contemporary theories students will be aided in both critical and constructive work.

43. **Ethical Seminary.** T., 3-5. *White 5a.* Professor MCGILVARY.

The subject for 1902-1903 will be the theory of value, especially in its application to Ethics. The writings of Brentano, Meinong, von Ehrenfels and other recent theorists will be read and discussed in detail.

44. **Seminary for the History and Philosophy of Religion.** Two hours. Professor TYLER.

In this course, graduate students who have undertaken theses on the History or Philosophy of Religion will be assisted in the work of investigation.

THE SCIENCE AND ART OF EDUCATION.

Students wishing to qualify for the New York State college-graduate certificate are expected to take the state preliminary examinations before entering upon the courses in the Science and Art of Education. These examinations are set for the last Thursday in September and the first Thursday in May, and extend through two days in each case. The student may combine the standings earned in any three consecutive examinations. The subjects are grouped into four papers, as follows: 1. Arithmetic, Algebra; 2. American History, Civics, Geography; 3. Physiology, Physics; 4. Grammar, English Composition, Orthography. To qualify for the aforementioned certificate students are required to take an aggregate of eight hours of work for one year in the Science and Art of Education.

The theory of education being an applied science, finds its basis in psychology and ethics, on the one hand; and in political and social science, on the other. Students in this department are, therefore, recommended to pay much attention to these fundamental studies. Courses I in philosophy or its equivalent is required as a preparation for entrance upon the courses in the Science and Art of Education.

A. Courses Primarily for Undergraduates.

1. **Philosophy of Education.** Lectures, discussions and text-book study. M., W., F., 2, *White 10.* Professor DEGARMO.

This course deals first with the relation of all school activities to

modern society, and second with the principles underlying the art of teaching. The Friday lecture of this course is the same as in course 2.

2. **Friday Lectures on High School Work and Administration.** F., 2-3, *White 10*.

These lectures are given mostly by prominent principals and superintendents of New York and other states. One hour's credit will be given for attendance at the lectures.

3. **History of Education.** Lectures, prescribed readings and essays. T., Th., 3, *White 10*. Professor DEGARMO.

This course includes a general survey of the whole history of education, and a special study of the following topics: the education of the Greek people; the rise and development of humanism; the educational doctrines of Comenius, Rousseau, Pestalozzi, Froebel, Herbart, Spencer; the development of modern systems of education.

4. **Psychological Basis of Education.** Lectures, discussions, and text-book study. T., Th., F., 2, *White 10*. Dr. WHIPPLE.

This course has a two-fold object; on the one hand, by means of lectures to furnish a scientific system of functional psychology; on the other hand, to make a critical examination of various books in which educational problems are approached from the psychological side in order to show how the facts of functional psychology have been applied by the authors. As an aid in this examination special attention is given to the conditions under which these books were written,—to the scientific and philosophical training of the authors, to the social and educational atmosphere surrounding them, etc. It is expected that students will thus gain a thorough acquaintance with the current systems of applied psychology and a definite standpoint for criticism. The Friday lecture of this course is the same as in course 2.

5. **Teachers' Course in Latin.** Lectures on problems connected with the teaching of Latin in the secondary school. Practical exercises in the study of the grammar and of Virgil's *Aeneid*. Study of evidences for the pronunciation of Latin. Hidden quantities. Peculiarities of Orthography. Theoretical consideration of Latin syntax. M., W., F., 12, *Morrill 3*. Professor BENNETT and Assistant Professor DURHAM.

The general aim of this course is to prepare students that intend to teach to enter upon their first year of work with confidence. See also under Latin, courses 26a and 26b.

6. **Teachers' Course in Greek.** The subjects treated will be those contained in "The Teaching of Greek in the Secondary School," which will be used as a text-book. The attention of the class will be directed to the problems connected with the teaching of the language and the literature, and to the auxiliary helps for the interpretation of

the latter. The entire *Anabasis* of Xenophon will be read with the class, and portions of Homer's *Iliad* will be studied. T., Th., 12, and Monday evening 7.30, *White 3 B.* Professor BRISTOL.

The hours in Courses 5 and 6 may be counted towards the number requisite for the certificate in the department of the Science and Art of Education.

B. Courses Primarily for Graduates.

Graduate students selecting education for their major will be expected to take from one-half to two-thirds of their work in the studies that are fundamental to an adequate mastery of educational theory and practice. These fall naturally into two groups, the philosophical and the social. The philosophical studies include psychology, ethics and the history of philosophy; the social studies include political, social and economic science.

12. **School Supervision.** Lectures and discussions. M., W., 3, *White 10.* Professor DEGARMO.

This course presents a comparative view of the various problems of elementary school administration in this and other countries. It investigates especially, courses of study; school management; principles of grading, promoting, and examining pupils; the appointment, dismissal and guidance of teachers; construction, heating, ventilating, lighting and adorning school buildings; school sanitation; relation of teachers to pupils and parents.

13. **Mental Development, a Study of the Growth of the Individual Mind.** Lectures, prescribed reading and essays. M., W., F., 4, *White 10.* Dr. WHIPPLE.

The introductory portion of this course will deal with the genesis of consciousness at large, and the operation, during the course of evolution, of such factors as heredity, economy of energy, reflex and instinctive action. In the light of this introduction the development of the human mind from infancy through childhood and adolescence will be treated. The material for this course must be largely gathered from current periodicals and monographs, English, French and German. A knowledge of either French or German is required.

14. **Seminary for Experimental Investigation.** *White 7b.* Hours to be arranged. Dr. WHIPPLE.

15. **Seminary for the Science and Art of Education.** M., 7:30 p. m. Professor DEGARMO and Dr. WHIPPLE.

The work of the seminary will consist of reports and theses upon educational problems, partly of a social and partly of a psychological nature. These reports and theses will involve study from original sources. French and German are required.

MUSIC.

1. **Chorus.** Course in chorus singing, including study of elementary principles of vocal culture, sight reading, chanting and singing of standard church music.

This course is open to students giving satisfactory evidence of possessing necessary qualifications at the opening of the University year. Attendance at two rehearsals each week and at the Sunday morning service in Sage Chapel is required.

Rehearsals, Tuesday, 5:15 to 6:15 ; Thursday, 7:15 to 8:15 p. m., *Sage Chapel*. Two hours. Mr. GEORGE GOLDSMITH DALAND.

2. **Advanced Chorus.** Sight reading, study, interpretation, and public presentation of the best choral works. This course is offered as advanced training to students possessing good voices and who have had elementary instruction in musical notation. Examination for admission will be held at the opening of the University year. Members of this class will unite with the Conservatory Chorus, which will participate in the weekly vesper services. Mr. BEALL.

3. **Orchestra.** Study and public presentation of compositions for strings and full orchestra. The orchestra will assist the advanced chorus at the Sunday afternoon Vesper Services. This course is open to students who play orchestral instruments well enough to pass a required test examination which will be held at the opening of the University year. Two hours. Hours to be arranged. Mr. EGBERT.

HISTORY AND POLITICAL SCIENCE.

By action of the Board of Trustees, in view of the gift to the University by ex-President Andrew D. White of his valuable historical library, the departments of History and Political Science have been named THE PRESIDENT WHITE SCHOOL OF HISTORY AND POLITICAL SCIENCE. The work of these departments is carried on by five professors, two assistant professors, an instructor, and an assistant.

A.—Ancient History.

For the present the University does not offer in Greek and Roman history a general narrative course open to all students. For those, however, who have already gained a general knowledge of this field, as well as for those who are willing to study the elements for themselves outside of the class room, there is provided an advanced course of lectures devoted to characteristic features and disputed questions, and intended as an introduction to the sources and the literature of

the subject. A course of this character on the history of Greece and Rome from the earliest times to the establishment of Roman supremacy throughout the Mediterranean (168 B. C.) will alternate with one on the history of the world under the dominion of Rome, from 168 B. C. to the beginnings of the Middle Ages. There is also a seminary in Greek and Roman History, intended to provide training in historical method by means of the critical study of original sources. These courses are designed primarily for mature students of history, political science, or classical philology, and are not open to underclassmen. Lectures on the life and antiquities of the Greeks and Romans are offered by the departments of Greek and Latin to all students who have reached the sophomore year; and freshmen as well are admitted by the professor of Semitic Languages and Literatures to his alternating courses on the history of the Oriental nations.

B.—*Mediæval and Modern European History.*

In mediæval history there is open to all students a course of three hours weekly on the history of Europe during the Middle Ages; and to those who have completed this course a similar one on the age of the Renaissance and the Reformation. For training in historical research in these fields, a practice-course familiarizes the student with the Latin of the mediæval chroniclers, then teaches him to read the manuscripts and interpret the documents of the Middle Ages; and a seminary meant less narrowly for students of pre-modern history, but open only to seniors and graduates, is devoted to historical method, examining first the scope, the materials, and the processes of history, and then addressing itself to the illustration of these by a critical study of some episode or period, in free use of the resources of the library. As further introduction to the mature study of history, a course of one hour weekly deals with the sciences auxiliary to history, giving especial attention to historical geography.

In English History a general course, intended for sophomores, covers the history of the nation, while an advanced course deals with English Constitutional History, with special reference to the growth of those institutions, legal and political, which have been perpetuated and developed in America.

In the general history of modern Europe, a course, intended primarily for juniors, covers from the beginning of the 17th century to the present time. Special periods will be dealt with in more advanced courses and in weekly seminaries devoted to training in research.

C.—American History.

In American History there are given, at present, two introductory courses. One deals with the pre-constitutional period, the other with the United States proper. It is intended to consolidate these, in 1903-04, into one general course, which shall afford a comprehensive survey of our national history, with practice in the use and criticism of the leading secondary authorities. This introductory work will be supplemented, from time to time, by special courses, on various periods or topics, involving the use of primary authorities, and intended for the training of more advanced students. Courses of that character are now offered in the Constitutional History of the United States to 1860, and in the non-military history of the Civil War and of Reconstruction. The work of the Seminary involves the study, by all its members, of some one general subject, upon various phases of which they are expected to report, at weekly meetings, the results of their investigations in the sources. In 1901-02 the topic thus treated was Internal Improvements at Federal Expense. At the earlier meetings of the Seminary, before its student members are ready to report, informal lectures will be given on methods of historical investigation and on the materials of American history. Guidance in the preparation of the theses required for advanced degrees is given as individual need may require.

D.—Political Economy and Politics.

The course in Political Institutions by a study of the nature of the state, and by a somewhat detailed comparison between the systems of leading foreign governments and that of the United States, with especial reference to the practical workings of these systems rather than to the mere letter of the constitutional law, aims to give the student a needed knowledge of these governments, possibly to suggest at times needed reforms in our own political practices and especially to develop habits of thinking in an unprejudiced way on political questions.

In the courses on the Principles of Politics and American Politics, the study is directed more to the fundamental principles of organic evolution, and to those forces, physical, psychological and social, which determine the formation and modification of society and of the state. In the course on American Politics these principles are illustrated by reference to American experience; but the intention is to conduct all courses in Politics so as to show the practical nature of those studies in connection with the duties of citizens and of those holding positions of trust in the government.

The course on Modern Questions in International Politics, besides helping to make clear the political relations of modern states, affords also present day illustrations of political principles in action. In 1902-03 this course will treat particularly of the methods employed by leading European nations in dealing with Oriental peoples. The differences of methods employed by different nations will be discussed, and the apparent results noted. Finally the treatment of its dependencies by the United States will be examined.

The collateral courses of the College of Law in International Law and General Jurisprudence give information of general interest and value to all thoughtful citizens.

Particular attention is called in the study of Political Economy, especially in the course in Economic Legislation, to the intimate relation existing between economic society and the state; the influence of economic conditions upon government on the one hand, on the other the powerful influence of the state as a factor in determining economic conditions. The study of present economic questions that are subjects of legislation and the comparative study of the laws of other states and countries serve both to throw light on the subject discussed and also to explain why laws on economic subjects seem often so imperfect as well as to show how complex is the nature of the task of the conscientious, trained legislator. It is hoped to make the student see that the study of economic principles is intimately connected with the tasks of every day life.

The large special collection of foreign statutes and the Moak Library of the Law Department afford special facilities for the study of comparative legislation and for the study of the historical development of politics and legislation.

E.—Political Economy and Statistics.

The course in Elementary Social Economics aims to show the significance for the student of economics and social life of the theories of evolution. Attention is centered upon the social group rather than upon the individual. The family, as the simplest and most important social group, is first studied in its historical development and its present organization and life. The study advances from this to the elementary study of more complex and ill defined social groups, such as races and the several classes of social dependents. Emphasis is laid upon the statistical method as an aid in the study of social groups and the measurement of social forces.

The course in the History of Economic Theories will be devoted to a detailed and critical analysis of certain masterpieces in economic

theory. The books to be studied in 1902-03 are Adam Smith's *Wealth of Nations* and John Stuart Mill's *Principles of Political Economy*. Particular attention will be given to the philosophical presuppositions of these writers and the connection between their economic speculation and their conclusions in other fields.

The course in *Elementary Statistics* is an introduction to statistics as a method of studying social groups and social life. Emphasis is laid upon the results reached by this method in the simplest fields where the chances for error in observation or interpretation are least. Special attention is given, therefore, to simple statistics of population and the elements of vital statistics. The methods of the United States Census Office will be presented in detail and a critical analysis made of the results of the twelfth census. The statistical laboratory is furnished with many of the electrical and mechanical devices to facilitate statistical work which are found in a modern statistical office. Two hours a week of laboratory work are required, in the course of which students gain some familiarity with present methods of statistical work.

The course in *Advanced Statistics* will be upon race questions and race relations in the United States. The important figures of the Twelfth Census elucidating the condition of American negroes will be given special attention, topics for research in this field will be assigned, and the results compared and criticised in class.

F.—Political Economy and Finance.

The general course in *Political Economy* is given three hours a week throughout the year, and should be taken by all purposing to pursue further studies in *Political Science*. For a few courses only it is not an absolute prerequisite. It would best be taken in the Sophomore year. The lectures which are given twice a week cover broadly both the theoretical and practical fields, while the section meetings in smaller groups afford opportunity for questions and discussion on the lectures and assigned reading.

In addition to the general course, there are represented courses on the history and description of economic institutions ; on the practical social questions connected with improved means of transportation ; on the work and administration of the benevolent institutions, public and private ; and on monetary, banking and fiscal problems. Studies are made in the monetary and financial history of the United States, in the history, data and principles of monetary legislation, and in the systems of taxation of this and foreign countries, with especial reference to the tax reforms that recently have been undertaken. In the

study of these concrete and practical subjects, the aim is to gain a clear understanding of the history and facts involved, a close acquaintance with the sources and materials available, and the habit and power of considering them in a fair-minded way. More importance is attached to the interpreting of studies in the light of the personal experience and knowledge of the student than to the acceptance of doctrines as final conclusions.

The Seminary has as its main object to give an opportunity for advanced students to carry on independent studies, with the advantage of mutual criticism, and of direction and supervision by the Seminary head.

Courses in History and Political Science.

Students intending to devote themselves especially to the study of History or Political Science are advised in the early years of their course to give as much as possible of their time to the study of languages. Latin, French, and German will be found indispensable in much of their later work.

A.—Ancient History.

Consultation hours Professor SILL, M., W., F., 2-30, Morrill 15. For Professor BENNETT, see under LATIN. For Professor SCHMIDT, see under SEMITIC LANGUAGES.

1a. **Greek and Roman History.** A survey of the history of the Mediterranean world from the beginning of Greek civilization to the dissolution of the Roman Empire in the West. Lectures, text-book, and examinations. Open to all students. M., W., F., 11, Morrill 11. Assistant Professor SILL.

2a. **Greek Life.** The land and the people. Home life and private antiquities. Public life and social institutions. A study of the private life of the Greeks, with illustrations (by lantern views, photographs, etc.) from ancient monuments and remains. T., Th., 10, White 6. Professor STERRETT. See Greek 9.

[2b. **Greek Literature.** Lectures. A history of the development of the poetical literature in connection with the political and social history of the people. T., Th., 10, White 6. Professor STERRETT.]

See Greek 10.

[2c. **Greek Literature.** A lecture course covering the history of the prose literature of the classical period, and of the post-classical literature in general. T., Th., 10, White 6. Professor STERRETT.]

[3. **Roman Antiquities.** First term and until Easter recess: A systematic consideration of the constitution of the Roman family, status of women, marriage, children, education, slavery, the Roman house and its furniture, food, dress, baths, games and amusements, books, trade, travel, religion, death, burial, etc. Lectures illustrated by lantern views, photographs, and material in the Museum of Casts. Easter recess until end of year: The Political and Legal Antiquities of the Romans. Lectures. W., F., 12, *Morrill* 3. Professor BENNETT. See Latin 27.]

4. **Studies in Greek History.** A discussion of selected and related topics, based on the sources and intended to afford training in historical method and an introduction to advanced work in this field. As far as practicable the seminary method will be followed. Open only to those who have had course 1 or its equivalent. Th., 4-6, *Greek and Latin Seminary Room*. Assistant Professor SILL.

8a. **Oriental History.** Syria, first half-year; Pre-Islamic Arabia and Ethiopia, second half-year. T., Th., 2, *Morse* 3. Professor SCHMIDT. See Semitics 8a.

[8b. **Oriental History.** The Spanish Caliphate, first half-year; Babylonia and Assyria, second half-year. Professor SCHMIDT.

See Semitics 8b.]

9. **Geography and Antiquities of the Semites.** F., 3, *White* 3B. Professor SCHMIDT. See Semitics 9.

B.—Mediæval and Modern European History.

Consultation hours Professor BURR, T., Th., Sat., 12, *Barnes Hall*; Professor CATTERALL, to be announced later.

10a. **Europe during the Middle Ages, 300-1300 A.D.** Lectures, discussions, and examinations. Open to all students. M., W., F., 9, *Barnes Hall*. Professor BURR.

10b. **Europe during the Renaissance and the Reformation, 1300-1600 A.D.** Lectures, discussions, and examinations. Open to those who have had course 10a or its equivalent. T., Th., S., 9, *Barnes Hall*. Professor BURR.

11. Courses 11a and 11b are meant especially for students of history who have taken course 10a or 10b and wish preparation for first-hand research in these fields. They presuppose some knowledge of Latin—as much, say, as is needed to read Caesar or Livy.

11a. **Mediæval Life.** The reading of some mediæval chronicler, with a view to acquaintance with mediæval life and facility in the reading of mediæval Latin. For the year 1902-1903 the chronicler is Paulus Diaconus. First half-year. T., 4-6, *European History Seminary Room*. Professor BURR.

11b. **Palæography and Diplomatics** the reading of historical manuscripts and the interpretation of historical documents, especially those of the Middle Ages). The course is one of actual study of the manuscripts and facsimiles in the University's possession. Second half-year. T., 4-6. *European History Seminary Room*. Professor BURR.

12a. **The Sciences auxiliary to History.** A glance at the aims, the methods, the literature, and the use to History of the more important auxiliary sciences—Anthropology, Ethnology, Archæology, Philology, Epigraphy, Palæography, Diplomatics, Sphragistics, Numismatics, Heraldry, Genealogy, Chronology, Geography. First half-year. Th., 4-5, *Barnes Hall*. Professor BURR. Open only to upperclassmen.

12b. **Historical Geography.** A fuller study of this most indispensable of the auxiliary sciences. Second half-year. Th., 4-5, *Barnes Hall*. Professor BURR. Open only to upperclassmen.

13. **Historical Method.** A seminary open only to seniors and graduates, and meant especially for those looking forward to the teaching of history or to historical research. *a.* History: its nature, its purpose, its materials, its methods. *b.* The critical study of some period, event, or phase of history. For the year 1902-1903 the topic will be: The Opponents of the Witch-Persecution. W., 4-6, *European History Seminary Room*. Professor BURR.

15. **English History.** Lectures on the national development and the European relations of England, Scotland, and Ireland, with textbook and examinations. M., W., F., 12, *Boardman Hall, Room A*. Assistant Professor SILL. Open only to sophomores and juniors.

[16. **Modern European History, 1600-1900.** Lectures with syllabus, reports and examinations. M., W., F., 11, *Morrill, 11*. Assistant Professor CATTERALL. Open only to those who have had courses 10a and 10b, or course 15. A reading knowledge of French or German is required. To be given in 1903-4 and annually thereafter.]

[17a. **History of Europe from 1740 to 1795,** with special reference to the history of Prussia, Russia and Austria. Lectures, discussions and examinations. T., Th., 11, *Morrill, 11*. Assistant Professor CATTERALL. Open, save by permission, only to those who have had or are having course 16 or its equivalent. To be given in 1903-4.]

[17b. **History of the French Revolution and the Napoleonic Era, 1789-1815.** Lectures, discussions and examinations. T., Th., 11, *Morrill, 11*. Assistant Professor CATTERALL. Open only to those who have had course 16. To be given in 1904-5.]

[17c. **History of Europe from 1815 to the present.** Lectures, discussions and examinations. T., Th., 11, *Morrill 11*. Assistant Professor CATTERALL. Open only to those who have had course 16. To be given in 1905-6.]

[18a. **The Constitutional History of England to 1603.** Lectures, study of constitutional documents, and examinations. T., Th., 12, *Morrill 11*. Assistant Professor CATTERALL. Open only to those who have had course 15. To be given in 1903-4.]

[18b. **The Constitutional History of England from 1603 to the present.** Lectures, study of constitutional documents, and examinations. T., Th., 12, *Morrill 11*. Assistant Professor CATTERALL. Open only to those who have had course 15. To be given in 1904-5.]

[19. **Seminary.** Open to graduates and, by permission, to qualified seniors. M., 4-6. *European History Seminary Room.*]

C.—American History.

Consultation hours: Professor Hull, Daily at 11 except Saturday, Morrill 4.

22. **American History from the Period of Discovery to the Adoption of the Constitution of the United States.** Lectures, reports, and text books. M., W., F., 10, *Morrill 11*. Professor HULL.

[23. **History of the United States (since 1787).** Professor HULL. Not given 1902-1903.]

25. **Constitutional History of the United States to 1861.** Lectures, assigned readings and essays. T., Th., 10. First half-year. *Morrill 11*. Professor HULL.

Open to graduates and such undergraduates as have had course 23 in American History or a university course in the history of England.

26. **Political and Constitutional History of the Civil War and of Reconstruction.** Lectures, reports, and text book. T., Th., 10. Second half-year. *Morrill 11*. Professor HULL.

Open to those only who have had course 25.

27. **American Constitutional Law.** McClain's Cases on Constitutional Law. W., 9. *Boardman B*. Professor POUND.

Baccalaureate Theses. Seniors who have taken courses 22 and 23 and whose essays give satisfactory evidence of their ability to do advanced work, may be permitted to write baccalaureate theses in this department. Such permission should be obtained before the end of

the junior year, and the thesis subject must be approved before October fifteenth of the senior year. Appropriate credit may be given for the completion of a satisfactory thesis.

28. **Seminary.** T., 4. *American History Seminary Room.* Professor HULL.

Open to graduates and, by permission, to qualified seniors.

D.—Political Economy and Politics.

Consultation hours: Professor Jenks, M., T., and W., 11:10 a.m. Political Science Seminary.

31. **Political Institutions.** Nature and historical development of political institutions. The government of the United States, studied with especial reference to its practical working. Comparative study of foreign governments and their relations to present political problems in the United States. Lectures, collateral reading, reports and discussions. M., T., W., 10, *Morrill 12.* Professor JENKS.

33. **Modern Questions in International Politics: Colonies and Dependencies.** A study of social and political conditions in certain colonies and dependencies, such as Egypt, India, Java, and French Indo-China, of which the experience will serve to throw light on conditions and problems in the insular possessions of the United States. The discussion will apply especially to the conditions and problems in those possessions. Lectures, with collateral reading and reports. M., W., 12. *Morrill 12.* Professor JENKS.

34. **Economic Legislation.** Study of current problems, mostly economic, from the standpoint of practical legislation. Comparative study of legislation in other states and countries, with preparation and discussion of legislative measures. Course 51, or its equivalent, is required for admission. In 1902-03 students electing this course are advised to take also course 33, as problems in the currency, taxation, import and export duties, immigrant labor, business franchises, etc., will be studied from both the legal and economic sides, with special reference to the situation in the insular possessions of the United States. M., W., 9. *Morrill 12.* Professor JENKS.

35. **Municipal Government in Europe and the United States.** Lectures and assigned reading on the governmental, financial, and social problems presented by the modern city. The latter part of the course will be devoted to an extended discussion of the policy of municipal ownership. Students will be required to investigate and report on municipal conditions in the localities with which they are most familiar. Second term, M., W., F., 9, *Morrill.* Mr. BROOKS.

International Law. (See course 36 in the College of Law.) T., Th., 11, *Boardman C.* Professor HUFFCUT.

[39. **American Politics.** An elementary course on the government of the United States. The formation and development of the leading political institutions, national, state, and local, and their methods of practical work : influences exerted by various physical, economic and social forces and institutions in shaping our government and its broader lines of policy ; the historical development of certain important American political ideas, such as federation, freedom of the individual, expansion. The study will be comparative, but the illustrations will be mainly from English and American history. The aim is to give an insight into the practical working of American politics, as well as to suggest ways of viewing historical and social questions in general. Open to all students. Professor JENKS.]

40. **Seminary. The Principles of Politics.** a. Study of the fundamental principles of politics as illustrated in the formation and modification of political societies.

b. An attempt to learn how far these principles can be practically applied in the study of certain important questions in the history of England and of the United States. Open only to graduates and by permission to specially prepared students. M., 4-6. First meeting September 29. *Political Science Seminary.*

E.—Political Economy and Statistics.

41. **Elementary Social Economics.** An introductory course upon the relation of evolutionary theories to the social sciences ; with applications to the study of the family, race relations, immigration, etc. T., Th., 9, *Morrill 12.* Professor WILLCOX.

42. **History of Economic Theories.** The reading and discussion of Adam Smith's *Wealth of Nations*, and John Stuart Mill's *Principles of Political Economy*, with especial reference to the other works of these writers. W., F., 8, *Morrill, 24,* Professor WILLCOX.

[44. **Economic and Commercial Geography.** Text book, reports and lectures. Two hours. Professor WILLCOX.]

48. **Elementary Statistics.** An introductory course in statistical methods with practical work in investigation and tabulation. Special attention is given to census statistics and vital statistics. T., Th., 8. Two laboratory hours a week will be arranged. Credit, two hours each term. *Morrill 24.* Professor WILLCOX.

49. **Advanced Statistics.** Open to those who have taken the *Elementary Statistics*, or can show that they are qualified to enter the class. Special investigations will be made in the statistics of races in the United States. Hours to be arranged. Credit, two hours each term. *Morrill, 24.* Professor WILLCOX.

F.—Political Economy and Finance.

Consultation hours: Professor Fetter, M., W., 12 m., and F., 8 a. m., Political Science Seminary

51. Elementary Political Economy. For those wishing a general survey of the field of economic thought, as well as a preparation for further studies in the department. During the last part of the year special attention is given to Transportation. Three hours a week throughout the year. Lectures twice a week, and discussions once a week, in smaller groups. Lectures, M., W., 11. *Library Lecture Hall.* Discussions in six sections: *Section 1, Th., 8, Morrill 12. Section 2, Th., 10, Morrill 12. Section 3, Th., 11, Morrill —. Section 4, F., 10, Morrill 12. Section 5, F., 11, Morrill 12. Section 6, M., 8, Morrill 11.* Professor FETTER and Mr. BROOKS.

52. Exercises in Descriptive Economics. Elementary practice in the use of the library sources of economic study to equip the beginner with essential facts and the ways to find them. All work is done under personal direction of the teachers in charge of the course. Advised as a preparation for course 51, or to accompany it. Students taking this may well elect also courses I and II in Bibliography. One hour's credit. At hours to be arranged in the afternoons. Professor FETTER and Mr. BROOKS.

[54. **Money, Credit and Banking.** A study of fundamental principles as illustrated in modern experience.]

55. Methods of Modern Philanthropy. To acquaint the student with the character and extent of charitable, correctional, and other allied social problems, and the methods employed in dealing with them. It is not technical, but is intended as an aid to enlightened citizenship. Lectures, with lantern slide illustrations, readings, discussions and seminary work at hours arranged. At least two days each semester must be spent in visiting institutions. Two hours throughout the year. T., Th., 11, *Morrill 12.* Professor FETTER.

57. The Economic History of England and the United States. The first part of the course will consist of a rapid survey of the economic development of England, one of the shorter texts on the subject being used. This will be followed by a series of lectures on the economic history of the United States. Students will be required to prepare reports on the local economic history of various parts of the United States. Designed especially for those who have completed Course 51 but may be taken as introductory to that course by students of sufficient historical training. First term, M., W., F., 9, *Morrill —.* Mr. BROOKS.

59. **Public Finance.** General fiscal policies of nations, sources of public income, principles of taxation, and financial history with especial reference to American experience. Lectures, with seminary work, mainly in problems of New York State, at appointed hours. Open to those who have had course 51 or an equivalent. T., Th., 12, *Morrill 12*. Professor FETTER.

60. **Seminary.** The central subject will be methods of investigation and the use of library sources, particularly for subjects in public finance and other practical questions. Theses will be presented and discussed, and reports made on current literature and industrial events. Open to graduates and a few other well equipped students. F., 9-11, *Political Science Seminary*. Professor FETTER.

BIBLIOGRAPHY.

1. **Introductory Course to the use of the Library**, including classification and arrangement of materials, principles of cataloguing, making bibliographies and preparation of materials for printing. First half-year. M., 4 p.m. Open to all students. Assistant Librarian AUSTEN.

2. **General Bibliography.** The materials and form of books in ancient times ; books in the middle ages, block books, early printed books, illustrated by examples of manuscripts and incunabula ; book-illustration, book-bindings ; form-notation ; systems of classification and cataloguing ; general bibliographical aids. Second half-year. Lectures. T., 12. Mr. HARRIS.

MATHEMATICS AND ASTRONOMY.

Pure Mathematics.

The work in mathematics prescribed for students in ENGINEERING and ARCHITECTURE, in general, takes one year. It presupposes a good knowledge of plane and solid geometry, of elementary and advanced algebra, and of plane and spherical trigonometry ; and it consists of elementary courses in analytic geometry and the calculus.

For students in ARTS, all work in mathematics is elective, and this work may be roughly divided into elementary courses and advanced courses.

The elementary courses are in solid geometry, elementary and advanced algebra, plane and spherical trigonometry, analytic geometry including conic sections, differential and integral calculus, and differential equations. These courses may all be taken by a good student, well qualified, during his freshman and sophomore years. They serve

as a sufficient preparation for the ordinary work in physics and physical chemistry, and they mark the minimum of attainments that a teacher of mathematics in a high school or academy ought to possess.

The advanced courses are for juniors, seniors, and graduates. Together they would take one's entire time for four or five years; they give a general survey of the field of mathematical science, and serve as an introduction to any special field one might wish to cultivate.

The sequence and interdependence of these courses, and the order in which they may best be taken up, are shown in the detailed statement of the courses themselves. In their topical relations they fall into three groups which may be entitled :

1. The theory of discontinuous (discrete) operations.
2. The theory of continuous (differential) operations.
3. The theory of functions.

In the first group may be placed higher algebra, analytic and projective geometry, higher plane curves, the geometry of three dimensions including Plücker's line geometry; the theory of numbers, substitution groups, quantics including the modern algebraic theories of elimination, canonical forms and their invariants; quaternions and vector analysis; and non-Euclidian geometry.

In the second group are included the calculus, differential equations, differential geometry, finite differences, Fourier's series and spherical harmonics, and probabilities with applications to insurance and to the theory of errors.

In the third group are included the general theory of functions, with the special theories of elliptic, hyperelliptic, Abelian, and automorphic functions.

Astronomy and Celestial Mechanics.

The course in descriptive and physical astronomy considers the phenomena of the heavenly bodies and their probable conditions and histories. The work in celestial mechanics deals mainly with the figures of the planets, the tides, the elliptic motion, and perturbations.

Practical astronomy is taught by the College of Civil Engineering.

Mathematical Physics.

The subjects offered in this connection fall into two main groups.

In the first group are the calculus, differential equations, probabilities and the theory of errors, vector analysis, and function-theory. These have already been mentioned under pure mathematics; but

they are necessary, as introductions to most of the subjects in the second group, and they are important in themselves to the student of physics, much of whose work without their aid would be too purely empirical, no less than to the student of pure mathematics, whose outlook is enlarged by the physical concepts and interpretations involved. Most of the courses in this group are open to any good student who has had the elementary courses named above.

The second group consists of (1), two general introductory courses, one in theoretical mechanics with special reference to the dynamical principles needed for the subsequent work, and the other in Fourier's series and spherical harmonics, in which various typical physical problems are treated, the appropriate differential equations being derived from physical laws, and the most important solutions of these equations discussed; (2), the mathematical theories of definite branches of physics, such as sound, including the general vibrating system, with Rayleigh's treatise as the basis; hydrodynamics, including mechanics of the atmosphere and vortex-motion; electricity and magnetism; theories that have all been extensively developed by aid of the higher analysis.

Courses in light and thermodynamics are given by the Department of Physics, and courses in electricity and magnetism less mathematical in character than course 46.

The Mathematical Club, Theses, and the Library.

The Oliver Mathematical Club, composed of teachers and advanced students, has for its objects: the systematic presentation by the members, in turn, of some specified mathematical theory of recent development; and the hearing of reports from different members on noteworthy articles in current journals, and on the results of special reading and investigation. During the academic year 1902-1903 the club will meet every other week.

In addition to the courses of instruction definitely announced, special reading in pure and applied mathematics is assigned to advanced students desiring it; provision is made for the writing and criticism of mathematical theses, and students are encouraged to follow up special inquiries by aid of the University Library, which now contains several thousand volumes on pure mathematics, mathematical physics, and astronomy, including many of the principal mathematical journals, and transactions of scientific societies.

Mathematical Models.

The collection of models, about three hundred in number, includes:

1. Plaster models of the quadric and cubic surfaces, of several forms

of the Kummer surface, of the cyclides, of surfaces of centres of quadrics, and of minimum surfaces.

2. Plaster models illustrating positive, negative, and parabolic curvature, and constant measure of curvature.

3. Plaster models illustrating the theory of functions : among them models of simply and multiply connected surfaces and of several forms of Riemann's surfaces, and models representing the real parts of algebraic, exponential, logarithmic, and elliptic functions.

4. Wooden and glass models of crystals and polyhedra.

5. Wire and thread models of twisted curves and ruled surfaces, and skeleton frames for minimum surfaces.

The following schedule of hours is made out as nearly as possible, for the coming year ; but necessary changes will be made at any time.

I. Elementary Courses Prescribed for Students in Engineering and Architecture, and open to Election by Students in Arts.

2. For Freshmen in Engineering and Architecture.

Eleven sections, daily, ex. Sat.

At 8, *White 22*, Professor WAIT ; *White 24*, Dr. HUTCHINSON ; *White 17*, Dr. FITE.

At 10, *White 22*, Professor WAIT ; *White 18 A*, Assistant Professor TANNER ; *White 17*, Dr. SNYDER ; *White 21*, Dr. STECKER ; *White 24*, Dr. YOUNG.

At 11, *White 18*, Assistant Professor MCMAHON ; *White 18 A*, Assistant Professor TANNER ; *White 24*, Dr. HUTCHINSON ; *White 17*, Dr. FITE ; *White 21*, Dr. STECKER.

(a) Analytic Geometry. Credit, 4 hours first term.

(b) Differential Calculus. Credit, 1 hour first term, 2 hours second term.

(c) Integral Calculus. Credit, 3 hours second term.

4. For Freshmen in Engineering and Architecture.

Daily ex. Sat., after the Christmas recess, *White 17*, Assistant Professor MCMAHON ; *White 21*, Dr. SNYDER.

(b) Analytic Geometry. Credit, 2 hours each term.

(c) Differential Calculus. Credit, 3 hours second term.

II. Elementary Courses open to Freshmen and Sophomores in Arts.

6. For Freshmen who enter the University on the minor requirements in mathematics (plane geometry and elementary algebra). This course is substantially equivalent to the major entrance require-

ments in mathematics, and it is sufficient for elementary work in physics. Two sections: M., W., F., at 8, *White 21*, Professor JONES; M., W., F., at 12, *White 18 A*, Assistant Professor TANNER.

(a) Solid Geometry. Credit, 2 hours first term.

(b) Advanced Algebra. Credit, 1 hour each term.

(c) Plane Trigonometry, with field work in surveying. Credit, 2 hours second term.

7. For Freshmen who enter on the major requirements (solid geometry, advanced algebra, and plane and spherical trigonometry). Supplementary to those requirements and necessary to further elective work in mathematics. T., Th., at 8, *White 21*, Professor JONES.

(a) Solid Geometry. Credit, 1 hour first term.

(b) Advanced Algebra. Credit, 1 hour first term.

(c) Spherical Trigonometry, with field work in surveying. Credit, 2 hours second term.

8. For Freshmen who enter on the minor requirements. Equivalent to courses 6 and 7 combined. Daily, ex. Sat., at 9. *White 21*. Professor JONES.

(a) Solid Geometry. Credit, 3 hours first term.

(b) Advanced Algebra. Credit, 2 hours first term, 1 hour second.

(c) Plane and Spherical Trigonometry, with field work in surveying. Credit, 4 hours second term.

9. **Problems in Geometry, Algebra, and Trigonometry.** Supplementary to courses 7 and 8, and may be taken at the same time with either of those courses. This course is for the benefit of those students, particularly freshmen, who, being interested in mathematical studies, wish to lay a good foundation for the higher work that follows. Credit, for Geometry, 1 hour first term; for Algebra, 1 hour first term; for Trigonometry, 2 hours second term. S., 8-10, *White 21*. Professor JONES.

10. **Analytic Geometry and Calculus.** For Sophomores who have had courses 7 or 8, but may be taken by Freshmen who are well qualified, at the same time with course 7. M., W., F., at 8. *White 18*, Assistant Professor MCMAHON.

(a) Analytic Geometry, credit, 2 hours first term.

(b) Differential Calculus, credit, 1 hour each term.

(c) Integral Calculus, credit, 2 hours second term.

11. **Differential Equations.** An elementary course arranged for students in engineering and in physics, and for those who intend to study advanced mathematics. The course is devoted mainly to the solution of the simpler ordinary and partial differential equations. An elementary knowledge of the integral calculus is a prerequisite for entrance to this course. Two hours. Dr. HUTCHINSON.

III. Advanced Courses open to Juniors, Seniors, and Graduates.

For these courses, hours will be arranged to suit the members of the classes. In some cases the courses stated as necessary in a given course may be taken at the same time with it. A course may not be given if not more than two persons call for it.

12. Higher Algebra and Trigonometry. A continuation of courses 7 and 8. It covers continued fractions, limits and derivatives imaginaries, series, theory of equations, application of imaginaries and exponentials to circular and hyperbolic trigonometry, and determinants. Necessary for most of the courses that follow. T., Th., S., at 10. *White 14*, Professor JONES.

13. Projective Geometry. Requires courses 7 or 8, and some knowledge of Analytic Geometry; necessary to courses 19, 20, 23, 33, and very useful in courses 15, 20, 41, 43, and in certain problems in mathematical drawing. T., Th., S., at 8. *White 18*, Dr. SNYDER.

The principal aim of the course is to familiarize the student with reasoning about geometric forms. No use is made of algebraic methods. The usual topics of elementary synthetic geometry are first learned, then the principles thus acquired are applied to the study of cubic curves, of cyclical collineations, and of the basis of metric geometry. Considerable attention is given to drawing.

14. Theory of Probabilities and Least Squares, with some applications to insurance and the theory of errors. Requires courses 2 or 10. Two hours. Professor JONES.

15. Advanced Work in Analytic Geometry. Requires courses 2 or 10, 12 and preferably 13. Necessary in most of the courses that follow. Professor WAIT.

Lines of the first and second orders. Two hours. Surfaces of the first and second orders. One hour.

[**16. Reading Course in German.** Requires courses 2 or 10, and 12. It is the purpose of this course to familiarize the student with mathematical German, and at the same time to critically examine some important points in the elementary mathematics. The reading will begin with Weber's Algebra, Vol. I. Two hours. Assistant Professor TANNER.]

17. Advanced Work in Calculus. Requires courses 2 or 10, and 12. Necessary to all the courses that follow.

(a) Differential Calculus. Two hours. Differential Equations. One hour. Professor WAIT.

(b) Integral Calculus. This course is given by lectures accompanied by mimeograph notes, frequent illustrative problems being as-

signed to the class as exercises. A short drill on the integration of various forms is followed by a full discussion of the conditions and criteria for integrability of any given function. Definite integrals, and methods for their evaluation. Various functions defined by definite integrals such, as the gamma function. Curvilinear and multiple integrals. Two hours. Dr. HUTCHINSON.

[18. **Introduction to the Theory of Groups.** The principal properties of substitution groups and abstract groups are presented. Some account is given of Frobenius' theory of group characteristics and of the application of the theory of substitution groups to the theory of algebraic equations. Three hours. Dr. FITE.]

19. **General Theory of Algebraic Curves and Surfaces.** Requires courses 12, 13, 15, 17. Necessary to course 33, and preferably to many of the courses that follow. Dr. SNYDER.

[(a) **Algebraic Curves.** The principal subjects treated are conditions which determine a curve, Plücker's numbers, envelopes, birational transformation, resolution of singularities, and forms of curves of the third and fourth order. Three hours.]

(b) **Theory of Surfaces.** Requires courses 13, 15, 17, 19a, 21. Begins with a short review of analytic geometry of three dimensions, including systems of coördinates and a few transformations. Then follows the derivation of the principal differential formulae of the theory of surfaces. Lines traced on surfaces are treated, giving especial attention to asymptotic lines and lines of curvature, with an introduction to Lie's geometry of the sphere and its group of transformations. The course deals largely with the derivation of differential equations and the study of infinitesimal deformations, but synthetic proofs are employed whenever they simplify the problems. Three hours.

20. (a) **Algebraic Invariants.** Requires courses 12, 15, and 17; and preferably courses 11 and 13. This course is given chiefly by lecture. The general linear transformation is applied, first to a single binary quantic, and later to a system of simultaneous quantics in n variables; and the necessary and sufficient conditions for invariants, covariants, etc., are investigated. Simultaneous invariants are shown to include covariants as a special case, and such invariants are represented as functions of the coefficients, of the roots, and also in the symbolic notation. Hilbert's proof of Gordan's theorem on the finiteness of the number of irreducible invariants is given, both for the binary quantic, and also for any number of quantics in n variables. Much of Elliott's Algebra of Quantics is read by the class in connection with the lectures, and some attention is paid to the geometric side of the subject. Two hours. Assistant Professor TANNER.

20 (*b*) **Higher Algebra.** Instead of course 20 (*a*) there may be given in 1902-1903 a course in Higher Algebra—a continuation of course 12. This course would include symmetric functions, general theory of elimination, linear transformations, elements of invariants and covariants, etc. Two hours. Assistant Professor TANNER.

21. **Ordinary Differential Equations.** Advanced course. Requires courses 2 or 10, 11, 12, 25 (*a*).

[(*a*) General theory of the linear differential equation, with an introduction to the functions defined by such equations. Lectures, with references to the works of Heffter, Schlesinger, and Klein, and to part III of Forsyth's theory of Differential Equations. Two hours. Dr. STECKER.]

(*b*) Ordinary differential equations, non-linear. Lectures, based upon Painlevé's *Theorie analytique des equations differentielles*, and Part II of Forsyth's theory of differential equations. Two hours. Dr. STECKER.

[22. **Non-Euclidean Geometry.** Requires courses 2 or 10, 11, 12, 13, 15, and preferably 19. Begins with some consideration of the foundation of Geometry, followed by the projective theory of non-Euclidean Geometry as developed by Klein, with applications to the theory of functions, the theory of numbers, etc.; also portions of Lie's treatment of the Riemann-Helmholtz problem. Two hours. Dr. STECKER.]

23. (*a*) **Continuous Groups.** Lie's *Continuierliche Gruppen* will be followed. Requires courses 11 and 17. Three hours, first half-year. Dr. FITE.

(*b*) **Linear Groups.** A discussion of the theory of linear homogeneous groups. Requires course 29. Three hours, second half-year, Dr. FITE.

24. **Calculus of Variations.** Requires courses 2 or 10, 11, and 17 (*b*). Consideration of the general theory as developed by Weierstrass, Hilbert, and Kneser, with applications to classic problems. One hour. Dr. STECKER.

25. **Theory of Functions.** Requires courses 11, 12, and 17.

(*a*) Theories of Cauchy, Weierstrass, and Riemann, including infinite series and integration, conformal representation, algebraic functions and their integrals, etc. Rigour in the treatment of fundamental principles and methods is emphasized. Three hours. Dr. Stecker.

[(*b*) Second year. Elliptic, Automorphic, and Abelian Functions. The fundamental properties of the doubly periodic functions, and functions which remain unaltered by an infinite discontinuous group of linear transformations. In particular, Klein's theory of the ellip-

tic modular functions, and Poincaré's theory of fuchsian functions. The abelian integrals, and the theta functions of p variables. Periodic functions in general. Three hours. Dr. HUTCHINSON.]

29. **Theory of Numbers.** Includes a discussion of congruences, quadratic residues, quadratic forms, and algebraic numbers. Requires course 12 and preferably course 20. Two hours. Dr. FITE.

30. **Quaternions and Vector Analysis.** Requires courses 12, 17, and something of mechanics. Two hours. Assistant Professor MCMAHON.

[33. **Line Geometry.** Requires courses 13, 15, 17, 19a, 20, 21. Line coördinates, systems of linear complexes, and cubic scrolls; infinitesimal geometry, normal correlation, surfaces of singularities, focal surfaces, asymptotic lines, developable surfaces; transformation of coördinates, Klein's fundamental complexes, the quadratic complex, and the Kummer surface. Two hours. Dr. SNYDER.

Astronomy and Mathematical Physics.

40. **Descriptive and Theoretical Astronomy.** Mr. ———.

(a) Descriptive Astronomy. Two hours.

(b) Physical and Mathematical Astronomy. Requires course 2 or 10, and courses 1 or 2 of Physics. Two hours.

41. **Theoretical Mechanics.** Includes kinematics, statics, and kinetics with special reference to the dynamical principles needed for subsequent work. Requires courses 11 (or preferably 21), 12, 15, 17. Necessary to most of the courses that follow. Two hours. Assistant Professor MCMAHON.

42. **Potential Function, Fourier's Series, and Spherical Harmonics** with applications to physical problems. Introductory to mathematical physics. Requires courses 17, 21, 41. Useful in all of the courses that follow. Two hours. Assistant Professor MCMAHON.

[43. **Celestial Mechanics.** Requires courses 12, 17, 21, 40, 41, and preferably 42. Two hours].

44. **Mathematical Theory of Sound;** including the general theory of vibrating systems. Based on Rayleigh's treatise. Requires courses 12, 17, 21, 41, 42, and preferably 15, 20, 25(a). Two hours. Assistant Professor MCMAHON.

(a) First year. General theory with applications to strings, bars, membranes, and plates.

(b) Second year. Aerial vibrations.

45. **Mathematical Theory of Fluid Motion,** including the mechanics of the atmosphere and vortex motion. Allied to course 44, and has the same prerequisites. Reading course.

46. **Mathematical Theory of Electricity and Magnetism.** Requires courses 12, 17, 21, 42, and preferably 15, 20, and 25(a). Reading course.

47. **Mathematical Theory of Thermodynamics.** Requires only a knowledge of calculus. Two hours. Professor TREVOR.

Other courses in Mathematical Physics are given by the Department of Physics.

PHYSICS.

Lecture Courses In Elementary Physics.—The instruction in the elements of physics is by means of lectures given twice a week throughout the year. In these lectures the general laws of mechanics and heat, electricity and magnetism, and acoustics and optics, are presented. The very large collection of lecture room apparatus possessed by the department make it possible to give experimental demonstrations of all important phenomena. The course of lectures is supplemented by recitations, for which purpose the class is divided into sections of about twenty members each.

Four courses are given, which vary in extent from two to five exercises a week. The ground covered in these courses is essentially the same, but the methods of treatment differ, being adapted in each case to the needs and previous training of the class of students for which the course is designed. The successful completion of the freshman mathematics, except as noted elsewhere, is in all cases requisite for admission to these courses.

Courses of Laboratory Instruction.—The first year of laboratory work is devoted to the experimental verification of physical formulæ, to practice in the use of instruments of precision and to the attainment of some knowledge of the simpler methods of physical manipulation. Students who have completed the first year's work make a more extended study of various physical constants. They learn the use of standard instruments, and become acquainted with the methods employed in research. For students of engineering complete courses in photometry, in the calibration of instruments and in the study and testing of direct, alternating and polyphase current machinery are arranged. The opportunities afforded for advanced work in electricity are unusual.

Every encouragement is offered to advanced students for the carrying on of original investigations, and every opportunity is taken to stimulate a spirit of scientific inquiry. Courses of reading are suggested to such students, in connection with their experimental work; and they are brought together in seminary at frequent intervals for the discussion of topics of scientific interest. Several courses in

mathematical physics are given for the benefit of such students. It is the aim of the department to furnish every possible facility for research.

The Laboratory of Physics.—Franklin Hall is devoted exclusively to the use of the department of Physics. It is of red sandstone, and is three stories in height above a well lighted basement. The building contains, in addition to the amply equipped laboratories of the department, a lecture room, seating about two hundred students, and four recitation rooms for the use of classes. Piers are provided in several of the rooms for apparatus requiring immovable support, and some of the rooms in the basement and in the annex have solid floors of cement, upon any part of which galvanometers, etc., may be used. The arrangements for experimental work are most complete. Gas, water, steam, oxygen, hydrogen, acetylene, compressed air, blast and vacuum cocks are within easy reach, and dynamo and battery currents are available. Liquid air, whenever needed for lecture or laboratory work, is manufactured by means of machinery installed for that purpose in the basement of the building. A masonry pier, four by twelve feet, permits the use in the lecture room of apparatus that could otherwise only be used in the laboratory. A small turbine on the lecture-table furnishes power for a variety of experiments. Lanterns with the lime or electric light are always in readiness for use when they can in any way aid a demonstration. Adjacent to the lecture room are three large apparatus rooms.

The laboratory rooms in the lower portions of the main building are devoted to advanced work, those on the upper floors of the west end to elementary practice. On the fourth floor is a suite of rooms arranged for the study of photography, with special reference to its application to physical investigation. Work in applied electricity is carried on chiefly in the basement laboratories, in the annex, and in the dynamo rooms of the department.

The equipment of the Department of Physics comprises many fine instruments of precision. A very valuable adjunct is a well equipped workshop connected with the department, where a skillful mechanic is constantly employed in making apparatus. Some of the most valuable instruments in the collection have been made in this shop. A further statement of equipment available for the use of the department will be found under the heading *laboratories of electrical engineering*.

The following courses are offered in 1902-1903.

Undergraduate Courses.

1. **Mechanics and Heat, Electricity and Magnetism. Acoustics and Optics.** Four hours a week. Two lectures a week. M., W., or T., Th., 12. Professors NICHOLS and MERRITT. Two recitations by the class in sections, at hours to be arranged. Messrs. SHEARER, BLAKER, STEWART, GAEHR, ALLEN, MCALLISTER, MANNING and ———.

Course 1 is intended to meet the needs of students in Civil Engineering, Electrical Engineering, Mechanical Engineering, and of such others as have the requisite mathematical preparation. An elementary knowledge of the calculus is required.

2. **Elective Course in Experimental Physics.** This course is divided into the two following parts, 2a and 2b, which may be taken together or separately as specified below.

2a. *Short Course in Experimental Physics.* Two hours, lectures. M., W., or T., Th., 12. Professor NICHOLS.

Course 2a is offered for the benefit of students who do not intend to pursue the subject further nor to devote especial attention to the sciences of Mathematics, Chemistry or Geology, but who desire to acquire some knowledge of the simpler phenomena of Physics. It is accepted as the required work of the courses in Agriculture and Forestry, but students in these courses are urged, whenever practicable, to take 2b also. Course 2a is open to freshmen, but it will not be accepted in place of the required course for students of Medicine (see course 7). Students in the Academic Department who expect to study Medicine should take courses 7 and 2b.

The completion of 2a does not qualify the student to enter course 3 or any subsequent course in Physics with the exception of 2b and course 9.

2b. *Longer Course in Experimental Physics.* Three hours; one recitation a week and two afternoons in the laboratory, Mr. HOTCHKISS. Course 2b is open only to those who are taking 2a or have completed that course or its equivalent and who have a knowledge of plane trigonometry. It should be taken in connection with 2a by all who wish to prepare for any of the more advanced courses in Physics, or who intend to study Mathematics, Chemistry, Geology, Medicine, or the Biological Sciences. Students of whom course 1 is required may substitute course 2 by registering for 5 hours. Freshmen who have presented advanced mathematics for entrance may elect course 2.

Examinations for those unavoidably absent from either term examinations in courses 1, 2a or 2b, or who have conditions to make up in any of the above courses, will be held on registration day, Sept. 26,

at 2:00 p.m., and in May. No special examinations at other times will be given.

3. Physical Experiments. Theory and methods of physical measurements. Two to six hours. The laboratory will be open M., T., W., Th., F., 2 to 5; and S., 8 to 12. Messrs. BLAKER, STEWART, ALLEN, MANNING, and ———.

Course 3 includes laboratory experiments illustrating general laws in all branches of Physics, and instruction in the adjustment and use of the instruments of precision employed in mechanics, heat, light, and electricity. It is open to students who have passed satisfactorily in courses 1 or 2. All students desiring this course are strongly advised to prepare themselves by first taking courses in analytical geometry and calculus. Each student devotes to the course two afternoons or more each week, according to the amount of credit desired, and pursues it in such order as the appointments of the laboratory may require. Students in Mechanical Engineering and Electrical Engineering are required to take the equivalent of two hours a week only.

4. Electrical Measurements. Tests of electrical instruments and determination of constants. Theory and experimental study of dynamo machines, including tests of efficiency. Alternating and poly-phase currents. [For special work in alternating current testing, see course 24]. Photometric and electrical tests of electric lamps. two to four hours laboratory work. Daily. Assistant Professors MOLER and BEDELL and Messrs. MCALLISTER and GAEHR.

Course 4 is open to all students who have completed course 3. Taken together with course 8, it forms part of the prescribed work of the senior year in Electrical Engineering.

6. Advanced Laboratory Practice in general Physics for undergraduates who have completed course 3. This course is preparatory to graduate course 18. It is intended to meet the wants of those who expect to teach experimental physics, and may occupy from three to six hours per week. Professor NICHOLS, Assistant Professor MERRITT and Mr. SHEARER.

Students in course 6 are expected to devote at least a term to a single problem, studying the literature of the subject exhaustively and performing the experimental work with all the care and thoroughness of an original research.

7. Required Course in Elementary Physics for students in Medicine. Two hours, M., W., 9; (lectures and experimental demonstrations). Mr. SHEARER.

In this course special attention will be given to those portions of the science which are of direct importance to medical students. The

theory and construction of the balance ; the phenomena of diffusion and osmosis ; thermometry ; the theory and operation of voltaic cells, induction coils, electro-static machines and x-ray apparatus ; the theory and use of the microscope, spectroscope, polariscope, etc. ; the physics of vision and audition and other topics essential to modern medical practice will be more fully treated than is customary in elementary courses in general physics.

8a. **Applied Physics for Engineers.** First half-year : Photometry and Physics of Artificial Lighting. Second half-year : The Measurement of Current, Electromotive Force and Resistance. One hour. Lectures. F., 12. Professor NICHOLS.

8b. [**Applied Physics for Engineers.** First half-year ; Primary and Secondary Batteries, Standard Cells and Voltameters. Second half-year : The Electric Transmission of Intelligence. One hour. Lectures. F., 12. Professor NICHOLS.]

9. **Practical Photography.** Two hours. Lectures and laboratory practice. Second term. Assistant Professor MOLER.

The lectures of this course will begin on the first Monday after registration day and will be continued for ten weeks. Laboratory practice (at hours to be arranged) will begin immediately after Easter recess.

Course 9 is open only to students who have the requisite knowledge of chemistry and physics. The requisite knowledge of these subjects is in general that possessed by those who have completed Chemistry Course 1 and one term of Physics, 1, 2a or 2. Freshmen are therefore not eligible to elect this course.

Courses for Graduate Students.

[11a. **Theoretical Physics.** Mechanics and Thermodynamics. Assistant Professor MERRITT. Three hours lectures and one hour seminary throughout the year.]

11b. **Theoretical Physics.** Electricity and Magnetism. Assistant Professor MERRITT. Three hours lectures and one hour seminary throughout the year.

Courses 11a and 11b, together with courses 14a and 14b, are intended to give an outline of theoretical physics for students who expect to specialize in this subject.

12. **Recent Advances in Experimental Physics.** Assistant Professor MERRITT. One lecture a week. F., 9 or 10. This course will be devoted to such of the more important developments in physics as have not yet found their way into the text books. The lectures will be illustrated by experiments whenever the nature of the subjects permit.

In 1902-3 about half of the time of this course will be devoted to the subject of Electrical Oscillations and Electrical Waves.

13. **Electricity and Magnetism.** Assistant Professor MERRITT. Lectures and Seminary. For advanced students who have completed course 11b or its equivalent. This course is capable of modification to suit the needs of those electing it. Some treatise such as Boltzman, Maxwell, or J. J. Thomson will be used as a basis.

[14a. **Theory of Light.** Four hours. Mr. SHEARER. Three recitations a week based on Drude's Theory of Light. One experimental lecture a week by members of the class under the direction of the instructor.]

14b. **Theory of Heat.** Four hours. Mr. SHEARER. Three lectures a week on the Kinetic theory of Gases and Thermodynamics. One experimental lecture a week by members of the class under the direction of the instructor.

15. **Wave Motion.** Two hours. Lectures on the theory of wave motion in optics, electricity, etc., with problems suited to the requirements of the class. Mr. SHEARER,

16. **Advanced Photography,** with special reference to its application to research. Two hours. First term until Christmas recess. Assistant Professor MOLER.

Students who have completed courses 1, 3, and 9, or an equivalent, will be admitted to this class.

17. **Physical Seminary.** Two hours. Critical reading of original memoirs relating to physics; followed in the latter part of the year by reports upon original work done in the department. Tuesday evenings, 7:30 to 9:00. Professor NICHOLS.

Course 17 is a colloquium in which all members of the teaching staff of the department, as well as graduate students of physics take an active part.

18. **Advanced laboratory practice in general physics** preparatory to research. This course is open to undergraduates who have completed courses 3 and 6 or 3 and 4; also to graduates who have had the above courses or their equivalent. The amount of time to be given and hours of attendance will be arranged to suit each individual case. Professor NICHOLS and Assistant Professor MERRITT.

22. **Theory of Alternating Currents;** inductive circuits, condensers and transformers. First half-year. Two hours. Assistant Professor BEDELL.

Particular attention will be given to graphical methods and the development of the elements of the subject.

23. **Magnetism and Electricity.** Second half-year. Two hours. Special reading and seminary work for those who have completed course 22. Assistant Professor BEDELL.

By special arrangement this course may be taken during both terms.

24. **Alternating Current Measurement:** testing of transformers, rotaries, and induction motors for single phase, two phase, and three phase circuits, and the transmission and transformation of poly-phase currents. Course 24 should be taken by students who expect to prepare experimental theses upon the above subjects. Two hours throughout the year. M., 2-5. Requirements the same as for course 4, and also the taking of course 22. Assistant Professor BEDELL.

By permission, course 24 may be substituted for equivalent hours in course 4.

CHEMISTRY.

Inorganic Chemistry. The elements of inorganic chemistry are taught by lectures, laboratory work and recitations from a text-book. Careful attention is given to the writing of chemical equations and to the solution of chemical problems. Experiments illustrating the principles discussed in the text-book are performed in the laboratory by each student.

Advanced courses of lectures in inorganic chemistry, both with and without laboratory practice, are offered for advanced students. These courses are also open to all who have completed certain preliminary work. In one of these lecture courses the history of chemistry is considered in detail. The other deals with the study of the properties of all the elements and is based upon the periodic law of Mendeleeff. The laboratory work in advanced inorganic chemistry comprises the preparation and purification of inorganic compounds and the extraction of the rarer elements from ores and minerals. The facilities for investigation in this field are very complete, and the student is afforded opportunity for research not merely in the usual inorganic lines, but also in advanced spectroscopic chemical analysis, gas analysis and electro-chemical methods, this last including synthetic work with the electric furnace.

The seminary in inorganic chemistry is for those advanced students who are working in that field. Each member of the seminary reports upon articles appearing in the current numbers of the chemical journals and upon special topics that are assigned to him from time to time.

Qualitative and Quantitative Analysis. Five beginning courses are given in chemical analysis. These vary in scope and length and are designed to meet the different needs of the students of chemistry, medicine, and engineering.

The qualitative analysis begins with the study of those reactions of the elements and their compounds which are used in their detection. This is followed by the practical application of the knowledge thus gained to the analysis of unknown substances, both in the solid form and in solution.

The quantitative work is taken up after the completion of the qualitative course, and comprises a small number of simple gravimetric and volumetric determinations, together with the study of the chemistry of the operations involved. This work in the laboratory is supplemented by lectures and recitations, the latter including practice in writing chemical equations explanatory of the actual operations of the analytical work.

Advanced Quantitative Analysis. For students intending to devote themselves chiefly to the study of chemistry there are provided advanced courses in quantitative analysis, especially designed to give them as wide an acquaintance as possible with analytical manipulation. These courses comprise the determination of the more important elements; the analysis of ores, minerals and alloys; the ultimate analysis of organic substances; agricultural analysis; the chemical and microscopic examination of foods and beverages; the analysis of water; the analysis of iron ores, iron and steel, slags, paints and varnishes, alloys, coal and coke, and a number of other commercial products.

Special Courses in Chemical Analysis. These comprise courses in gas analysis, spectroscopic chemical analysis, microchemical analysis and assaying. Each line of work is given in a laboratory especially designed for its accommodation and completely fitted with all necessary instruments and apparatus, and is accompanied by a course of lectures introductory to and explanatory of the laboratory work.

In microchemical analysis there is first offered an elementary course serving as an introduction to the use of the microscope and its accessories in chemical analysis, special attention being paid to the chemical elements most frequently met with in commercial work and to the examination of metals and alloys. A special laboratory has been equipped for this branch of chemical investigation. It is provided with work tables and with polarizing microscopes of special construction, photomicrographic apparatus, centrifuge, etc. The apparatus and reagents provided are such as to permit of the investigation and analysis of organic as well as inorganic compounds, including food and food products, fibres, textiles, paper, etc. Those who have completed the regular course are afforded opportunity for continuing work along special lines.

Agricultural Chemistry. A course of lectures on this subject, extending through the year, treats of the chemistry of the plant and its growth, of the atmosphere, soil, fertilizers, the feeding of farm crops and animals, and the composition and utilization of the products of the farm. An advanced course, partaking also in part of the nature of a seminary, is offered on current topics in the journals, and a very elementary series of lectures is given for the winter course students. The lectures are freely illustrated by lantern slides, blue print copies of which the students are required to put in their note-books. Those students who have completed the longer course of lectures are advised to take a course in elementary chemical analysis followed by a chemical examination of a small number of agricultural substances.

Organic Chemistry or the Chemistry of the Compounds of Carbon. Two elementary courses are given in this subject, one extending through the first half-year, the other through the year. The first course is intended for students in medicine and is especially adapted to their needs. The other course is for students specializing in chemistry or those who wish a more extended knowledge of the subject. The method of instruction is the same in both and consists of lectures, recitation, and laboratory work, supplemented by frequent written examinations. The lectures are fully illustrated by experiments, specimens of the compounds considered and charts. The laboratory work follows the lectures closely and comprises the preparation and purification of a large number of typical organic compounds and the detailed study of their properties, reactions and relations. The second year's work consists of lectures on special chapters of the subject and of further laboratory work in the preparation and study of the compounds of carbon of a more complicated nature. Special courses of lectures are also given on the coal tar dyes and on the stereochemistry of the compounds of carbon and of nitrogen. In all the advanced work constant reference is made to the original literature of the subject in the various chemical journals. The advanced students also attend the seminary in organic chemistry. In this course the students report on papers in the current numbers of the chemical journals assigned to them, or upon special topics which they work up historically from the original literature. Occasionally reports on original investigation in progress in the organic laboratory are made.

Physiological Chemistry. The courses in this subject are especially arranged for students in medicine who have completed the required courses in physiology and chemistry. The method of instruction is by lectures, recitations and laboratory work, accompanied by

frequent written examinations. The work comprises the chemistry of the proteids, carbohydrates and fats, the detailed study of the compounds found in the animal organism, and of their reactions and decomposition products. In the laboratory the student separates from the various animal fluids and organs the chemical compounds which they contain, studies their properties, reactions and products of decomposition, and thus familiarizes himself with the methods of isolation and identification of these products. Especial attention is given to the chemistry of digestion and of the products of digestion. In the advanced work some special line of investigation is taken up, such as the repetition of important and extended pieces of work and verification of results already published.

Physical Chemistry. An outline of the more important features of the physical aspect of chemical changes is given in an introductory course of classroom instruction in physical chemistry. This course is followed by lectures on the present state of development of the various phases of the experimental side of the subject: the Gibbsian phase rule, the laws of mass action, the velocity of reactions, and electro-chemistry. Opportunity is given for experimental research in connection with this work; and the general lectures are supplemented by briefer courses on special topics.

Parallel to this group of experimental courses, instruction is given in mathematical chemistry. The aim of this work is to present physical chemistry as a branch of mathematical physics: to develop a coherent body of mathematical theory as the consequence of a small number of inductively established postulates. The treatment is primarily thermodynamical. Two courses are offered: an introductory one, in which the present state of the subject is presented in a connected way; and an advanced course, in which the historical development of the theory is traced.

The results of the experimental and theoretical investigations that are carried on in physical chemistry are published in the *Journal of Physical Chemistry*, which is issued monthly, during the academic year, by officers of the department.

Sanitary Chemistry, Toxicology. These subjects are taught by several distinct courses of lectures and laboratory work which include Potable Water, Foods and Beverages, and an introduction to Chemical Toxicology.

Laboratories are provided for the bacteriological as well as the chemical examination of water, and the adjoining room for micro-chemical analysis furnishes facilities for the microscopical examination of water sediments.

The work tables for food analysis are situated at one end of the laboratory for microchemical analysis, in order that easy access may be had to microscopes. At one corner of this room there is a small dark room provided for work with polariscopes and other optical apparatus. The laboratory is supplied with electric current and each table with oxygen, hydrogen, blast, exhaust, gas and water.

The equipment in material and apparatus for the study of chemical toxicology is such as to permit of the detection and determination of the rarer as well as the common poisons of both organic and inorganic origin.

The Chemical Laboratory. The Laboratory, named Morse Hall, consists of two buildings connected by corridors on each floor. It contains four lecture rooms, one seating three hundred and fifty students, another eighty and each of the others sixty-two. These rooms are furnished with all of the necessary appliances for the illustration of lectures by experiments and lantern projection, and are provided with adjacent preparation rooms. For elementary work in inorganic chemistry and qualitative and quantitative analysis, there are three large laboratories containing in the aggregate places for seven hundred and thirty-seven students working in sections. In addition to these, are two rooms for organic chemistry and a research laboratory for advanced work in that field, one laboratory with one hundred and eight places for physiological chemistry and toxicology, a special laboratory for microchemical analysis, two for bacteriological work in connection with the analysis of water and foods, one room for distillation in water analysis, three rooms for assaying, two with northern exposure for gas analysis, a fire-proof room to work with highly inflammable substances, a laboratory for organic ultimate analysis by combustion provided with powerful ventilation and special balances, two hydrogen sulphide rooms connected with strong fan-exhaust for work with noxious gases, an electric furnace laboratory, a large room for advanced inorganic chemistry together with two smaller ones for research work in this field, a room for spectroscopic chemical analysis with a photographic dark room and a mercury-pump room adjoining, a large laboratory for elementary work in physical chemistry, one for electrochemistry, one for undergraduate research and one for graduate work. The student laboratories contain in the aggregate places for one thousand and forty-seven students working in sections, or four hundred and thirty students working at once. The Chemical Museum is contained in the North Hall of the building. In the sub-basement there are two large constant temperature rooms, a dynamo room containing motors and a high pressure blower for air

blast, a room for the storage of ores, two others for the storage of highly inflammable chemicals, and a number of stock rooms. A general supply room from which all students draw their chemicals and apparatus for use in their work is situated on the main floor of the building. There are ten private laboratories for professors and instructors. The Chemical Library is centrally located on the first floor of the South Hall of the building. The laboratory of the University Experiment Station is also situated in Morse Hall. Distilled water is conducted in block-tin pipes to all the more important rooms on each floor from a tin-lined tank in the upper story of each building. Oxygen and hydrogen are made by the electrolytic decomposition of water by means of a dynamo current, the gases being collected in tanks of about fifty cubic feet capacity and thence piped to the various rooms of the building. Air blast is conducted wherever required from the high pressure blower in the basement. The buildings are supplied with an alternating current of 1000 volts and with two direct currents of 500 and 110 volts. Lighter currents for electrochemical analysis and synthesis are furnished by storage batteries.

The Museum contains collections for the illustration of lectures upon inorganic, organic and applied chemistry. These collections include specimens of the elements, their compounds, and the ores from which they are obtained, a complete collection of the most important organic compounds, and also specimens illustrating the leading chemical industries, such as the manufacture of the various acids, alkalies and salts, pigments, glass, pottery, soap, stearine and glycerine, and the chemical processes of bleaching, dyeing, and photography.

The Chemical Library contains complete sets of all the important journals, and is very fully supplied with works of reference and the standard books on chemistry and allied subjects. Such additions are made to it from year to year as are necessary to keep it abreast of the times. It is accessible to all students, under such restrictions only as are necessary to secure it against injury or loss.

The laboratories are open from 8 to 5:30 except on Saturday, when they are closed at 1 o'clock. Instruction hours are from 8 to 1, and 2 to 5.

Fifty-one courses in chemistry are offered, as below.

Bracketed courses are not given in 1901-1902.

The following sequence of courses is recommended for **students specializing in Chemistry**, and deviation from the plan should not be made except upon the approval of Professor CALDWELL and the Professors concerned:

FIRST YEAR—Introductory Inorganic Chemistry, course 3; Qualitative Analysis, course 7.

SECOND YEAR—Quantitative Analysis, course 12 ; Organic Chemistry, courses 30, 31 ; Assaying, course 18 ; Gas Analysis, courses 19 and 20.

THIRD YEAR—Physical Chemistry, courses 50, 51 ; Spectroscopic Chemical Analysis, course 17 ; History of Chemistry, course 45, or Advanced Inorganic Chemistry, course 46.

In filling out his time in the third year the student may elect such other courses as he wishes, but he is advised to take elementary courses in those branches of chemistry which he has not yet studied, rather than to elect advanced work in any particular field of the science.

FOURTH YEAR—History of Chemistry, course 45 ; or, Advanced Inorganic Chemistry, course 46.

The student has full liberty of election in filling the remainder of the time of the senior year.

Students specializing in Chemistry should acquire a good reading knowledge of French and German, and should include in their elections course 2b in Physics, course 2, or 3, or 4 in Mathematics, courses 2 and 33 in Geology and courses 11 and 13 in Mineralogy.

The following course of study is recommended for **students of chemistry** who desire to fit themselves for **industrial positions** :

<i>First Year.</i>	No. of Course.	1st Term.	2d Term.
Introductory Inorganic Chemistry.....	3	6	-
Qualitative Analysis.....	7	-	6
Mathematics : Analytic Geometry, Differential Calculus, Integral Calculus.....	2	5	5
German or French.....	1	3	3
Physics.....	2b	4	4

<i>Second Year.</i>	No. of Course.	1st Term.	2d Term.
Quantitative Analysis.....	12	6	-
Organic Chemistry.....	30	3	3
Organic Chemistry.....	31	3	3
Assaying.....	18	-	3
Gas Analysis.....	19	1	-
Gas Analysis.....	20	2	-
Mineralogy.....	11	3	3
Spectroscopic Chemical Analysis.....	17	-	3

<i>Third Year.</i>	No. of Course.	1st Term.	2d Term.
Introductory Physical Chemistry.....	50	2	2
Physico-Chemical Methods.....	51	3	3
Mechanics of Engineering.....	C.E. 20	5	5
Mechanical Drawing (Sibley College).....	D. 5	3	2
Electrochemistry for Engineers.....	56a	3	-
Physics.....	3	2	2
Advanced Quantitative Analysis.....	14e	-	3

Fourth Year.

The student is advised to elect the work for the Senior year from the advanced courses in chemistry and from the following courses offered by other departments :

	No. of Course.	1st Term.	2d Term.
General Economic Geology -----	33	3	3
Electrical Machinery (Sibley College) E.E. 10	10	4	-
Steam Machinery (Sibley College) -- M.D. 11	11	-	4
Mechanical Laboratory (Sibley Coll.) X.E. 11	11	3	3

Introductory Inorganic Chemistry.

1. **Introductory Inorganic Chemistry.** Six hours. First half-year. Required of freshmen in mechanical, electrical, and civil engineering.

(a) Lectures, T., Th., 11, *Ch. L. R. 1.* Professor CALDWELL and Mr. LAUDER.

(b) Recitations, two each week, in sections as assigned.

(c) Laboratory practice (5 hours actual practice), in sections as assigned. Professor TREVOR and Dr. JESSEL; Messrs. FOWLER, ROOT, and ———.

2. **Introductory Inorganic Chemistry.** Six hours. Second Section. Second half-year. This course is identical with course 1.

3. **Introductory Inorganic Chemistry.** Six hours. First half-year till Christmas recess. Credit, 4 hours first term. Required of students in medicine. Courses 8 and 13 follow this course for students in medicine. Students intending to specialize in Chemistry should take this course in their first year.

(a) Lectures, M., F., 11, *Ch. L. R. 1.* (b) Recitations in sections, M., 10, F., 12. (c) Laboratory practice, five hours actual practice, in sections. T., 8 to 11, and Th., 8 to 10. Professor TREVOR and Dr. JESSEL; Messrs. FOWLER, ROOT, and ———.

4. **Introductory Inorganic Chemistry.** Three hours. For students who may prefer to take a three-hour course extending through the entire year. (a) Lectures, W. 11, *Ch. L. R. 1.* (b) Recitations in sections as assigned. (c) Laboratory practice (two and one-half hours actual practice), in sections as assigned. Professor TREVOR and Dr. JESSEL; ———, ———, and ———.

6. **Qualitative and Quantitative Analysis.** Five hours. First half-year. Required of students in the courses in Mechanical Engineering. Lectures, M., W., 9, *Ch. L. R., 1.* Laboratory practice, M., W., F., 2-5; or T., Th., S., 10-1.

Qualitative Analysis. Professor DENNIS and Dr. WHITTELYSEY; Messrs. BURROWS, GEER, ——— and ———.

Quantitative Analysis. Professor DENNIS and Mr. CUSHMAN; Messrs. BURROWS, GEER, ——— and ———.

Course 6 is open only to those who have taken course 1 or 2.

6a. **Qualitative and Quantitative Analysis.** Five hours. Second half-year.

This course is identical with Course 6.

7. **Qualitative Analysis.** Six hours. Christmas recess until end of year. Credit, two hours first term, six hours second term. Students in science are advised, and those specializing in chemistry are required, to take this course instead of the qualitative analysis of course 6. Dr. WHITTELEY and Mr. GEER. Lecture, M., W., 9, *Ch. L. R.*, 1. Laboratory practice, M., F., 11-1, and T., Th., 2-4:30.

This course is open only to those who have had course 3.

8. **Qualitative Analysis.** Second half-year to April 25. Credit, two hours. Required of students in medicine. Dr. WHITTELEY; Messrs. BURROWS, GEER, ——— and ———. Lecture, S., 12, *Ch. L. R.*, 1. Laboratory practice, W., 10-1, and Th., 8-10.

This course is intended to follow course 3.

12. **Quantitative Analysis.** Elementary course for those who have had course 7. Six hours. First half-year. Mr. CUSHMAN. Lectures and recitations. T., Th., 9, *Ch. L. R.*, 1. Laboratory practice, T., Th., 2-5, and W., F., 11-1.

14. **Quantitative Analysis, advanced courses.** Open only to those who have had courses in qualitative and elementary quantitative analysis. Professor CALDWELL, Professor DENNIS, Assistant Professor CHAMOT and Mr. CUSHMAN.

a. *General inorganic, and ultimate organic analysis.* Professor DENNIS.

b. *Agricultural qualitative and quantitative analysis.* This course is for students specializing in agriculture. Its object is to familiarize them with the chemical properties of plants, soils, fertilizers, and the products of the farm, and also to prepare them for thesis work if they wish to continue the study through the senior year. The course should, therefore, be taken in the third year. It will be open only to those who have taken courses 1 or 2 and 26. Professor CALDWELL and Mr. LAUDER.

[c. *Food Analysis.* Laboratory work. Second half-year. Three hours.

Instruction is given in the examination of foods by chemical and optical methods. This course comprises a study of the following substances: milk, comestible fats and oils, starchy foods, canned goods, etc., with special reference to composition, nutritive value and purity,

the examination of foods for artificial coloring matters, preservatives and poisonous substances. This course may be extended so as to include the analysis of alcoholic beverages. Assistant Professor CHAMOT.

A special course in the microscopical examination of foods is offered under course 23.]

d. Water Analysis. Laboratory work. Second half-year. Three hours. Instruction in the methods for the examination of waters with reference to their fitness for household purposes, steam boilers, etc., special attention being paid to the interpretation of results. The course may be extended so as to include the analysis of mineral waters. Assistant Professor CHAMOT.

This course should be preceded by course 66.

e. Technical and Engineering Analysis. Iron ores, iron and steel, blast-furnace slag, paints and varnishes, alloys, coal and coke, etc. Mr. CUSHMAN.

17. **Spectroscopic Chemical Analysis and Colorimetry.** Easter recess to end of year. Three hours. Lecture, T., 11, *Ch. L. R. 3.* Professor DENNIS.

Laboratory practice (7½ actual hours), at hours to be arranged. Professor DENNIS and Dr. DALES.

The laboratory instruction comprises the observation and mapping of emission spectra with the Krüss spectroscope and direct vision spectroscopy, the qualitative analysis of unknown mixtures and of minerals with each of these instruments, the spark spectra and oxyhydrogen spectra of minerals, the spark spectra of liquids and gases, the absorption spectra of certain colored solutions, of solutions of the rare earths and of organic dyes, and colorimetric determinations with the latest and most exact instruments.

18. **Assaying.** Lectures and laboratory work. Six hours. Second half-year until Easter recess. Credit, 3 hours. Lectures, T., Th., 11, *Ch. L. R. 3.* Laboratory work at hours to be arranged.

The course comprises lectures upon the theory and practice of the scorification and crucible assay, and upon the metallurgy of copper, lead, silver and gold. In the laboratory, practice is given in the assay of gold, silver and lead ores, and of bullion. The course should be preceded by elementary courses in qualitative and quantitative analysis. Mr. CUSHMAN.

19. **Qualitative and Quantitative Gas Analysis.** Lecture. One hour. First half-year. T., 11, *Ch. L. R., 3.* Professor DENNIS.

20. **Technical Gas Analysis.** Laboratory practice. Two hours. First half-year. Instruction is given in the analysis of gas mixtures with the apparatus of Honigmann, Bunte, Orsat, Lunge and Hempel,

in the complete analysis of illuminating gas, generator gas, acetylene and air, the determination of the heating power of gaseous, liquid and solid fuels, and in the evaluation of nitrates with the nitrometers of Hempel, Lunge and Bodländer. Professor DENNIS and Dr. DALES.

22. **Microchemical Analysis.** Laboratory work. Three hours throughout the year. An introduction to microchemical methods. Instruction is given in the use of the microscope and its accessories in chemical investigations. Practice in the examination and analysis of inorganic substances with special reference to rapid qualitative methods and the analysis of minute amounts of material. Assistant Professor CHAMOT.

23. **Microscopical Examination of Foods.** Laboratory work. Two hours. Second half-year. Instruction in the use of the microscope in the examination of foods and condiments for the purpose of detecting adulterations and admixtures. Assistant Professor CHAMOT.

This course should be preceded by course 14 c.

Agricultural Chemistry.

(Laboratory work in this subject is given under course 14.)

25. **Agricultural Chemistry.** Elementary course, for students in the special short course in Agriculture. Christmas recess until Easter recess. Hours to be arranged. Professor CALDWELL and Mr. CAVANAUGH.

26. **Agricultural Chemistry.** General course. Three hours throughout the year. T., Th., S., 9, *Ch. L. R.*, 2. The general subjects treated in this course are the composition of plants, the chemistry of their growth, the sources of the supply of food of the plants, the chemical and physical properties of soils, the composition and the mode of action of fertilizers, and the chemistry of the products of the farm. Professor CALDWELL and Mr. LAUDER.

Open only to those who have taken course 1, or its equivalent elsewhere.

27. **Agricultural Chemistry.** Readings from journals. For those who have completed course 26. One hour per week, by appointment. *Ch. L. R.*, 2. Professor CALDWELL.

Organic Chemistry.

30. **Organic Chemistry.** Lectures and recitations. M., W., F., 9, *Ch. L. R.* 3.

31. **Organic Chemistry.** Laboratory work. Three hours. Courses 30 and 31 are required of all students specializing in chemistry, but course 30 may be taken separately by others, upon special

permission granted in each case. These courses are open only to those who have had courses 1, 6, and 11, or who have had 2 and 7 and are taking 12.

The lectures and recitations serve as an introduction to the general subject of the chemistry of the compounds of carbon. In the laboratory the student prepares a large number of typical compounds of carbon, and familiarizes himself with their properties and reactions. Assistant Professor ORNDORFF, Mr. TEEPLE and Mr. RUSSELL.

32. **Elementary Organic Chemistry.** Lectures and recitations. First half-year. Lectures, M., W., 12, *Ch. L. R. 1*. Recitations, F., 9, *Ch. L. R. 2*; and 12. *Ch. L. R. 1* and 3.

This course is intended only for students in medicine and is preparatory to course 40. Assistant Professor ORNDORFF, Mr. TEEPLE and MR. RUSSELL.

33. **Special Chapters in Organic Chemistry.** Lectures. T., Th., 9, *Ch. L. R. 3*. This course is open only to those who have completed courses 30 and 31. In this course especial attention is given to certain important chapters of organic chemistry, for which an elementary knowledge of the subject is necessary. Frequent references are made to the original literature, and an attempt is made to acquaint the student with the classical researches of organic chemistry. Assistant Professor ORNDORFF.

34. **Advanced Organic Chemistry.** Laboratory work. The course in the preparation of organic compounds is here continued, the preparations, however, being more difficult and requiring more experience and skill on the part of the student. The original literature is consulted, and the student is finally required to repeat some extended and important piece of work and to compare his results with those published, before taking up original work in this field. Assistant Professor ORNDORFF and Mr. TEEPLE.

35. **The Coal Tar Dyestuffs.** Lectures. First half year. Th., 11. *Ch. L. R. 2*.

The coal tar dyestuffs have become so important, from both a theoretical and practical standpoint, as to justify their consideration in a separate course of lectures. The methods of making the dyestuffs, their properties, constitution and relation to each other are discussed, the treatment being scientific rather than technical. Assistant Professor ORNDORFF.

36. **Stereochemistry.** Lectures. Second half year. Th., 11, *Ch. L. R. 2*.

The stereochemistry of the compounds of carbon and nitrogen form the subject of this course of lectures. The necessity for consid-

ering the space relations of the atoms in certain classes of physical isomers is shown and the close agreement of the facts and theory is brought out. Assistant Professor ORNDORFF.

37. **Seminary in Organic Chemistry**, One hour per week by appointment.

The object of this course is to familiarize the student with the literature of organic chemistry and to bring him into touch with its recent investigations and theories. Articles in the current numbers of the journals are assigned to the students, who report on them weekly, after which there is a general discussion and criticism of the papers presented. Assistant Professor ORNDORFF.

Physiological Chemistry.

40. **Physiological Chemistry**. Lectures or recitations, Two hours. Second half year. This course is the continuation of course 32 and is intended for students in medicine. Assistant Professor ORNDORFF, Mr. TEEPLE and Mr. RUSSELL.

41. **Physiological Chemistry**. Laboratory work. Two hours. Second half year. This course is required of students in medicine. Assistant Professor ORNDORFF, Mr. TEEPLE and Mr. RUSSELL.

42. **Advanced Physiological Chemistry**. Laboratory work. Assistant Professor ORNDORFF and Mr. TEEPLE.

Inorganic Chemistry.

45. **History of Chemistry**. Lectures. Two hours throughout the year. M., W., II, *Ch. L. R. 2*.

For all students intending to specialize in chemistry.

This course alternates with course 46. The general subject is divided into topics each of which is treated continuously from the beginning to the end of its history : biographies of chemists whose work has been prominent in any topic are given in connection with that topic. No other science has passed through so many interesting phases, and no other science has a more unique history. The course is open to those who have completed courses 2, 7, 12, 30 and 31. Professor CALDWELL.

[46. **Inorganic Chemistry**. Advanced course. Lectures. Three hours throughout the year. M., W., F., II *Ch. L. R., 3*.

The chemical elements are discussed in the order in which they occur in the Periodic Law of Mendeléeff, and especial consideration is given to the group properties of the elemental substances and to the relations of the groups to one another. The rare elements and "rare earths" are treated in as great detail as are the more common

elements. The lectures are fully illustrated by experiments. Professor DENNIS.

The course is open to those who have completed courses 2, 7, 12, 30 and 31.]

47. Inorganic Chemistry. Laboratory work. Hours to be arranged. The preparation and purification of inorganic compounds and the extraction of the rarer elements from ores and minerals. The methods followed comprise the usual fusion and wet processes, electrochemical methods, and synthetic work with the electric furnace using both the direct and alternating currents. Professor DENNIS.

Course 47 is designed to accompany course 46, but either course may be taken separately.

48. Inorganic Chemistry. Seminary. Open to seniors and graduate students. One hour throughout the year. Professor DENNIS.

Physical Chemistry.

The following courses in physical chemistry are open to students specializing in Chemistry who have completed courses 3, 7, and 12, but may be taken by students of other departments who have had introductory courses in Chemistry and Physics, and who have had or are taking Differential Calculus.

50. Introductory Physical Chemistry. Two hours throughout the year. T., Th., 8, *Ch. L. R. 4.*

The object of this course is to give a simple and systematic presentation of modern chemical theory. The student learns how to deal theoretically and practically with the variables concerned and is led to the derivation of many of the laws of chemistry such as those dealing with solution, fractional separations, combination and other relations. Dr. CARVETH.

51. Physico-Chemical Methods. Laboratory work, three hours a week.

Special attention is directed to sources of error in experimental work and calibration of instruments. The subject matter includes: methods of observation; calculation of error; the balance; accurate determination of temperature and thermal effects; pressures and volumes; molecular weight by vapor density and other methods; viscosity and capillarity; formation, separation and identification of phases, including fractionation methods; study of optical, photochemical, electrical and magnetic effects. Dr. CARVETH.

[**52. Advanced Physical Chemistry.** Lectures and recitations. Three hours throughout the year. Must be accompanied or preceded by courses 30 and 31. M., W., F., 10. *Ch. L. R. 4.*

A non-mathematical exposition of the law of mass action in its application to chemical equilibrium, to velocities of reaction, and to electromotive forces. These lectures should be supplemented by at least two hours per week of laboratory practice, course 57. Assistant Professor BANCROFT.]

53. **Mathematical Chemistry.** Lectures and recitations. Three hours per week throughout the year. Professor TREVOR.

55. **Electrochemistry.** Lectures. Two hours throughout the year. T., Th., 10, *Ch. L. R.*, 4. The historical development of the subject, with special reference to the theory of the voltaic cell. For advanced students in physical chemistry and physics. Assistant Professor BANCROFT.

56. **Physical Chemistry for Engineers.** Lectures. Three hours throughout the year. M., W., F., 12, *Ch. L. R.*, 4. Either half of this course may be taken independently of the other.

(a) First half-year. The subjects taken up are the electrolytic extraction and refining of metals; the preparation of compounds in the electric furnace; the electrolytic manufacture of inorganic and organic compounds; the theory and practice of storage cells. Students taking this course are recommended to supplement the lectures by two hours laboratory work, course 57. Assistant Professor BANCROFT.

(b) Second half-year. An elementary introduction to chemical engineering. The work is discussed in respect to the nature of products desired, mechanical contrivance and materials of construction, reactions involved, comparison and choice of method and study of waste products. Dr. CARVETH.

57. **Advanced Laboratory Work.** Hours and work to be arranged. Students may elect work in mass law, reaction velocity, conductivity, electrometric, high and low temperature measurements with special reference to course 52; in electrometric measurements with special reference to course 55; in electrochemical synthesis with special reference to course 56; or in advanced problems and research work. Assistant Professor BANCROFT and Dr. CARVETH.

Sanitary Chemistry and Toxicology.

65. **Beverages and Foods.** Lectures. Second half year. Two hours. M., W., 10, *Ch. L. R.* 2. Chemical composition, preparation for use, nutritive and calorific values, assimilability or digestibility, adulterations, preservatives, and their effects, dietaries and dietary standards, food economics. Professor CALDWELL.

Laboratory work in this subject is given under courses 14c and 23.

66. **Potable Water.** Lectures. First half year. Two hours. W., F., 8, *Ch. L. R.* 2. Sources of potable water; how polluted; agencies

at work leading to the "natural" or "self" purification of streams, etc., and what they accomplish; the data necessary for a decision as to the fitness of a water for household use; the interpretation of the results of water analyses, chemical, microscopical, and bacteriological. Modern methods of water purification. Assistant Professor CHAMOT.

Laboratory work in this course is given under course 14d.

67. **Toxicology.** Lectures. February 4 to May 5. Credit, one and one-half hours. M., W., 9, *Ch. L. R. 2*. A brief review of the present ideas as to the classification, mode and cause of action, and method of elimination of poisonous substances, together with a discussion of some of the methods employed for their separation and identification. Assistant Professor CHAMOT.

This course is intended for students in Veterinary Medicine.

68. **Toxicological Chemistry.** Laboratory work. First half year. One hour. T., 2-5, and Th., 2-5. This course has been planned to meet the needs of the students in the Medical College, and is intended to serve as an introduction to the methods employed for the separation and identification of the common poisons. Assistant Professor CHAMOT and Mr. LAUDER.

This course is open only to those who have completed the courses in chemistry required of first year students in medicine.

BOTANY.

The instruction in this department is offered at present in 19 courses. Courses 1 and 2 form a one year's course and are designed to lay the foundation for the advanced courses, as well as to present to the student a general outline of the principles of botanical science. Course 3 is designed especially for the needs of the students in civil engineering, where a knowledge of timber structure, strength of material as related to different kinds of timber tissue, and the diseases of timber, are important.

The advanced courses in comparative morphology, and embryology, comparative histology, mycology, and physiology, are intended to lay the foundation for independent investigations in these subjects as well as to present in a logical way the fundamental principles of development, relationship and phylogeny, as applied in these topics. Aside from the elementary courses these subjects are especially recommended to students who are fitting themselves for teachers, since a grasp of the principles underlying them is needed for the proper and thorough presentation of the elementary principles of botany. In the work of these courses each of the students gradually accumulates a set of permanent microscopic preparations which can be kept for future reference and demonstrations before the classes.

The flora of the region of Ithaca is very rich in species, and offers excellent opportunities for the student of systematic botany, and some facilities in the study of geographic botany. Excellent facilities are offered to the students who are fitting themselves for [experiment] economic work in the course in plant histology, plant physiology, and in the study of the fungi. While the laboratory is distant from the seashore it is well supplied with material of the marine algae for morphological and development study of typical forms.

The laboratory is well equipped with microscopes, microtomes, photographic apparatus, thermostats, sterilizers, culture rooms, an electric lantern and a large number of views for illustrating portions of the lectures, the Auzoux and Brendel models representing the different groups of plants, and other illustrative material in the way of charts, maps, etc. The large green houses connected with Sage College adjoin the rooms of the department, and are filled with many exotics representing the Pteridophytes, Gymnosperms and Angiosperms, and offer available material at all seasons for studies in development, and histology, and furnish living plants for illustrative material for many of the lectures. Space is devoted to the study of plant growth, physiological experiments, and for the handling and treatment of greenhouse plants, the latter being in charge of the head gardener of the department. The department also contains a large and growing herbarium, as well as collections of fruits, cones, nuts, fibres, a general collection of economic products, and a large number of specimens of the woods of different countries.

Courses 1, 2, 3, 5, may be elected in the Freshman year. Those desiring to specialize in botany are advised to take courses 1 and 2 in the first year.

I. General Courses.

(Courses 1 and 2 form a continuous course through the year.)

1. **General Comparative Morphology and Physiology of Plants.** Credit, 3 hours first term, 1 hour second term. First half-year, and second half-year until March 23. A study of representative plants of various groups, and of the fundamental principles of plant life and relationship. Lectures, M., 11. Laboratory practice and demonstrations, 1st section, T., 2-5 and W., 11-1; 2nd section, Th., 2-5, and F., 11-1. One forenoon and one afternoon session must be taken each week. Professor ATKINSON, Dr. DURAND, and Mr. MUTCHLER.

2. **Special Morphology, Taxonomy and Adaptation of Higher Plants.** Continues from course 1. Second half-year beginning

March 25. Credit 2 hours second term. Studies of typical plants representing the more general groups of angiosperms. Field excursions for the purpose of studying the local flora. Lectures, M., 11. Laboratory work in sections as in course 1. Assistant Professor ROWLEE, Dr. WIEGAND and Mr. MUTCHLER.

3. **Special Course in Dendrology for Engineers.** First half-year. Two hours. The morphology and Taxonomy of trees. The structure and development of wood. The qualities and use of woods. Up to Christmas vacation. M., W., 9-10:30. Assistant Professor ROWLEE and Mr. FOXWORTHY. The diseases of timber and forest trees. Christmas vacation to midwinter recess. M., W., 9-10:30. Professor ATKINSON and Mr. THOM. (Required of Civil Engineers, and open to election without any prerequisite in Botany, to those interested in these problems.)

5. **Geographical Botany.** Second half-year. Lectures, S., 9. Laboratory exercises and excursions, F., 2-5 and S. The distribution of plants over the surface of the earth. Practical field studies in plant distribution; also the preparation of an herbarium representing the local flora. Photographs are used to illustrate the distribution of plants. Assistant Professor ROWLEE and Mr. FOXWORTHY.

6. **Exotics.** One or two hours. The conservatory in connection with the department offers excellent opportunities for students who wish to become familiar with practical methods in propagation and cultivation of conservatory plants, and in practical greenhouse work. Mr. Shore, the expert gardener, will have charge of the instruction and practical work. Students desiring to take this course should consult Professor ATKINSON, who will have charge of conference and reports. Hours by appointment.

II. Advanced Undergraduate Courses.

These advanced courses may be elected in any order which the students chooses, the only prerequisite being courses 1 and 2. They are also open to election by graduate students.

Comparative Histology and Systematic Botany.

7. **Taxonomy and Phylogeny of Angiosperms.** Three hours through the year. Lectures, Th., 9. Laboratory work Wednesday afternoon and Thursday morning. A study of the genetic relationships of the phanerogamous orders. Practical studies in the laboratory, of groups illustrating the principles of natural classification. Assistant Professor ROWLEE.

8. **Comparative Histology of Plants.** Three hours through the year. Introduction to methods of investigation. Studies of the vegetable cell, its multiplication and contents. The development of primary tissues. Kinds of tissue. Comparative study of vascular tissue. Secondary thickening. Lectures, F., 9. Laboratory work, Friday afternoon and Saturday morning. Dr. WIEGAND.

9. **Dendrology.** Three hours through the year. A biological and taxonomic study of trees, including field observations upon the native species, and laboratory investigations upon the structure and development of woody structures. Required of the students of forestry. Prerequisites, courses 1 and 2. Course 5 may advantageously precede this course. Lectures, T., 8. Laboratory work, Monday afternoon and Tuesday morning. Assistant Professor ROWLEE and Mr. FOX-WORTHY.

Comparative Embryology, Mycology and kindred Subjects.

10. **Comparative Morphology and Embryology.** Three hours through the year. A study of representative groups which illustrate the line of evolution of green plants. Especial attention will be given to tracing the development and homologies of sporogenous, reproductive and embryological organs, with discussions of the principal plant phyla. Permanent microscopic preparations will be made, representing series in the liverworts, mosses, ferns, gymnosperms, and angiosperms. In the fall the chief attention will be given to the Bryophyta, the winter will be devoted principally to the Pteridophyta, followed by the gymnosperms and angiosperms in the spring. The course is continuous, and because of the logical sequence of the subjects, must be taken in the order presented. Lectures, Th., 11. Laboratory work Monday and Wednesday afternoons. Professor ATKINSON, and Dr. DURAND. Prerequisites, courses 1 and 2.

11. **Mycology.** Three hours through the year. First half-year until Christmas recess. *Basidiomycetes*; studies of representative genera of this large group, with especial attention to the structure and characters of edible and poisonous mushrooms and wood-destroying fungi. The equivalent of one weekly laboratory session will be devoted to field work in the collection of material. Christmas recess until Easter recess, Parasitic Fungi; the history and development of the most important parasitic fungi. Second half-year after Easter recess, general classification with studies in representative groups, and practice in culture methods. Practice in the recognition of species, or research work may in some cases be taken as a parallel course by registering in course 14a. Lectures, T., 11; laboratory work Mon-

day and Wednesday afternoons. Professor ATKINSON, and Mr. THOM. Prerequisites, courses 1 and 2.

12. **Taxonomy of the Bryophytes and Pteridophytes.** Three or two hours, throughout the year. Lecture, one hour, Th., 11. Laboratory, two hours, preferably Monday and Wednesday afternoons. The laboratory work will consist of a study of typical genera, practice in taxonomy, and field work. The students will attend the lectures of course 10, and may, if they choose take the laboratory work of that course in addition, making 5 hours. Students who have had course 10 will register only for the laboratory work of course 12, with 2 hours credit. Lecture by Professor ATKINSON. Laboratory work by Dr. DURAND. Offered 1901-1902.

III. Graduate Courses.

(Primarily for graduates; but open to election by undergraduate students engaged in research)

To those electing any of the graduate courses for an advanced degree the following general announcement applies. A four hour course is the minimum period and if the subject is chosen for a major study, or as a minor for the master's degree, more time will be required.

Comparative Morphology and Embryology, Mycology, etc.

13. **Methods of Research in Morphology and Embryology.** Not less than four hours. Each student will be assigned some problem for original research with special reference to sporogeny or embryology, and the morphology of the nucleus with reference to sporogenesis, spermatogenesis, oogenesis, and fertilization; or some problem in experimental morphology. The research will be made the basis for acquaintance with methods, and a thesis embodying the results will be prepared. The work should follow course 10, but in special cases may be taken as a parallel study. When these subjects are chosen as a major or minor for an advanced degree they can be pursued for several years according to the needs of the case. Reports weekly. Hours by appointment. Professor ATKINSON and Dr. DURAND.

14. **Methods of Research in Mycology.** The problems will be assigned according to the needs and capabilities of the student. In general it will be found desirable to devote a first period to an independent survey of the group of fungi in the collection of material and in general taxonomic work on the same to acquire a practical knowledge in the placing of genera and species in the various groups. From this point research on some problem can be directed to some monographic work, either in taxonomy, taking up one or more genera

according to the number of species ; or in development of a few species. The periods are arranged as follows, but are subject to change in special cases :

14a. **General Taxonomic Survey of the Fungi.** Four hours through the year ; or eight hours for the first half of the year. Should follow course 11, or in special cases may be taken as a parallel course. Hours by appointment. Professor ATKINSON and Mr. THOM.

14b. **Research** ; monograph of some genus or a limited number of genera ; or some monographic study of development, or of parasitism ; based on culture methods where possible. Not less than four hours through the year, and where the problem is selected as a major study more time will be required. In any case a thesis combining the results of the investigation will be required. Reports weekly. Should follow course 14a. Hours by appointment. Professor ATKINSON.

Plant Physiology and Ecology.

15. **Plant Physiology.** Not less than four hours, but when chosen as a major study, more time will be required. Problems will be assigned for investigation, dealing with the physical properties of growth ; with nutrition ; with the effects of stimuli and certain natural and environmental forces upon cell activities, plant growth, development, etc. Each student will be required to prepare a thesis embodying the results of his investigations. Prerequisites, courses 1 and 2, and in addition, one of courses 8, 10, or 11 (or an equivalent). Hours by appointment. Professor ATKINSON and Mr. KAUFFMAN. Weekly reports may be required.

Comparative Histology and Systematic Botany.

16. **Research in Taxonomy and Phylogeny of the Angiosperms.** Four or more hours. A monograph of some group which will include a comparative study of organs of taxonomic value, and also their development. Groups will be assigned for investigation preferably in the spring of the year before the course is to be taken up. Among the groups which may be taken up are the glume-bearing Monocotyledons (grasses, sedges, etc.), the amentiferous Dicotyledons, and the Compositae. Since different groups will be taken up in different years, students may pursue the work outlined in this course more than one year. Designed for those who have taken courses 7 and 8, or in special cases, permission will be given to take these as parallel courses. Hours by appointment. Assistant Professor ROWLEE.

17. **Research in Comparative Histology and Cytology.** Not less than four hours. Special problems. (a) Comparative histology : the comparative histology of a series of organs, or the anatomy of an individual plant. (b) Cytology : the biology and structure of starch, plastids, and other cell contents ; also nuclear division and cell formation, with special reference to tissue development. Intended to follow course 8, and may form the basis of a major or minor subject for an advanced degree. Assistant Professor ROWLEE and DR. WIEGAND.

IV. Botanical Seminars.

18. **Seminary in Embryology, Mycology, Physiology, etc.** Weekly seminars will be held in embryology, comparative morphology, mycology, physiology and related subjects. Readings and discussions of current literature ; and problems under investigation will form the basis for the seminary work. Required of all graduates and open to undergraduates who are engaged in research in courses 13, 14 and 15 (one hour). By appointment. Professor ATKINSON.

19. **Seminary in Comparative Histology and Taxonomy of the Angiosperms.** Weekly seminars will be held in these subjects. Readings and discussions of current literature ; and problems under investigation, courses 16, 17, will form the basis for the seminary work. Required of all graduates, and open to all undergraduates who are engaged in research work (one hour). By appointment. Assistant Professor ROWLEE.

ENTOMOLOGY AND GENERAL INVERTEBRATE ZOOLOGY.

The scope of the instruction in this department is indicated by the title of the department ; elementary courses are given in the general subject of invertebrate zoology, and special courses, both elementary and advanced in entomology. An opportunity is offered the student to lay a broad foundation for zoological studies by lectures covering in a general way the field of invertebrate zoology, and by a study in the laboratory of a wide series of typical forms, illustrating the more important groups of Invertebrates. These two courses taken in connection with similar courses offered by the Department of Physiology and Vertebrate Zoology afford the instruction in zoology needed by students in the general courses and serve as an introduction to the more advanced work of those who wish to make a special study of zoology.

Owing to the difficulty of studying marine animals at any place remote from a sea coast and to the exceptionally good facilities for the

study of insects at this University, those students wishing to take advanced work in invertebrate zoology here are advised to select some subject in entomology, and especial encouragement is given to those students wishing to make original investigations in this field. An important feature of this department is a summer term, consisting of lectures, field work, and laboratory practice, at the season of the year most favorable for the study of insects.

The Museum and Laboratory. The material equipment of the department for the study of General Invertebrate Zoology consists of a museum in which there is a good series of Invertebrates, including an excellent collection of corals and a very large collection of shells, the Newcomb Collection. The museum also contains the complete series of glass models of invertebrates made by Blaschka, the papier maché models of Auzoux, and a complete set of the zoological diagrams of Leuckhart. The laboratory is kept supplied with specimens of the typical marine forms studied by the students. These are supplied to the students at cost.

The entomological cabinet contains, in addition to many exotic insects, specimens of a large proportion of the more common species of the United States. These have been determined by specialists, and are accessible for comparison. The collection includes many sets of specimens illustrative of the metamorphoses and habits of insects. The laboratory is also supplied with a large collection of duplicates for the use of students; and is equipped with microscopes and other apparatus necessary for practical work in entomology.

The insectary of the Agricultural Experiment Station affords facilities to a limited number of advanced students for special investigations in the study of the life history of insects, and for experiments in applied entomology.

The following courses are offered in 1902-1903 :

1. **Invertebrate Zoology.** General course. First half-year until Christmas recess. Credit, 2 hours. M., W., 10, *White 12*. Professor COMSTOCK; and one practical exercise by the class in sections. W., Th., F., 2-4:30, *White 20*. Messrs. MACGILLIVRAY and RILEY.

2. **Morphology of Invertebrates.** Special laboratory course. First half-year until Christmas recess, and second half-year after Easter recess. Daily ex. S., 8-1, *White 20*. Messrs. MACGILLIVRAY and RILEY.

3. **General Entomology.** Lectures on the characteristics of the orders, sub-orders, and the more important families, with special reference to those of economic importance. Second half-year after Easter recess. Credit, 2 hours. M., W., F., 10, *White 12*. Professor

COMSTOCK ; and one practical exercise in sections for those who have not had courses 4 and 5. W., Th., F., 2-4:30, *White 20*. Messrs. MACGILLIVRAY and RILEY.

Course 3 is open only to students who have taken course 1. Those special students in agriculture who do not take course 1, but who wish to study entomology, are recommended to take courses 4, 7, and 5.

4. **Elementary Morphology of Insects.** Laboratory work. First half-year until Christmas recess. Three hours credit. Daily ex. S., 8-1, *White 20*. Messrs. MACGILLIVRAY and RILEY.

5. **Elementary Systematic Entomology.** Laboratory work. Second half-year after Easter recess. Credit, 2 hours. Daily ex. S., 8-1, *White 20*. Messrs. MACGILLIVRAY and RILEY.

Course 5 is open only to students who have taken course 4.

6. **Research in Entomology.** Advanced laboratory course, special work arranged with reference to the needs and attainments of each student. First half-year until Christmas recess, and second half-year after Easter recess. Daily ex. S., 8-1, *White 20*. Professor COMSTOCK and Messrs. MACGILLIVRAY and RILEY.

The entomological laboratory is closed from Christmas to the Easter vacation, and is open during the summer ; see below.

7. **Economic Entomology.** Lectures on applied entomology. Discussion of the more important insect pests and of the methods of combating them. Christmas recess until Easter recess. Credit, 1 hour. M., W., 10, *White 12*. Assistant Professor SLINGERLAND.

7a. **Economic Entomology.** Field excursions. Study of the more important insect pests. One afternoon per week by appointment. Second half-year after Easter recess. No credit. Assistant Professor SLINGERLAND.

Summer Term.

Owing to the better opportunities for the study of Entomology during the summer than in the winter, there has been established a summer term of this department. This term begins the first Wednesday following Commencement and lasts ten weeks. The courses are of an advanced nature ; and only those students of this University who have taken courses 1 and 3 are admitted to them. Teachers and others desiring to join the class without previously attending the University, should state in their application the amount of zoological work they have done.

The tuition fee for the summer term is \$25.00. Students who have been members of the University during the preceding year are excused from the payment of this fee. Those who are members during the

succeeding year may have the \$25 applied on their first term's tuition. Application for admission to the course should be made before June 1st.

8. **Introductory Course.** Elementary morphology of insects and systematic entomology. Laboratory work, and one excursion per week. Daily ex. S., 8-5, *White 11, 12, 20.* Messrs. MACGILLIVRAY and RILEY.

9. **Ecology of Insects.** Lectures and field work on the habits of insects, and on their relations to their environment. Th., 9-12, *White 12.* Professor COMSTOCK.

Course 9 is open only to students who are taking at least two hours of course 8. Credit is given as for laboratory work.

10. **Morphology and Development of Insects.** Lectures and demonstrations. M., W., F., 10. Credit, 2 hours. *White 12.* Professor COMSTOCK and Mr. RILEY.

11. **Research in Entomology.** Special work arranged with reference to the needs and attainments of each student. Daily ex. S., 8-5. Professor COMSTOCK and Messrs. MACGILLIVRAY and RILEY.

PHYSIOLOGY, VERTEBRATE ZOOLOGY, AND NEUROLOGY.

The laboratories and lecture-rooms of the department occupy the entire north wing of McGraw Hall. The museum is in the centre of the building on the main floor and in the first gallery.

Course of Instruction. With all, practical work constitutes an essential feature. With the first three, Physiology, Vertebrate Zoology, and Neurology, one third of the exercises are in the form of practicum, the objects being studied by the students in groups under constant supervision and with explicit directions. In the other courses the laboratory work is adapted to the needs of the individual.

The Museum. In its formation there has been kept in mind constantly its main purpose as an aid to instruction, elementary and advanced. Merely curious, showy or costly specimens have not been sought. But efforts have been made to obtain from all parts of the world representative forms of the various vertebrate groups, and, by means of carefully prepared specimens, to illustrate ideas, *e. g.*, the adaptation of structure to function; the persistence of apparently useless or injurious organs; the unity of type under diversity of external form and mode of life; the relationship of man to the apes, etc. The collection embraces an unusual number (about 1500) of well-preserved and prepared brains of man and other vertebrates. The local fauna is already represented by about 250 species, of which 62

are fishes and about 150 are birds ; it is believed that at least 350 different vertebrates inhabit the neighborhood of Ithaca.

The Vivarium. There is as yet no special provision for a zoologic garden, but living animals of moderate size and cost are kept in the basement of McGraw Hall, and are accessible at all times to students and visitors. During 1899-1900 the forms were as follows : Monkey, cat, fox, raccoon, ferret, porcupine, mouse, squirrel ; crow, pigeon, parrot ; alligator, heloderma (*Gila monster*), serpents and turtles ; frogs, salamanders and necturus ; lake lamprey, amia, gar, stickle-back, catfishes, perch, suckers, sunfish, etc. On the upper floor are maintained aquariums in connection with the course in Systematic and Economic Zoology.

Opportunities for Research. Besides ordinary forms, there are readily obtained living necturus, amia, and two kinds of lamprey. The Brazilian fishes collected by the late Professor C. F. Hartt have been identified by Professor Eigenmann. The large number of cats, sheep hearts and brains, and of representative vertebrates used annually at the practicums in Physiology and Zoology facilitate the study of both normal anatomy and variation. Besides the museum specimens there are in store many entire vertebrates, particularly marsupials at various ages. The hearts of numerous forms have been prepared by injecting alcohol into their cavities. For the study of cerebral topography, unusual facilities are offered in both material and literature.

The following courses are offered in 1902-1903 :

Courses 1 to 6 are open to Freshmen.

[For the sake of correlation with courses 1 and 3 in Entomology and Invertebrate Zoology most of the courses in this department will occupy each about one-third of the college year ; the exercises occur three times per week but the courses will count each as a two hour course for a half-year. The Physiology of the first year in the Medical College includes the lectures of course 1. The Anatomy of the first year includes the lectures of course 3.]

1. **Physiology.** First half-year until Christmas recess. Three hours per week. Credit, two hours. Two lectures, T., Th., 11. One practicum ; two sections at hours to be arranged Friday and Saturday. [If the lectures alone are taken the credit for the half-year term will be $1\frac{1}{3}$.] The title of this course is employed in the absence of any single word fully indicating its scope ; it really constitutes an introduction to the study of the structure, functions and relationships of man and other vertebrates. After a brief account of the vertebrate

classes, especially the mammals and the order primates, the lectures treat largely of the structures and functions of the nervous system and the sense organs. At the practicums each student dissects the viscera and certain muscles of the cat, and the heart, brain and eye of the sheep ; the principal tissues, including living cilia, are examined under the microscope. Professor WILDER and Dr. STROUD.

2. **Vertebrate Zoology.** Christmas recess until Easter recess. Three hours per week. Credit, one hour each term. Two lectures and one practicum ; days and hours as in course 1. At the practicums are dissected representative forms, including necturus, lamprey, ray, shark, etc. ; sections of the lancelet are studied under the microscope. Professor WILDER, Dr. STROUD, and Mr. REED.

Course 2 must be preceded by course 1, or by course 1 in Entomology and Invertebrate Zoology.

3. **Neurology.** Easter recess until end of year. Three hours per week. Credit, two hours. Two lectures and one practicum ; days and hours as in course 1. The lectures deal with (a) the comparative anatomy of the brain ; (b) the morphology of the human brain ; (c) the cerebral fissures. Professor WILDER and Dr. STROUD.

Course 3 must be preceded by course 1 or its equivalent.

4. **Anatomical Methods and Dissection of the Cat.** First half-year. Laboratory work with occasional lectures at hours to be arranged. Three or more hours. This course is designed for those who intend to teach physiology or zoology, or who, in preparation for a medical course, desire to gain manipulative skill and familiarity with mammalian structure. Dr. STROUD.

5. **Comparative Anatomy,** including man and the other primates. Second half-year. Three or more hours at times to be arranged. Dr. STROUD.

6. **Systematic and Economic Zoology.** Three hours during the year at times to be arranged. One lecture, one practicum, and one field-excursion each week. The lectures discuss the characters and relationships of the groups, and the habits, life-histories and economic value of certain forms. As laboratory work representative species are examined with special reference to the parts employed in classification. In the fall the fishes are studied, in the spring the birds, and the other classes in the winter. Mr. REED.

7. **Physiology of the Nervous System.** Spring term. Three hours. Credit, two hours. One lecture, one recitation and one laboratory exercise in dissection or experimentation. Professor WILDER and Dr. STROUD.

Course 7 must be preceded by courses 1, 3 and 4.

9. **Advanced Study, Research and Thesis Work.** Daily throughout the year. Professor WILDER, Dr. STROUD and Mr. REED.
10. **Department Conference.** Fortnightly throughout the year.

MICROSCOPY, HISTOLOGY AND EMBRYOLOGY.

As indicated by the following courses, this department offers elementary and advanced instruction in the theory and use of the microscope and its accessories, in photo-micrography, in vertebrate histology and vertebrate embryology ; and opportunities for research in all of these subjects.

The material equipment consists of a good supply of modern microscopes, supplied with a low and medium power dry objective and a 2 mm. homogeneous immersion objective. A projection microscope is available and constantly used in the lectures and in special demonstrations. Camera lucidas, polariscopes, micro-spectroscopes, photo-micrographic cameras, microtomes, and other special apparatus are in sufficient numbers to give each student opportunity for personally learning to use them, and for applying them to any special study in which they are called for. The collection of histologic and embryologic specimens is extensive and constantly increasing. Sets of typical specimens are available for study and comparison by the students.

The rooms for the use of this department are on the first and second floors of Stimson Hall. They consist of a large general laboratory, a research laboratory, a preparation room, and two laboratories for the instructing staff, where also special demonstrations of difficult subjects are given to small groups of students.

The aim of the department is to bring the student into direct contact with the truths of nature, and hence while there are lectures to give broad and general views, there is a large amount of laboratory work in which the facts are learned at first hand, and the methods and manipulations necessary for acquiring the facts are practised by each student. It is recognized that less ground can be covered in a given time in this way, but it is believed, and experience has confirmed the belief, that the intellectual independence and power to acquire knowledge direct from nature which is gained by this personal work is of far higher value than the facts and theories that might be learned in the same time from books and lectures alone, or from specimens prepared by some other individual.

The lake region with its rich and varied fauna is especially favorable for investigations in the histology and embryology of all the main groups of vertebrates ; and the proximity of the abattoirs in the city makes it possible to obtain material for the study of the development

of the sheep, cow, and pig. The veterinary college clinic and the department of anatomy supply material for the embryology of the cat and dog, so that the opportunities for research upon the development of the domestic animals are excellent. Every encouragement is given for the fullest utilization of these opportunities.

1. Microscopy, Histology and Embryology. Second half-year. Credit, 8 hours. Two lectures M. and W. 8, two recitations by appointment, and twelve hours of laboratory work weekly during the second half-year. Professor GAGE, Instructor THRO, and Assistants HILTON, WISMAR and ———.

Course 1 is not open to Freshmen in Arts.

Microscopy. The aim is to give a working knowledge of the theory and use of the microscope and its accessories, methods of mounting microscopical specimens, etc. It serves as a basis for all subsequent work of the department. The work begins Feb. 2, and extends until Feb. 14.

Histology. This includes the study of the fine anatomy of the domestic animals and of man, and also the fundamental methods of histologic investigation and demonstration. The work begins Feb. 16, and extends until April 25.

Embryology. This deals with the elements and methods of embryology in the amphibia, in the domestic animals, especially the chick and the pig, and in man. The work begins April 27, and extends until June 5.

4. Research in Histology and Embryology. Laboratory work eight or more actual hours per week with seminary throughout the year. This course is designed for those preparing theses for the baccalaureate or advanced degrees and for those wishing to undertake special investigations in histology and embryology. Professor GAGE and Mr. THRO.

Course 4 is open only to those who have taken course 1, or its equivalent in some other university. Drawing, (course 1, in Industrial Drawing and Art, or its equivalent) and a reading knowledge of French and German are indispensable for the most successful work in this course.

Subjects for theses should be decided upon as early as possible so that material in suitable stages of development and physiologic activity may be prepared.

5. Structure and Physiology of the Cell. First half-year. Two lectures per week at hours to be arranged. This course is designed for students of biology and medicine, and gives the fundamental facts and principles relating to cell structure and activity, especially in

their bearing on general problems of biology and theories of evolution and heredity. Open to students who have had satisfactory courses in zoology, botany or physiology, or course 1. Assistant Professor KINGSBURY. This course will be omitted in 1902-1903 in the absence of Dr. Kingsbury.

6. **Microscopy, Advanced.** First half-year. Two and one-half actual hours per week. This course consists of laboratory work with occasional lectures and demonstrations. Special instruction will be given in the theory and manipulation of the more important and difficult accessories of the microscope, *e.g.*, the micro-spectroscope, the micro-polariscope and the apertometer. The use and application of the projection microscope and of photo-micrographic apparatus will be learned by each student, in abundant practical experiments. Professor GAGE.

This course is open to those having pursued course 1, and who have in addition a knowledge of elementary photography. Course 9, department of Physics, is recommended.

7. **Seminary.** One lecture or seminary each week at an hour to be arranged. At the seminary, there will be presented reports of special methods and the results of advanced work. Professor GAGE.

NOTE.—For the work of this department the student will find a knowledge of Latin and Greek of the greatest advantage. A year's study of Latin, three to five recitations per week, and of Greek, Goodell's Greek in English, or Coy's Greek for beginners, would represent the minimum amount needed. For all courses, the ability to draw well freehand, and a good reading knowledge of French and German are desirable, and for research work almost indispensable.

GEOLOGY.

INCLUDING : A. DYNAMIC GEOLOGY AND PHYSICAL GEOGRAPHY ;
B. MINERALOGY AND PETROGRAPHY ; C. PALEONTOLOGY AND
STRATIGRAPHIC GEOLOGY ; D. ECONOMIC GEOLOGY.

A. Dynamic Geology and Physical Geography.

The plan of the elective courses offered in these subjects is in the first year to give a general view of the subject of geology, placing especial stress upon the dynamic side, but introducing the other aspects of geology where they have a distinct bearing upon the course. This is not primarily a professional course, but is intended to meet the needs of those who, without meaning to specialize, wish a general knowledge of the earth sciences. At the same time it serves as the basis for more advanced work. In the second year the subject of physical geography is offered, and this presupposes the course in

geology. These two courses together will serve as a preparation for those who expect to teach the earth sciences in secondary schools. The physical geography, or physiography, follows the plan suggested by the Committee of Ten, and other educational conferences. After these two years the student is able to undertake work for himself in the library and field. In these more advanced courses small problems are investigated and reports made upon them, and thus a training is gained for more advanced field work upon larger problems.

The work of the first two years consists partly of lectures and partly of field and laboratory work; but in the later years no lectures are given, the work being largely individual. Therefore, from the very first the student is placed directly in contact with the problems of the field, and is given training in observation and geological reasoning. The laboratory is well equipped with models, maps, rock specimens and photographs illustrating geological and physiographical phenomena. The neighborhood of Ithaca abounds in both simple and complex illustrations of geological phenomena; and in each class, in the spring and fall terms, excursions are made to points within easy reach of the University. These half-day excursions are supplemented by others to more distant points, occupying the entire day; and still longer expeditions are made each year. During 1900-1901 excursions were made to Niagara and to the coal mines at Wilkes-Barre, and probably similar expeditions will be made each year. Now and then vacation trips may be undertaken, particularly during the summer. In 1896 a party of advanced students made a journey to Greenland, in 1899 to Maine, and in 1900 to the Adirondacks. These more extended field expeditions are planned to give training for those who intend to pursue the subject of geology.

B. Mineralogy and Petrography.

In this department both elementary and advanced courses are offered to students who have the necessary preliminary knowledge of chemistry and physics. The courses lead in two main directions: (a) toward an acquaintance with the properties, methods of investigation, and uses of minerals and rocks; and (b) toward a knowledge of the characteristics of crystalized matter, and of the important relationship existing between crystallography and the sciences of physics and chemistry.

The laboratory rooms and museum are situated at present in McGraw Hall. They are well equipped with study collections, including the Benjamin Silliman, Jr., collection of minerals, and with apparatus for experiment and investigation. There is also material for original research.

C. Paleontology and Stratigraphic Geology.

The courses of this department are elective ; and are open to all. A special attempt is made to have all work, so far as is practicable, carried on after the manner of original research. This is rendered feasible by the fortunate location of the University, in the midst of the most important and classical State of the Union, so far as paleontology and stratigraphic geology are concerned.

A seemingly large proportionate amount of time is spent in field and laboratory, with a few recitations and lectures, thus giving the future teacher a knowledge at first hand of these important branches of geology as taught in secondary schools, and the future specialist precisely the knowledge and methods of work he will need in any university, state or national geological survey.

Great stress is laid on the study of shells, for by means of them stratigraphy and the world's geological history are mainly interpreted. The large University collections of invertebrates, fossil and recent, mostly shells, have been rearranged and catalogued during the past few years, and now form a most valuable and indispensable aid to elementary and advanced workers. Among those most serviceable to students of older formations will be found: the Jewett collection, especially rich in New York Silurian species ; local and practically complete Devonian faunas from Central New York ; the Hartt type collection of Carboniferous fossils from Brazil.

Of late special attention has been given to Tertiary paleontology and geology, several field expeditions being sent into the Southern States, where deposits of this age occur. The enormous amount of material so obtained when taken in connection with the Newcomb collection of recent shells (over 10,000 species) furnishes unparalleled opportunities for work in this branch of paleontology.

For the past four years this Department has been engaged in conducting a geological survey of the State of Louisiana. Winters have been spent in the field by several members of the Department. The studying and reporting upon these Tertiary and younger formations necessarily occupies much time. Summers, however, have been devoted to the interests of a school of field geology, established by this Department in the Helderberg mountains of Eastern New York. The type sections of New York's classic formations are visited and studied in detail by means of excursions by boat on the Hudson, Lake Champlain and Erie canal. This opportunity for original research in almost all the different horizons of the geologic scale can properly be styled exceptionally good.

D. Economic Geology.

Instruction. The courses of instruction are both required and elective. The former are for students in the colleges of architecture, forestry and civil engineering, and each course is adapted to the special needs of the class taking it.

The elective work is intended to give the student a general knowledge of the occurrence and properties of the useful minerals and rocks, or to enable him to specialize along certain lines if he so desires. The lectures are supplemented by laboratory and field work, and occasionally longer excursions are taken, as to the coal regions of Pennsylvania, the mining regions of Michigan, etc.

Collections. These include : (1) About 4,000 specimens of useful minerals and rocks, including ores (iron, copper, gold, silver, lead, zinc, etc.), building stones, coals, clays, cements, petroleum, etc., to which additions are constantly being made. In many cases the product in different stages of completion is exhibited with the raw material in order to show more clearly the use of the mineral or rock. These specimens are used in both the lecture and laboratory work. (2) A collection of about 1,200 lantern slides and several hundred photographs.

Laboratory. The department also has a laboratory in which either chemical work or fire tests can be carried on, there being for this latter purpose two furnaces capable of generating 3,300 degrees Fahrenheit of heat. These are useful for testing clays and building stones ; but the laboratory is especially well equipped with apparatus for clay investigation.

The following courses are offered in 1902-1903 :

A. Dynamic Geology and Physical Geography.

Consultation hours daily, excepting Saturday 10-11. Office second floor, south end of McGraw Hall.

Elective Courses.

1. **Dynamic, Structural and Physiographic Geology.** Three hours throughout the year. Lectures, field work and laboratory work. Includes a study of weathering, rivers, lakes, glaciers, ocean, nature and origin of rocks, mountain formation, volcanoes, earthquakes, etc. Also the application of the principles of dynamic geology to an interpretation of the past history of the earth. Each phase of the subject is fully illustrated by lantern views.

The indoor laboratory work is mainly confined to the winter season. During the fall and spring the laboratory hour is devoted to a field

study of the geological phenomena so well illustrated near the University. Longer voluntary excursions are made to more distant points, especially Taughannock, Union Springs and the coal mines at Wilkesbarre.

Lectures T., Th., 9, *Geological Lecture Room*. Laboratory and field work either M., 2-4:30; T., 2-4:30, or Wednesday, 2-4:30. *Open to all elective students*. Professor TARR, Dr. RIES and Mr. MATSON.

2. **The Geography of North America.** Two hours. M., W., II. A consideration of the physiographic features of North America and their influence upon the history and industrial development of the several nations. The principal sub-topics are: (1) the physiography of the continent and its development; (2) the climate, from standpoint of cause and effect; (3) the natural resources; (4) the influence of these various physiographic features upon the aborigines, the early settlements, the occupations of the people, the location of cities, etc. The lectures are illustrated by lantern slides, maps and models. Professor TARR.

Courses 2 and 3 are given in alternate years.

[3. **The Geography of Europe.** Two hours. M., W., II. A consideration of the physiographic features of Europe and their influence upon the history and industrial development of the several nations. The principal sub-topics are: (1) the physiography of the continent and its development; (2) the climate from the standpoint of cause and effect; (3) the natural resources; (4) the influence of these various physiographic features upon race characteristics, early movements of people, development of navigation, modern national development, location of leading cities, both in the past and the present, etc. The lectures are illustrated by lantern slides, maps and models. Professor TARR.

Courses 2 and 3 are given in alternate years. Course 3 is omitted in 1902-3.]

4. **Physical Geography, or Physiography.** Lectures, accompanied by field and laboratory work. Three hours throughout the year. Lectures M., W., 9, *Geological Lecture Room*. Laboratory and field work, Th., 2-4:30 (if another section is necessary, hours will be arranged). The members of the class are expected to arrange their work so as to have two free Saturdays in the fall and two in the spring for long excursions.

Open to students who have previously taken a course in dynamic geology or who are taking course 1. Professor TARR and Mr. MILLS.

The lectures discuss the features of the earth from the standpoint of their origin, history and influence upon life. Illustrated by lantern slides in the lectures, by the study of maps, models and photographs

in the laboratory, and by field excursions in fall and spring, Besides the required field work in the neighborhood of the University, longer voluntary excursions are offered to Niagara, Ontario Shore and Watkins Glen. This course is adapted to the needs of the secondary school teacher of physical geography, besides furnishing a second year of training for those who wish to pursue the subject of geology.

5. **Elementary Meteorology.** Two hours. First half-year. Lectures, recitations and laboratory work. T., 2-4:30. In the laboratory work the time is occupied in a study of meteorological instruments; observation with the instruments; and the preparation of weather and climatological maps. *Geological Lecture Room.* Professor TARR and Station Director ALLEN (U. S. Weather Bureau.)

Courses 4 and 5 together cover the ground ordinarily included under the term physical geography.

6. **Study of Weather Bureau Methods.** Two hours. This course consists of a study of meteorological instruments and their uses; practice in the making of meteorological observations; the construction of weather maps and climatic charts; weather forecasting; and, in short, such work as will lead to familiarity with all Weather Bureau methods and preparation for such work. Course 5 is prerequisite. Station Director ALLEN (U. S. Weather Bureau.)

7. **Seminary for Teachers.** One hour. W., 4:30-6. Consideration of methods to be employed in teaching geography and the earth sciences in the schools. *Geological Laboratory.* Professor TARR.

8. **Glacial Geology.** Three hours. All day Saturday during fall and spring; Tuesday, 4:30-6 during the winter. Open to graduate students and to those undergraduates who have previously completed course 4. Professor TARR, Mr. MILLS and Mr. MATSON.

In the fall and spring the class investigates in detail the glacial geology of the region selected for the purpose. This gives practice in actual field investigation, and in field methods. During the winter the notes and maps are worked up, and conferences and discussions are arranged upon the results. In addition, each student is expected to prepare and deliver a lecture upon some subject in glacial geology.

9. **Geological Investigation.** Field and laboratory work with readings, conferences, excursions, and the preparation of theses. Original investigation based upon field work is undertaken by each student. Primarily for graduates. Professor TARR.

10. **Geological Seminary.** Three hours. Monday, 4:30-6. Preparation and reading of theses upon special subjects, particularly upon investigations in the field. Abstracts and discussions of the current geological literature. Open to graduates and those undergraduates who are sufficiently advanced. Professor TARR.

B. Mineralogy and Petrography.

10. **Mineralogy.** First term until Christmas recess. Credit, two hours. A short course required of Civil Engineers, consisting of lectures, recitations and laboratory practice. M. and W., 10, and W. or F., 2. Assistant Professor GILL and Mr. TRACY.

[11. **Mineralogy.** Three hours, two lectures and one laboratory hour, throughout the year. Lectures, T., Th., 8; laboratory hours to be arranged. This course is for beginners, and is designed both as a general course in the subject, and as an introduction to more advanced work. Assistant Professor GILL. Course 11 is given in alternate years with Courses 14 and 15. It is omitted in 1902-3.]

12. **Crystal Measurement and Drawing.** Second half-year. Two hours. Assistant Professor GILL.

13. **Determination of Minerals by the Blowpipe Method.** First half-year. One laboratory hour. Assistant Professor GILL.

14. **Physical Crystallography.** First half-year. Three hours, two lectures and one laboratory hour. Must be preceded by course 11 or its equivalent. Assistant Professor GILL.

15. **Petrography.** Second half-year. Three hours. This course, together with the preceding, is intended to give an elementary knowledge of the determination of minerals and rocks under the microscope. Assistant Professor GILL.

16. **Seminary in Mineralogy and Crystallography.** One hour throughout the year. Devoted to the study of current literature and some of the more important classic writings. Assistant Professor GILL.

17. **Advanced or Special Work in Mineralogy and Petrography.** Adapted to the needs of the individual student. The work may be directed in the line of Crystallographic Measurements, Crystal Structure, Mineral Synthesis, Microchemical Methods or Petrographic Research. Assistant Professor GILL.

C. Paleontology and Stratigraphic Geology.

Office and Laboratory, first floor McGraw Hall. Consultation hours 10-12. All courses elective.

21. **Historical Geology.** Three lectures a week (fall and spring only.) Credit, two hours. A course designed to give the beginner or general student a clear and vivid idea of the principal changes through which the earth has passed from its nebulous stage to the present day. Well illustrated by lantern views and cabinet specimens. Excursions to Union Springs in the fall; to Chemung Narrows in the spring. Two short free excursions on Cayuga Lake each term. Longer

voluntary excursions to Niagara gorge and the vicinity of Lockport, Buffalo and Rochester. Hours to be arranged to suit the convenience of those concerned. Assistant Professor HARRIS.

22. **Stratigraphic Geology.** Six periods a week ; three lectures ; three laboratory hours ; fall and spring only. Credit, four hours. Includes course 21, and takes the student into the field at frequent intervals, at least twice a week, generally Tuesday and Saturday afternoons. Following the precedent of the U. S. Geological Survey, field work is begun by the construction of topographic maps. Various map projections are discussed at length in the laboratory. Lines of spirit levels are run for the purpose of furnishing bench marks for further topographic and section work. Fossils are collected systematically from the different horizons in each section. They are identified, and their horizons correlated, in the laboratory. Designed for those who would thoroughly understand the methods of geological work, either for the purpose of teaching well, or of doing independent work after leaving this institution. Hours to be arranged. Assistant Professor HARRIS and Mr. SMITH.

23. **Elementary Conchology.** Three periods a week ; fall and spring only. Credit, two hours. Pelecypoda and Gastropoda, fall ; Brachiopoda and Trilobita, spring. Hours to be arranged.

24. **Field and Laboratory Work.** All special and advanced work is included under this heading. Hours various.

D. Economic Geology.

Required Courses.

30. **General and Economic Geology for Civil Engineers.** From Christmas recess until end of second half-year. Three hours. Credit, two hours second term. Christmas recess to Easter recess, two recitations. M., W., 10 ; T., Th., 10, M., W., 12, and one laboratory period. M., 10-12, F., 10-12, F., 2-4. After Easter, two lectures, M., W., 10, and one laboratory period, M., 11-1, M., 2-4, W., 2-4. *Geological Lecture Room.* Assistant Professor RIES, Mr. MATSON and Mr. MILLS.

31. **Clay-Products and Building Stones.** Required for architects. Second half-year. Two hours. Lecture, M., 12. Laboratory, W., 2-4. *Geological Lecture Room.* Assistant Professor RIES.

32. **Origin and Nature of Soils.** Required for students in Forestry. First half-year. Two hours. Lectures, M., 11, T., 10. *Geological Lecture Room.* Assistant Professor RIES.

Elective Courses.

33. **General Economic Geology.** Three hours throughout the year. Lecture, T., W., 12. Laboratory, M., 2-4. A comprehensive

course upon the origin and nature of the metallic and non-metallic products, with especial reference to those of the United States. Students taking this course should have had sufficient preparation in geology and mineralogy. *Geological Lecture Room.* Assistant Professor RIES.

Intended for students in geology, for those studying mining engineering and for students in inorganic chemistry.

34. **Clay Investigation.** Primarily for graduates. Laboratory work, field work and reading. In the laboratory are taught the different methods of testing clays for the purpose of determining their uses.

35. **Advanced Economic Geology.** Primarily for graduates. This course, including laboratory work, field work and reading, will vary with the needs of the individual student. Assistant Professor RIES.

MILITARY SCIENCE AND TACTICS.

Pursuant to the act of Congress creating the land grant on which the Cornell University is founded, and the act of the legislature of the State of New York assigning the land grant, instruction is provided in Military Science and Tactics.

Military Drill is required of all male Freshmen except aliens, laboring students, special students and those physically unfitted therefor. A student deficient in a term of Military Drill is not permitted to substitute anything else for that work, or to be excused from any subsequent term until the deficiency is removed. In the cases of students not taking Drill, an equivalent in hours will be added to the hours required for graduation.

Students who drill are required to provide themselves with the University uniform, unless excused on account of inability to procure it, and they are held accountable for loss or injury to the arms and other public property issued to them.

Any member of the Cornell University corps who has satisfactorily performed all the duties required for the first year, and who is qualified therefor, may be selected for the place of a commissioned officer, if needed. For the performance of his duties as a commissioned officer in the sophomore, junior or senior year, he is entitled, if duly registered therefor, to credit of two recitation hours a week, and, at graduation, he may receive a certificate of military proficiency with his diploma, provided he has also completed the course in military science prescribed for the senior year.

Upon the graduation of each class, the names of such students as have shown special aptitude for military service will be reported to the Adjutant General of the Army and to the Adjutant General of the State of New York, and the names of the three most distinguished

students in military science and tactics will be inserted in the *Official Army Register*, from Headquarters of the Army.

Students required to drill must complete the work within their Freshman year, unless duly authorized to postpone part of the work because of illness or other necessity.

The Cadet Corps is organized as follows : an infantry regiment with band, a field battery (dismounted), a signal detachment, and a hospital detachment.

The following courses are offered in 1902-1903.

1. **Infantry Drill.** School of the soldier. School of the company. School of the battalion and ceremonies. First term until Christmas recess and second term after Easter recess. Credit, 2 hours each term. M., W., F., 4:45. Major VANNESS.

2. **Artillery Drill, for Selected Detachments.** School of the Battery, dismounted. Sabre exercise. First term until Christmas recess and second term after Easter recess. Credit, 2 hours each term. M., W., F., 4:45. Major VANNESS.

3. **Military signaling** for selected detachments. First term until Christmas recess and second term after Easter recess. Credit, 2 hours each term. M., W., F., 4:45. Major VANNESS.

Students in courses 2 and 3 are selected by the Commandant from those reasonably proficient in course 1.

4. **Musketry and Target Practice.** For volunteers only. Theoretical instruction. Position and aiming drills and gallery practice. Christmas recess until Easter recess. M., F., 12. Armory. Range practice, 200 and 300 yards. Second term after Easter recess. Hours to be arranged.

The marksman's badge, presented by Gen. A. C. Barnes of the Board of Trustees, will be conferred on each student qualifying as marksman ; a bar to be added for each subsequent qualification.

5. **Litter Drill and Instruction in First Aid to the Wounded.** A hospital detachment, composed mainly of students intending to enter the Medical profession, is attached to the infantry regiment.

Elective Courses.

6. **Military Science.** (*For students in 2d, 3d, or 4th year*). Lectures and text-book. Christmas recess until Easter recess. Credit, 1 each term. T., Th., 12. Major VANNESS.

7. **Elective Drill.** Students of the sophomore, junior and senior classes may elect drill, and, if duly registered therefor, they may receive a credit of two recitation hours per week, whatever grade they may occupy in the cadet organizations.

The military band is supported by the University. An instructor

and band instruments are provided. Members of the band receive the same credit, for required or elective military work, as other cadets.

HYGIENE AND PHYSICAL CULTURE.

An introductory or general course of lectures is given each year. Advanced courses of instruction are also given each year. These take up the various problems of physical culture, and consider the auxiliary appliances for their solution. Special attention is given to the needs of students intending to teach.

For the physical training and development of male students there has been provided a Gymnasium, thoroughly equipped with baths, dressing-rooms, and all the apparatus usually found in a well-furnished gymnasium. This is under the charge of an experienced physician, the Professor of Physical Culture and Director of the Gymnasium, who examines every male student at his entrance and at stated intervals thereafter, learns the condition of his health, takes his physical measurements, and prescribes such exercise as may be required for his complete and symmetrical bodily development. The gymnasium is also open to all the members of the University for voluntary exercise; but the Professor of Physical Culture or the Instructor in Gymnastics is in constant attendance, and no student is suffered to indulge in hazardous or excessive athletic efforts, or to attempt any feat which in his individual case is likely to be attended with risk.

Special provision has also been made for the physical training of women in the Sage College Gymnasium. The department has organized a system of exercises calculated to maintain and develop the physical strength of young women, and at the same time prevent any of the evils which might arise from exercises that are too violent or too long continued.

The exercises thus provided for are obligatory upon all members of the freshmen or sophomore classes living in the college, subject to exceptions in particular cases by the Instructor in charge.

The building erected for the purpose of the GYMNASIUM AND ARMORY is situated at the extreme southern end of the campus. The main portion is of brick, one hundred and fifty feet long, sixty feet wide, and fifty feet high. The Annex joining the main hall on the south, is a three-storied building, having an area of seventy-four by eighty feet. The main building, with the exception of a small portion that is set apart for an office and a military store-room, is used for gymnastics and military drill. This contains the arms and equipment of the cadet corps, and a carefully selected supply of the most improved gymnastic apparatus and appliances for both individual and

class work. The hall is heated by steam and lighted by electricity, and gives a clear space of floor room in the gymnasium of one hundred and thirty-five by sixty feet. The Annex contains the offices of the Department of Physical Culture, examination room, bath rooms, swimming bath, lavatory, closets, general repair room, baseball batting cage, crew practice room, and dressing-rooms which contain locker accommodations for about one thousand students.

Athletics.—The Cornell Athletic Association, composed of representatives from the trustees, faculty, and student athletic organizations, was incorporated in June, 1889. A standing committee on student organizations, including the faculty members of the association, has also been appointed from the faculty. It is hoped that the coöperation of these various interests, and the existence of a permanent organization, may tend to produce a greater steadiness in the management of athletics, and permit of some continuity in the transmission of athletic methods and traditions.

The athletic ground called Percy Field, after the son of one of the donors, was secured and equipped for out-of-door sports by the joint gift of Mr. J. J. Hagerman and Mr. W. H. Sage. The field has an area of nearly ten acres, including a quarter-mile cinder track, the Witherbee Memorial club-house, and a grand stand seating about twelve hundred persons, and is arranged for football, baseball, tennis, and general athletics.

The following courses are offered in 1902-1903.

2. **Hygiene and Physical Culture.** Open to all students. First half year. Two hours. Lectures and recitations. Hours to be arranged. Professor HITCHCOCK.

3. **Physical Examinations, Theory and Practice.** Open to all classes but freshmen. Courses especially adapted for those who are to instruct in Physical Culture and include all details which would be expected from one not having a medical degree. First half year. Five hours. Hours to be arranged. Professor HITCHCOCK.

4. **Special Medical Advice to Indigent Students.** Gymnasium office. Daily except Saturday from 12 to 1, throughout the year. Doctor HITCHCOCK.

5. **Gymnastic Exercises.** Asthenic class, consisting of men who in the judgment of the director—which judgment is founded on a physical examination,—are imperatively in need of special physical development and others who may elect. First term until Christmas recess and Easter recess until end of year. Credit, 1 hour each term. The work consists of class and squad work, indoors and out, special developing exercises, and exercises prescribed by the Director for

individual deformity or immaturity. Daily ex. S., 5-6. Mr. LANNIGAN.

6. **Gymnasium Exercises.** Christmas recess until Easter recess. Elective for men of three upper classes. Freshmen 4-6. M., T., Th., F. Credit 1 hour each term. Optional class on W., S., 5. Special exercises for individuals during the forenoon at hours to be arranged. Mr. LANNIGAN.

7. **Physical Examinations.** Required of all men entering the University this year, and at the beginning of each athletic season's training for all men who are to train for athletic competition. Make special appointments at Gymnasium office. Professor HITCHCOCK and Mr. LANNIGAN.

8. **Re-examination** of old students by appointment throughout the year. Professor HITCHCOCK.

9. **Theoretical and Practical Gymnastics** open only to juniors and seniors who expect to teach. Counting two hours. Hours to be arranged. Professor HITCHCOCK and Mr. LANNIGAN.

10. **Women's Gymnastic Exercise.** Freshmen and Sophomores. Instruction is given in class exercises, with and without apparatus, throughout the year. Gymnasium for women. Daily ex. S. Credit, 2 hours each term. Miss CANFIELD.

11. **Advanced Practical Gymnastics.** Readings and practical exercises. Open only to women who have completed course 10 or a substantial equivalent. Two hours. Hours to be arranged. Miss CANFIELD.

12. **Physical Examinations,** women of all classes, by special appointment. Office of the Gymnasium for Women. Miss CANFIELD and Dr. ELMA GRIGGS.

THE COLLEGE OF LAW.

FACULTY.

JACOB GOULD SCHURMAN, A.M., D.Sc., LL.D., President.

FRANCIS M. FINCH, A.B., LL.D., Director of the College, Dean of the Faculty, and Professor of the History and Evolution of the Law.

ERNEST W. HUFFCUT, B.S., LL.B., Professor of Law.

CUTHBERT W. POUND, Professor of Law.

WILLIAM A. FINCH, A.B., Professor of Law.

EDWIN H. WOODRUFF, LL.B., Professor of Law.

FRANK IRVINE, B.S., LL.B., Professor of Practice and Procedure.

FREDERICK D. COLSON, B.L., LL.B., Instructor in Procedure.

JUDGE ALFRED C. COXE, A.M., (of the United States Circuit Court), Lecturer on the Law of Shipping and Admiralty.

ALBERT H. WALKER, LL.B., (of the New York Bar), Lecturer on the Patent Laws of the United States.

ROYAL A. GUNNISON, LL.B., (of the Binghamton Bar), Lecturer on the United States Bankruptcy Act.

ALEXANDER H. R. FRASER, LL.B., Librarian.

THE COLLEGE YEAR.

The college year for 1902-1903 begins Tuesday, September 23, 1902, and closes Thursday, June 18, 1903, and is divided into two terms with an intermission of about two weeks at Christmas and one of about ten days at Easter. Students should present themselves promptly for registration on the dates fixed for that purpose in the calendar. Permits for late registration will be granted only for the most urgent reasons.

ADMISSION TO THE COLLEGE.

Admission to the First-Year Class. Applicants for admission to the first-year class as candidates for a degree must be at least eighteen years of age, and must have had a previous education at

least equivalent to a high school course.* The educational requirement may be satisfied by the presentation of certificates, or by examinations, as follows :

A. **ADMISSION ON DIPLOMA OR CERTIFICATE.** The following applicants will be admitted without examination, upon the presentation of satisfactory certificates or diplomas :

(1) Graduates of universities and colleges, or students who have met the entrance requirements and satisfactorily completed one year of study in any university or college of approved standing.

(2) Holders of an academic diploma, or any sixty-count academic certificate, issued by the Regents of the State of New York.

(3) Graduates of high schools and academies of approved standing in a course of not less than four years, or, if less than four years, including the examination subjects required for admission to the College, or their substantial equivalents, and in either case, recommended by the Principal of the High School or Academy issuing the certificate or diploma for admission without examination.

Applications for admission on a diploma or certificate issued by a public or private high school or academy must be sent in advance to the Registrar of the University by the Principal of the school issuing the diploma and not by the candidate himself, and must be accompanied by full and specific information with regard to the course of study, the time given to each subject and the amount of work covered in each subject. Where a catalogue or circular is issued by the school this should also be filed with the application. Blank forms of certificate may be obtained of the Registrar.

Applicants for admission on diploma or certificate who for any reason submit themselves to examination in any subject required for admission on examination and fail or are conditioned, will not be regarded as in full standing until such deficiency is made good.

B. **ADMISSION ON EXAMINATION.** All other applicants, if candidates for a degree, are required to pass a satisfactory examination in the subjects required for admission to the Academic Department. (See *Ante*, p. 45.)

* "*Resolved*, That the American Bar Association is of the opinion that before a student commences the study of law, it is desirable that he should have received a general education at least equivalent to a high school course, and that persons who have not completed the equivalent of such a course should not be admitted into law schools as candidates for a degree." *From the Proceedings of the American Bar Association for 1897*, p. 33.

Resolved, That no law school shall be elected to membership unless it shall require of candidates for its degree the completion of a high school course of study, or its equivalent." *From the Articles of Association of the Association of American Law Schools, adopted at Saratoga, Aug. 28, 1900.*

Admission to Advanced Standing. Applicants for admission to advanced standing as members of the junior (second year) class must be at least nineteen years of age, must meet the educational requirement specified for admission to the first-year class, and must pass a satisfactory examination in all the law work of the first year. Examinations for advanced standing are given at the University in September, beginning Tuesday of registration week.

Admission as Special Students. Applicants who are twenty years of age may, in the discretion of the Faculty, be admitted to the College without examination as special students, not candidates for a degree, and may elect such work as they desire, subject to the permission of the professors whose subjects are selected. This privilege will be granted only upon written application specifying the age of the applicant, the amount of preparatory study, or of previous law study, and accompanied if practicable by certificates from the preparatory school, law school, or attorney, under whose direction such studies have been pursued. New York students will not be admitted as special students unless they present a Regents' law student certificate. Applicants are advised to correspond with the Secretary of the College before presenting themselves in person. In order to remain in the College special students must pass satisfactory examinations in at least ten hours of work (equal to two class room hours a day). Special students may be admitted as candidates for a degree if they pass the required entrance examinations before the beginning of their second year in the College.

Admission of Students from the Academic Department. Juniors and seniors in good standing in the Academic Department of the University, are allowed, with permission of the Faculty of Arts and Sciences and with the consent of the Faculty of the College of Law in each case, to elect studies in the College of Law which shall count toward graduation both in the academic course and in the College; but the sum total of hours so elected cannot exceed the number required for one year's work in the College of Law, or exceed nine hours per week in any term. Under this provision a student may complete a general course of university study and the law course in six years. Such students will not be certified to the Bar Examiners unless they have completed one full year of law work (14 hours) and have taken nine hours in the year for which the certificate is asked.

Examinations for advanced standing are held at the University in September, on Tuesday, Wednesday and Thursday of registration week, as follows: Tuesday, 9 A.M., Contract; 3 P.M. Torts; Wednesday, 9 A.M., Criminal Law; 3 P.M. Property; Thursday, 9 A.M., Civil

Procedure. These examinations must also be taken by students conditioned in any of the subjects during the preceding year.

Suggestions to New York Students. It is desirable that applicants who wish to be admitted to the New York bar, and who are not graduates of colleges or universities registered with the Regents of the State as maintaining a satisfactory standard, should procure the Regents' "law student certificate" in order to comply with the rules governing admission to the bar of the State. Inquiries as to this certificate should be addressed to the Secretary of the Regents, Albany, N. Y.

COURSES OF INSTRUCTION.

The course of instruction extends through three years of nine months each.* The object of the College is to afford a thorough training in the fundamental principles of Anglo-American law, both the substantive law and the law of procedure. Instruction is carried on by the study of selected cases, text-books, and syllabi, by lectures and exposition, and by colloquy and discussion. In addition to the courses given by the resident Faculty, provision is made each year for courses of lectures by eminent specialists in the profession.

Tabular Outline.

<i>1st Year.</i>	No. Course.	1st Term.	2d Term.
Contract -----	1a -----	4 -----	2 -----
Agency -----	1b -----	- -----	2 -----
Torts (including Master and Servant) -----	2 -----	3 -----	3 -----
Criminal Law and Procedure -----	3 -----	2 -----	2 -----
Real and Personal Property -----	4 -----	3 -----	3 -----
Civil Procedure -----	5 -----	2 -----	2 -----
<i>Junior Year.</i>	No. Course.	1st Term.	2d Term.
Property -----	20 -----	2 -----	- -----
Sales -----	21 -----	- -----	2 -----
Probate Law -----	22 -----	2 -----	2 -----
Equity Jurisdiction and Trusts -----	23 -----	3 -----	3 -----
Insurance -----	24 -----	2 -----	- -----
Domestic Relations -----	25 -----	- -----	2 -----
Evidence -----	26 -----	2 -----	2 -----
Constitutional Law -----	27 -----	1 -----	1 -----
Civil Procedure -----	28 -----	2 -----	2 -----
College Court -----	29 -----	1 -----	1 -----

* "Resolved, That the American Bar Association approves the lengthening of the course of instruction in law schools to a period of three years, and that it expresses the hope that as soon as practicable a rule may be adopted in each State, which will require candidates for admission to the bar to study law for three

<i>Senior Year.</i>	No. Course.	1st Term.	2d Term.
Property, Suretyship and Mortgage	30-30a	2	2
Partnership; Corporations	31-32	3	3
Quasi-Contracts	33	2	-
Carriers	34	-	2
Bills, Notes and Checks	35	2	-
International Law	36	-	2
Civil Procedure	37	3	3
Statute of Frauds. Insolvency. Bank- ruptcy. Practical Suggestions for Preparation and Trial of Causes. } Legal Ethics. History and Evolution of the Law. }	39-40	2	2
Practice Court	41	1	1

First Year.

Boardman A.

1. a. **Contract.** Four hours until the Easter recess. Huffcut's Anson on Contract; Huffcut and Woodruff's American Cases on Contract (2d ed.). T., W., Th., F., 9. Professor WOODRUFF.

1. b. **Agency.** Four hours from the Easter recess. Huffcut's Agency (2d ed.); Huffcut's Cases on Agency. T., W., Th., F., 9. Professor WOODRUFF.

[Contract and Agency constitute a continuous course and registration must be for the entire year.]

2. **Torts (including Master and Servant).** Three hours. Ames's and Smith's Cases on Torts, 2 vols.; Huffcut's Agency (2d ed.), Book II. M., T., Th., 10. Professor HUFFCUT.

3. **Criminal Law and Procedure.** Two hours. Beale's Cases on Criminal Law; Beale's Criminal Pleading and Practice; New York Penal Code and Code of Criminal Procedure. T., Th., 11. Professor POUND.

4. **Property.** Three hours. Introduction to Real and Personal Property: Brantly's Personal Property, chapters 1-3; Finch's Syllabus on the Law of Property in Land, §§ 1-10; Finch's Cases on the Law of Property in Land, pp. 1-381. The Law of Personal Property: Brantly, chapters 4-15; Gray's Cases on Property, Vol. I, pp. 1-384. Real Property: Finch's Syllabus, §§ 11-17; Finch's Cases, pp. 483-712. M., W., F., 11. Professor W. A. FINCH.

5. **Civil Procedure.** Two hours. Introductory lectures on the relation of procedure to substantive law, and the development of the

years before applying for admission." *From the Proceedings of the American Bar Association for 1897, page 31.*

"After the year 1905, members of this Association shall require a three years' course." *From the Articles of Association of the Association of American Law Schools, adopted at Saratoga, Aug. 28, 1900.*

reformed procedure ; New York Code of Civil Procedure, first five chapters, and selected cases on topics included therein ; Perry's Common Law Pleading. W., F., 10. Professor IRVINE.

Junior Year.

Boardman B.

20. **Property.** First term. Two hours. Real Property continued. Finch's Selected Cases on the Law of Property in Land. W., F., 10. Professor W. A. FINCH.

21. **Sales.** Second term. Two hours. Burdick's Cases on Sales. The course also includes Gift and Assignment : Brantly's Personal Property, chapters 16 to 19 and chapter 22 ; selected cases. W., F., 10. Professor W. A. FINCH.

22. **Probate Law.** Two hours. Wills and Administration and Surrogate's Practice. Statutes, codes and selected cases. M., 10, F., 9. Mr. COLSON.

23. **Equity Jurisdiction and Trusts.** Three hours. Syllabus and selected cases. M., W., F., 11. Professor HUFFCUT.

24. **Insurance.** First term. Two hours. Woodruff's Cases on Insurance. T., Th., 11. Professor WOODRUFF.

25. **Domestic Relations and the Law of Persons.** Second term. Two hours. Woodruff's Cases on Domestic Relations and the Law of Persons. T., Th., 11. Professor WOODRUFF.

26. **Evidence.** Two hours. Thayer's Cases on Evidence. M., T., 9. Professor POUND.

27. **Constitutional Law.** One hour. McClain's Cases on Constitutional Law. W., 9. Professor POUND.

28. **Civil Procedure.** Two hours. (a) Equity pleading and practice, with special reference to the system in use in the Federal courts. (b) New York Code of Civil Procedure, chapters 6 to 13 inclusive ; and selected cases. The preparation of pleadings and motion papers by every member of the class, on hypothetical statements of facts, is part of the required work, the form, sufficiency, etc., of the pleadings submitted being discussed in the class-room. T., Th., 10. Professor IRVINE and Mr. COLSON.

29. **College Court.** One hour. Arguments in Club Courts upon agreed statements of facts. A member of the Faculty presides at each argument. Th., 9, or 12.

Senior Year.*Boardman C.*

30. **Property.** First term. Two hours. Title to Real Property. Future estates in Real Property. Finch's Cases on Property in Land. pp. 856-1141, and other selected cases. T., Th., 10. Professor W. A. FINCH.

30. a. **Property.** Second term. Two hours. Suretyship; Mortgages; Liens; Searching and Abstracts of Title. Selected cases. T., Th., 10. Professor W. A. FINCH.

31-32. **Partnership. Corporations.** Three hours. Burdick on Partnership; Burdick's Cases on Partnership. Smith's Cases on Private Corporations. M., W., 11, Th., 9. Professor POUND.

33. **Quasi-Contracts.** First term. Two hours. Synopsis and selected cases. M., 9, F., 10. Professor WOODRUFF.

34. **Carriers.** Second term. Two hours. McClain's Cases on Carriers. M., 9, F., 10. Professor WOODRUFF.

35. **Bills, Notes and Checks.** First term. Two hours. Huffcut's Statutes, Cases and Authorities on Negotiable Instruments. T., Th., 11. Professor HUFFCUT.

36. **International Law.** Second term. Two hours. Syllabus and lectures. T., Th., 11. Professor HUFFCUT.

37. **Civil Procedure.** Three hours. New York Code of Civil Procedure, chapters 14 to 17 inclusive and chapter 19, with selected cases on topics included therein. Preparation of papers, on hypothetical statements of facts, in the actions and special proceedings, the procedure in which is regulated by the chapters above mentioned, is part of the required work. T., W., F., 9. Professor IRVINE and Mr. COLSON.

38. **College Court.** One hour. This is supplementary to the course in Procedure, and is presided over by the Professor of Procedure as judge. Cases are prosecuted and defended by the members of the class as attorneys on hypothetical statements of facts. Process is served, pleadings are drawn, motion papers are prepared and motions argued, and cases are tried, all as nearly as may be in conformity with the procedure in the Supreme Court of the State of New York. F., 11.

39. **Statute of Frauds. Insolvency and Bankruptcy. Practical Suggestions for the Preparation and Trial of Causes. Legal Ethics.** First term. Two hours. Lectures. M., W., 10. Dean F. M. FINCH.

40. **History and Evolution of Law.** Second term. Two hours. The course at present consists of the following Lectures: 1. Intro-

ductory. 2. Rudimental Relations. 3. The Patriarchal System. 4. Possession and Tort. 5. Status and Sovereignty. 6. Transfers of Possession. 7. The Mosaic Law. 8. The Laws of Menu. 9. Lycurgus and Solon. 10. The Salic Law. 11. The Twelve Tables. 12. The Praetor and his Ethics. 13. Justinian. 14. The Coming of Contract. 15. The Roman Evolution. 16. The Anglo-Saxon Law. 17. The Feudal System. 18. Seisin. 19. Decay of Feudalism. 20. Sir Edward Coke. 21. The Common Law. M., W., 10. Dean F. M. FINCH.

Special Lectures.

The Patent Laws of the United States. *Mr. Walker.*

The Law of Shipping and Admiralty. *Judge Coxe.*

The United States Bankruptcy Act. *Mr. Gunnison.*

Examinations.

Examinations are held twice a year, at the end of each term. In order to remain in the College a student must pass each term a satisfactory examination in at least eight hours of law work, that is, work occupying eight class-room hours each week. A student in order to be registered as a junior must have satisfied all entrance conditions and passed at least twenty hours of first year work (equivalent to two class-room hours each day for the year), and to be registered as a senior must have passed all first-year work and at least twenty hours of junior work. Irregular attendance or neglect of work is sufficient cause for removal of a student from the College at any time.

College Court.

The College Court of the Junior Year is divided into clubs of ten or twelve members each. At each session a case is argued by two attorneys while the rest of the Club, presided over by a member of the Faculty, act as judges. At the conclusion of the argument the judges render oral decisions and one or more are then designated to prepare written opinions. The briefs and opinions are filed with the Librarian. The College Court of the Senior Year is a practice court held by the Professor of Procedure before whom cases are prosecuted and defended and motions and demurrers argued, in conformity with the procedure in the Supreme Court of the State of New York.

Practice Department.

It will be observed that in the above course of study the subject of Civil Procedure extends throughout the entire three years. As most students now go directly from the law school into practice with-

out serving a preliminary clerkship in a law office, it has become necessary for the law school to provide the instruction in pleading and practice which formerly the student obtained during his law office clerkship. To this end one professor and an instructor devote their entire time to the department of civil procedure. The instruction in common law and equity pleading and practice is followed by a careful study of the New York Code of Civil Procedure, which is taken as a type of the reformed procedure in force in most of the states. Pleadings and motion papers are prepared by the students. These papers are discussed freely in the class-room by students and professor, defects pointed out and remedied, and the essentials of a proper pleading, petition or other paper stated and emphasized. The study of the Code is accompanied throughout by its practical application in the preparation of procedural papers. The object is to duplicate, as far as practicable, the work of a busy office but to do it by a systematic development of the whole field of practice. Every paper passes through the hands of the professor or assistant and is carefully read and criticised before being returned to the student, while those which present an opportunity for general criticism are taken up for argument and discussion in the class-room.

It is the belief of the Faculty that this department presents on the whole a better opportunity for the systematic study of procedure than does the ordinary law office.

Courses in the Academic Department. Students in the College of Law may, with the permission of the Faculty of the College of Law and with the consent of the Academic Faculty of the University in each case, elect courses in the Academic Department, without the payment of any extra fee.

Some students who are not graduates of universities or colleges, prefer to take four years for the completion of a law course, giving ten or twelve class-room hours each week to law studies and five or more to studies in the other departments. The Law Faculty are always ready to advise such students in the selection of non-professional courses. A student electing work in the Academic Department is required to pursue the same regularly and take the prescribed examinations unless excused by the Faculty.

In the department of Elocution and Oratory special classes are formed for the benefit of members of the College of Law who desire to elect the course in Public Speaking. The following are the courses offered to law students: (1) Public Speaking; (2) Oratory; (3) Argumentation; (4) Extempore Speaking.

EQUIPMENT.

Boardman Hall. Boardman Hall is situated directly opposite the general library building and was erected for the exclusive use of the College of Law. It is a large three-story structure, 202 by 58 feet, built of Cleveland sandstone with interior finish of oak, and practically fire-proof. On the first floor are three commodious lecture rooms and necessary cloak rooms. On the second floor are the offices of the several professors and rooms for the use of the club courts. On the third floor are the library rooms with accommodations for forty thousand volumes and three hundred readers.

Law Library. The library of the College of Law numbers about 30,000 volumes to which generous additions are made yearly. It includes the well-known library of the late Nathaniel C. Moak of Albany, N. Y., which was presented in 1893 by Mrs. A. M. Boardman and Mrs. Ellen D. Williams, as a memorial to Judge Douglass Boardman, the first Dean of the College. This addition of the Moak collection to the law library makes the facilities not only unusually adequate to the needs of undergraduate students, but also in connection with the University library, affords extensive opportunity for scholarly research by advanced students. In reports of the Federal courts, reports of the several American State jurisdictions, and in English, Scotch, Irish, Canadian and Australian reports, the law library is practically complete to date. The other English speaking countries are largely represented. The library also possesses a full complement of textbooks and statutes, and complete sets of substantially all law periodicals in English.

GRADUATION FROM THE COLLEGE.

The degree of Bachelor of Laws (LL.B.) is conferred upon all students who have satisfactorily completed the prescribed work of the course. This course requires three years for its completion, and no student is allowed to graduate except after three years of actual residence unless in case of admission to advanced standing.

Certificates of Attendance. Each student who has been in regular attendance upon the college, whether entitled to a degree or not, may, on application to the Faculty, receive an official certificate of attendance which states the time of his attendance and, if desired, the degree of his attainments. Time certificates required for admission to the bar examinations in the State of New York will not be issued unless the applicant has taken at least nine hours of law work each week during the time for which such certificate is asked to be issued. No student will be certified as having completed a year unless he has fourteen

hours to his credit at least nine of which must have been taken in the year for which he asks the certificate.

SCHOLARSHIP PRIZE.

Boardman Senior Law Scholarship. A senior law scholarship of the value of one hundred dollars, the gift of Judge Douglass Boardman, the first Dean of the College, is awarded annually in June to the junior who during the preceding two years has, in the judgment of the Faculty, done the most satisfactory work in the College of Law. It is available during the senior year and is payable in the same way as other University scholarships.*

FEES AND EXPENSES.

Tuition Fees. The fee for tuition for all law students, except special students, is \$100 a year, payable, \$55 at the beginning of the first term, and \$45 at the beginning of the second term. The fee for special students in law is \$125 a year, payable, \$70 at the beginning of the first, and \$55 at the beginning of the second term.

These fees must be paid at the office of the Treasurer within twenty days after the registration day announced in the calendar.

A fee of \$5 to cover expenses of graduation, degrees, etc., is charged to each person taking the baccalaureate degree. This fee must be paid at least ten days before commencement.

Tuition is free to students with State Scholarships.

Expenses. The following is a fair estimate of the yearly expenses.

Tuition.....	\$100 to	\$125
Room, board, lights, fuel and laundry.....	160 to	325
Text-books	25 to	35
	<hr/>	<hr/>
Total.....	\$285	\$485

The additional expenses of a student depend so largely upon his personal tastes that it is difficult to give an estimate.

The expense of living in Ithaca varies, for board, room, fuel and lights, from \$4 to \$10 a week. By the the formation of clubs, students often materially reduce their expenses.

Further information upon points not covered by this announcement may be had by addressing THE COLLEGE OF LAW, CORNELL UNIVERSITY, ITHACA, N. Y.

* Awarded for 1901-1902 to Charles Tracy Staggs; for 1902-1903 to Francis Edward Swartz.

THE MEDICAL COLLEGE.

The full four-year course of the Cornell University Medical College is given in the City of New York, but the first half of it—the work of the first and second years—is also given at Ithaca, where it may be taken by men students, and where alone it can be taken by women students (for whom a home is provided in the Sage College for Women). Both men and women students must take the last two years of the course in New York City. While it is not at present required, it is highly advantageous that students entering upon the study of medicine should have had a college or university training in the liberal arts and sciences; and for the benefit of such it has been arranged that students in the Academic Department of Cornell University may elect in the Medical College certain studies, thereby shortening the time required for taking both the A.B. and M.D. degrees to seven years. See page 271. The following announcement of the Medical College except where the contrary is specifically stated refers to the course as given in New York City.

MEDICAL COLLEGE COUNCIL.

The Medical College Council consists of the President of the University; the Dean of the Medical Faculty; three members of the Board of Trustees elected by that body; and two Professors of the Medical Faculty elected by that body. The Council is charged with the business administration of the College under the supervision and direction of the Board of Trustees. For the current year it is constituted as follows:

JACOB GOULD SCHURMAN, President of the University.

WILLIAM M. POLK, Dean of the Medical Faculty.

H. W. SACKETT,

A. C. BARNES,

H. R. ICKELHEIMER,

} of the Board of Trustees.

L. A. STIMSON,

R. A. WITTHAUS,

} of the Faculty.

J. THORN WILLSON, Secretary.

FACULTY.

- JACOB GOULD SCHURMAN, A.M., D.Sc., LL.D., President, and Chairman *ex officio* of the Council.
- WILLIAM MECKLENBURG POLK, M.D., LL.D., Dean, and Professor of Gynæcology and Obstetrics, Gynæcologist to Bellevue Hospital and Obstetrician to Emergency Lying-in Hospital.
- LEWIS A. STIMSON, M.D., LL.D., Professor of Surgery, Consulting Surgeon to Bellevue Hospital and Surgeon to New York and Hudson Street Hospitals.
- RUDOLPH A. WITTHAUS, M.D., Professor of Chemistry, Physics and Toxicology.
- W. GILMAN THOMPSON, M.D., Professor of Medicine, Physician to the Presbyterian and Bellevue Hospitals.
- GEORGE WOOLSEY, M.D., Professor of Anatomy and Clinical Surgery, Surgeon to Bellevue Hospital, Associate Surgeon to the Presbyterian Hospital.
- HENRY P. LOOMIS, M.D., Professor of Materia Medica, Therapeutics and Clinical Medicine, Physician to the New York and Bellevue Hospitals.
- J. CLIFTON EDGAR, M.D., Professor of Obstetrics and Clinical Midwifery, Attending Surgeon to Maternity Hospital.
- AUSTIN FLINT, M.D., LL.D., Professor of Physiology, Consulting Physician to Bellevue Hospital, President of the Consulting Medical Board of the Manhattan State Hospital for the Insane.
- FREDERIC S. DENNIS, M.D., F.R.C.S., Professor of Clinical Surgery, Surgeon to Bellevue and St. Vincent Hospitals.
- FREDERIC W. GWYER, M.D., Professor of Operative and Clinical Surgery, Surgeon to Bellevue Hospital.
- IRVING S. HAYNES, M.D., Professor of Practical Anatomy, Surgeon to the Harlem Hospital.
- JAMES EWING, M.D., Professor of Pathology.
- JOSETH E. WINTERS, M.D., Professor of Diseases of Children, Physician to Willard Parker Hospital.
- CHARLES STEDMAN BULL, M.D., Professor of Ophthalmology, Surgeon to New York Eye and Ear Infirmary, Consulting Ophthalmic Surgeon to St. Luke's and Presbyterian Hospitals and St. Mary's Hospital for Children.
- NEWTON M. SHAFFER, M.D., Professor of Orthopædic Surgery, Surgeon-in-Chief of the New York State Hospital for the Care of Crippled and Deformed Children, Consulting Orthopædic Surgeon to St. Luke's and the Presbyterian Hospital, Consulting Surgeon to the New York Infirmary for Women and Children.

GORHAM BACON, M.D., Professor of Otology, Aural Surgeon to New York Eye and Ear Infirmary.

CHARLES L. DANA, M.D., Professor of Diseases of the Nervous System, Physician to Bellevue Hospital, Neurologist to the Montefiore Home.

SAMUEL ALEXANDER, M.D., Professor of Diseases of the Genito-Urinary System, Surgeon to Bellevue Hospital and Montefiore Home.

GEORGE THOMPSON ELLIOT, M.D., Professor of Dermatology, Assistant Physician and Pathologist to the Skin and Cancer Hospital, Consulting Dermatologist to St. Luke's, Columbus, and New York Lying-in Hospitals.

ALLAN McLANE HAMILTON, M.D., F.R.S.E., Professor of Mental Diseases, Consulting Physician, Manhattan State Hospital for the Insane.

CHARLES H KNIGHT, M.D., Professor of Laryngology, Surgeon to the Manhattan Eye and Ear Hospital, Throat Department.

ALEXANDER LAMBERT, M.D., Professor of Clinical Medicine, Instructor in Physical Diagnosis, Physician to Bellevue Hospital.

FRANCIS W. MURRAY, M.D., Professor of Clinical Surgery, Surgeon to St. Luke's and New York Hospitals.

CHARLES E. NAMMACK, M.D., Professor of Clinical Medicine, Physician to Bellevue Hospital.

FREDERICK KAMMERER, M.D., Professor of Clinical Surgery, Surgeon to the German and St. Francis's Hospitals.

PERCIVAL R. BOLTON, M.D., Professor of Clinical Surgery, Instructor in Surgery, Surgeon to the New York Hospital, Assistant Surgeon to Bellevue Hospital.

WARREN COLEMAN, M.D., Professor of Clinical Medicine, Instructor in Materia Medica, Therapeutics, and in Clinical Medicine, Assistant Attending Physician to Bellevue Hospital.

LEWIS A. CONNER, M.D., Professor of Clinical Medicine, Instructor in Medicine, Attending Physician to the Hudson Street Hospital, Assistant Pathologist to the New York Hospital.

ALEXANDER B. JOHNSON, M.D., Professor of Clinical Surgery, Surgeon to the New York Hospital.

IVIN SICKELS, M.D., Assistant Professor of Chemistry and Physics.

JOHN A. HARTWELL, M.D., Assistant Professor of Physiology and Instructor in Physiology.

Instructors.**HEADS OF SUB-DEPARTMENTS.**

- BERTRAM H. BUXTON, M.D., Instructor in Bacteriology.
 CHARLES N. BANCKER CAMAC, M.D., Instructor in Clinical Pathology, Physician to the City Hospital.
 JEREMIAH S. FERGUSON, M.D., Instructor in Histology.
 LOUIS W. RIGGS, Ph.D., Instructor in Chemistry and Physics.
 EDMUND PENDLETON SHELBY, M.D., Instructor in Pharmacology and Therapeutics.
 OTTO H. SCHULTZE, M.D., Instructor in Gross Pathology.
 WILLIAM R. WILLIAMS, M.D., Lecturer on Hygiene.

Instructors and Assistants.

- DEVER S. BYARD, M.D., Instructor in Medicine, Physician to the City Almshouse.
 WALTER ARTHUR BASTEDO, Ph.G., M.D., Instructor in Pharmacology.
 ALVIN W. BAIRD, A.B., Assistant Instructor in Physiology.
 JOHN W. COE, M.D., Assistant Instructor in Clinical Pathology.
 JOHN F. CONNORS, M.D., Assistant Demonstrator of Anatomy, Surgeon to City Almshouse.
 GEORGE EUGENE DODGE, M.D., Instructor in Operative Surgery.
 WILLIAM J. ELSER, M.D., Assistant Instructor in Pathology.
 FRANK S. FIELDER, M.D., Assistant Demonstrator of Anatomy.
 CHARLES L. GIBSON, M.D., Instructor in Surgery, Attending Surgeon to St. Luke's, City, and General Memorial Hospitals.
 GEORGE D. HAMLIN, M.D., Instructor in Obstetrics and Gynecology.
 THOMAS WOOD HASTINGS, M.D., Assistant Instructor in Clinical Pathology.
 JAMES C. JOHNSTON, M.D., Instructor in Pathology and Dermatology.
 FREDERICK L. KEAYS, M.D., Assistant Instructor in Physical Diagnosis.
 HENRY T. LEE, M.D., Assistant Instructor in Pathology.
 GUY D. LOMBARD, M.D., Assistant Instructor in Histology.
 CLARENCE A. McWILLIAMS, M.D., Assistant Demonstrator of Anatomy, Assistant Surgeon to the Presbyterian Hospital.
 R. HERBERT MACUMBER, A.B., Assistant in Chemistry.
 ANDREW H. MONTGOMERY, M.D., Assistant Demonstrator of Anatomy.

- HENRY S. PASCAL, M.D., Assistant Instructor in Histology.
JOHN ROGERS, JR., M.D., Instructor in Clinical Surgery, Surgeon to the Gouverneur Hospital.
JOSEPH C. ROPER, M.D., Assistant Instructor in Histology.
MONTGOMERY H. SICARD, M.D., Instructor in Physical Diagnosis.
MAX G. SCHLAPP, M.D., Instructor in the Histology and Pathology of the Nervous System, Physician to the City Almshouse.
LETCHWORTH SMITH, M.D., Assistant Instructor in Bacteriology.
WILLIAM F. STONE, M.D., Instructor in Anatomy and Assistant Demonstrator of Anatomy.
ALFRED E. THAYER, M.D., Assistant Instructor in Gross Pathology.
BENJAMIN T. TILTON, M.D., Instructor in Surgery and Operative Surgery, Surgeon to the Lincoln Hospital, Assistant Surgeon to Bellevue Hospital.
GEORGE GRAY WARD, M.D., Instructor in Obstetrics and Gynecology.
CHARLES G. L. WOLF, M.D., Instructor in Physiological Chemistry.

Clinical Instructors.

- JOHN ASPELL, M.D., Clinical Instructor in Gynæcology, Visiting Gynæcologist to St. Vincent's Hospital.
CHARLES C. BARROWS, M.D., Clinical Instructor in Gynæcology, Assistant Gynæcologist to Bellevue Hospital.
RUSSELL BELLAMY, M.D., Clinical Instructor in Obstetrics.
ALEXANDER DUANE, M.D., Clinical Instructor in Ophthalmology, Assistant Surgeon to the Ophthalmic and Aural Institute.
WALLER A. DUNCKEL, M.D., Clinical Instructor in Diseases of Children.
MARTIN J. ECHEVERRIA, M.D., Clinical Instructor in Diseases of the Genito-Urinary System.
FRANCIS C. EDGERTON, M.D., Clinical Instructor in Diseases of the Genito-Urinary System.
P. HENRY FITZHUGH, M.D., Clinical Instructor in Orthopædic Surgery, Assistant Surgeon, New York State Hospital for the Care of Crippled and Deformed Children.
JOSEPH FRAENKEL, M.D., Clinical Instructor in Diseases of the Nervous System, Attending Physician to Montefiore Home.
WILLIAM TRAVIS GIBB, M.D., Clinical Instructor in Gynæcology.
ISIDORE L. HILL, M.D., Clinical Instructor in Obstetrics.
WILLIAM HIRSCH, M.D., Clinical Instructor in Mental Diseases.
ARCHIBALD E. ISAACS, M.D., Clinical Instructor in Surgery.

- THURSTON G. LUSK, M.D., Clinical Instructor in Dermatology.
 ALBERTUS A. MOORE, M.D., Clinical Instructor in Obstetrics.
 JAMES E. NEWCOMB, M.D., Clinical Instructor in Laryngology.
 ROBERT G. REESE, M.D., Clinical Instructor in Ophthalmology,
 Assistant Surgeon to the New York Eye and Ear Infirmary, Ophthalmic Surgeon to the Workhouse and Almshouse Hospitals.
 GUSTAVE SEELIGMANN, M.D., Clinical Instructor in Obstetrics.
 WILLIAM SHANNON, M.D., Clinical Instructor in Diseases of Children.
 FRANCIS E. SHINE, M.D., Clinical Instructor in Diseases of the Genito-Urinary System.
 FRANKLIN M. STEPHENS, M.D., Clinical Instructor in Otology, Assistant Surgeon to the New York Eye and Ear Infirmary.
 NEWTON B. WALLER, M.D., Clinical Instructor in Diseases of the Genito-Urinary System.
 HENRY H. WHITEHOUSE, M.D., Clinical Instructor in Dermatology, Clinical Assistant to the New York Skin and Cancer Hospital, Dermatologist to Demilt Dispensary.
 JOHN MCGAW WOODBURY, M.D., M.R.C.S., Clinical Instructor in Orthopædic Surgery.

Clinical Assistants.

- ROBERT STAUNTON ADAMS, M.D., Clinical Assistant in Diseases of Children, Attending Physician to Children's Class, Demilt Dispensary.
 HENRY M. ARCHER, M.D., Clinical Assistant in Surgery.
 FRANK T. BURKE, M.D., Clinical Assistant in Laryngology.
 EARLE CONNER, M.D., Clinical Assistant in Otology, Assistant Surgeon to New York Eye and Ear Infirmary.
 ROBERT M. DALEY, M.D., Clinical Assistant in Diseases of the Nervous System.
 GEORGE SLOAN DIXON, M.D., Clinical Assistant in Otology, Curator and Assistant Pathologist to New York Eye and Ear Infirmary.
 SAMUEL M. EVANS, M.D., Clinical Assistant in Diseases of Children, Attending Physician to Children's Class, Demilt Dispensary.
 JAMES P. FISKE, M.D., Clinical Assistant in Orthopædic Surgery.
 LESTER M. HUBBY, M.D., Clinical Assistant in Diseases of Children.
 J. RAMSAY HUNT, M.D., Clinical Assistant in Diseases of the Nervous System.
 WILLIAM J. JONES, M.D., Clinical Assistant in Therapeutics.
 WALTER C. KLOTZ, M.D., Clinical Assistant in Diseases of the Genito-Urinary System.

CHARLES MACK, M.D., Clinical Assistant in Laryngology.

JOHN ENGLISH McWHORTER, M.D., Clinical Assistant in Diseases of the Genito-Urinary System.

LOUIS NEUMANN, M.D., Assistant in Physiology.

HENRY SCOTT, M.D., Clinical Assistant in Orthopædic Surgery, Assistant Surgeon to the New York State Hospital for the Care of Crippled and Deformed Children.

GEORGE DE FOREST SMITH, M.D., Clinical Assistant in Mental Diseases.

WILLIAM F. STONE, M.D., Clinical Assistant in Surgery.

HORACE S. STOKES, Clinical Assistant in Diseases of Children.

FRANK CLARK YEOMANS, M.D., Clinical Assistant in Diseases of the Genito-Urinary System.

Dispensary Staff.

DEPARTMENT OF GENERAL MEDICINE (INCLUDING HEART AND LUNGS).

CHARLES N. B. CAMAC, M.D., Attending Physician.

JOHN W. COE, M.D., Assistant Attending Physician.

MONTGOMERY H. SICARD, M.D., Assistant Attending Physician.

THEODORE B. BARRINGER, M.D., Assistant Attending Physician.

WILLIAM J. JONES, M.D., Assistant Attending Physician.

THOMAS W. HASTINGS, M.D., Assistant Attending Physician.

WILLIAM ARMSTRONG, M.D., Assistant Attending Physician.

FREDERICK L. KEAYS, M.D., Assistant Attending Physician.

WILLIAM R. STONE, M.D., Assistant Attending Physician.

JOSIAH P. THORNLEY, M.D., Assistant Attending Physician.

DEPARTMENT OF SURGERY.

WILLIAM F. STONE, M.D., Attending Surgeon.

GEORGE M. CREEVY, M.D., Attending Surgeon.

GEORGE EUGENE DODGE, M.D., Assistant Attending Surgeon.

LEWIS G. COLE, M.D., Assistant Attending Surgeon.

ARTHUR L. SHERRILL, M.D., Assistant Attending Surgeon.

DEPARTMENT OF OBSTETRICS AND GYNÆCOLOGY.

GEORGE D. HAMLIN, M.D., Attending Gynæcologist.

GEORGE G. WARD, M. D., Attending Gynæcologist.

CHARLES E. CARTER, M.D., Assistant Attending Gynæcologist.

EDWARD W. PETERSON, M.D., Assistant Attending Gynæcologist.

DEPARTMENT OF GENITO-URINARY DISEASES.

FRANCIS E. SHINE, M.D., Attending Surgeon.
 NEWTON B. WALLER, M.D., Attending Surgeon.
 JOHN ENGLISH McWHORTER, M.D., Assistant Attending Surgeon.
 WALTER C. KLOTZ, M.D., Assistant Attending Surgeon.
 FRANCIS C. EDGERTON, M.D., Assistant Attending Surgeon.
 FRANK CLARK YEOMANS, M.D., Assistant Attending Surgeon.

DEPARTMENT OF NEUROLOGY.

JOSEPH FRAENKEL, M.D., Attending Physician.
 ROBERT M. DALEY, M.D., Assistant Attending Physician.
 J. RAMSAY HUNT, M.D., Assistant Attending Physician.

DEPARTMENT OF PEDIATRICS.

WALTER A. DUNCKEL, M.D., Attending Physician.
 WILLIAM SHANNON, M.D., Attending Physician.
 ROBERT S. ADAMS, M.D., Assistant Attending Physician.
 H. S. STOKES, M.D., Assistant Attending Physician.
 NESTOR PONCE DE LEON, M.D., Assistant Attending Physician.
 ALBERT EWING CHILDS, M.D., Assistant Attending Physician.

DEPARTMENT OF DERMATOLOGY.

JAMES C. JOHNSTON, M.D., Attending Surgeon.
 THURSTON G. LUSK, M.D., Attending Surgeon.
 EDWARD PISKO, M.D., Assistant Attending Surgeon.

DEPARTMENT OF OTOLOGY.

FRANKLIN M. STEPHENS, M.D., Attending Surgeon.
 GEORGE S. DIXON, M.D., Attending Surgeon.

DEPARTMENT OF LARYNGOLOGY.

JAMES E. NEWCOMB, M.D., Attending Surgeon.
 FRANK T. BURKE, M.D., Assistant Attending Surgeon.
 CHARLES MACK, M.D., Assistant Attending Surgeon.
 EDWARD J. CONNELL, M.D., Assistant Attending Surgeon.
 WILLIAM ROSENTOHN, M.D., Assistant Attending Surgeon.

DEPARTMENT OF ORTHOPÆDICS.

P. HENRY FITZHUGH, M.D., Attending Surgeon.
 JOHN MCGAW WOODBURY, M.D., Attending Surgeon.

HENRY SCOTT, M.D., Assistant Attending Surgeon.
 DEAS MURPHY, M.D., Assistant Attending Surgeon.
 JAMES P. FISKE, Assistant Attending Surgeon.

DEPARTMENT OF OPHTHALMOLOGY

ROBERT G. REESE, M.D., Attending Surgeon.
 ALEXANDER DUANE, M.D., Attending Surgeon.
 G. W. VANDERGRIFF, M.D., Assistant Attending Surgeon.
 J. H. HONNETT, M.D., Assistant Attending Surgeon.
 T. L. MIDDLETON, M.D., Assistant Attending Surgeon.

Secretary of the Faculty—JOHN ROGERS, JR., M.D.

Clerk of the College—J. THORNE WILLSON, First Avenue, 27th
 and 28th Streets.

Staff of Instruction at Ithaca.

GEORGE CHAPMAN CALDWELL, B.S., Ph.D., Professor of General Chemistry and Agricultural Chemistry.
 BURT GREEN WILDER, B.S., M.D., Professor of Neurology, Vertebrate Zoology, and Physiology.
 EDWARD LEAMINGTON NICHOLS, B.S., Ph.D., Professor of Physics.
 SIMON HENRY GAGE, B.S., Professor of Histology and Embryology.
 VERANUS ALVA MOORE, B.S., M.D., Professor of Comparative Pathology and Bacteriology.
 LOUIS MUNROE DENNIS, Ph.B., B.S., Professor of Inorganic and Analytic Chemistry.
 JOSEPH ELLIS TREVOR, Ph.D., Professor of General Chemistry and Physical Chemistry.
 PIERRE AUGUSTINE FISH, D.Sc., D.V.M., Professor of Comparative Physiology and Pharmacology.
 GEORGE SYLVANUS MOLER, A.B., B.M.E., Assistant Professor of Physics.
 WILLIAM RIDGELY ORNDORFF, A.B., Ph.D., Assistant Professor of Organic and Physiological Chemistry.
 BENJAMIN FREEMAN KINGSBURY, A.B., Ph.D., Assistant Professor of Physiology. (Absent in Europe.)
 ABRAM TUCKER KERR, B.S., M.D., Assistant Professor of Anatomy.

- EMILE MONNIN CHAMOT, B.S., Ph.D., Assistant Professor of Chemistry and Toxicology.
- LUZERNE COVILLE, B.S., M.D., Lecturer on Surgery.
- PAUL RICHARD BROWN, M.D., Lecturer on Medicine and Obstetrics.
- HOMER JAMES HOTCHKISS, A.M., M.M.E., Instructor in Physics.
- JOHN SANDFORD SHEARER, B.S., Ph.D., Instructor in Physics.
- BERT BRENETTE STROUD, D.Sc., Instructor in Physiology, Vertebrate Zoology, and Neurology.
- THEODORE WHITTLESEY, A.B., Ph.D., Instructor in Chemistry.
- HENRY ROSE JESSEL, B.S., Ph.D., Instructor in Chemistry.
- SAMUEL HOWARD BURNETT, A.B., M.S., Instructor in Comparative Pathology and Bacteriology.
- JOHN EDGAR TEEPLE, B.S., Instructor in Chemistry.
- AUGUSTUS GROTE POHLMAN, M.D., Instructor in Anatomy, (Absent in Europe).
- BENSON A. COHOE, B.A., M.B., Instructor in Anatomy.
- WILLIAM J. ABBOTT, B.A., M.D., Instructor in Anatomy.
- HUGH DANIEL REED, B.S., Instructor in Economic and Systematic Zoology.
- WILLIAM CROOKS THRO, A.M., Instructor in Histology and Embryology.
- LAWRENCE HENDEE, A.B., M.D., Assistant Demonstrator of Anatomy.
- J. RALPH HARRIS, A.B., M.D., Assistant Demonstrator of Anatomy.
- GEORGE HOWARD BURROWS, B.S., Assistant in Chemistry.
- CHARLES ORVILLE WAITE BUNKER, B.S., Assistant in Comparative Physiology and Materia Medica.
- BERT RAYMOND HOUBLER, B.S., Assistant in Comparative Physiology and Materia Medica.
- WILLIAM ATWOOD HILTON, Ph.D., Assistant in Histology and Embryology.
- OSCAR PERCY JOHNSTON, Ph.B., Assistant in Comparative Physiology and Materia Medica.
- GERSHOM FRANKLIN WHITE, B.S., Assistant in Bacteriology.
- WILLIAM FREDERICK WISMAR, A.B., Assistant in Histology and Embryology.
- JOSEPH HEYWOOD RUSSELL, A.B., Assistant in Chemistry.
- JAY EMERY ROOT, A.B., Assistant in Chemistry.
- ROY EDWARD FOWLER, B.S., Assistant in Chemistry.

WILLIAM CHAUNCEY GEER, A.B., Assistant in Chemistry.
ARTHUR GORDON RUGGLES, B.S.A., Assistant in Bacteriology.
BERT RAYMOND WILBUR, Assistant in Comparative Physiology
and Materia Medica.

Secretary of the Faculty at Ithaca--ABRAM T. KERR, B.S., M.D.

ADMISSION TO THE COLLEGE.

For admission to the first year class at Ithaca communications should be addressed to the Registrar, Ithaca, N. Y., at New York City, to the Secretary, 28th St. and First Ave., New York City. See below and pages 45 and 261.

For admission to advanced standing from other colleges and universities, and as special, at Ithaca, communications should be directed to Secretary of Faculty of Medicine, Ithaca, N. Y.; at New York City, communications should be addressed to the Secretary of the College, 28th St. and First Ave., New York City.

Requirements for Admission.

The laws of New York State require of the prospective student of medicine a preliminary education equivalent to that obtainable in a four years' course in any of the public high schools recognized by the Regents as maintaining a satisfactory standard, before the applicant can be admitted to any class in any medical college in the State. A list of the subjects ordinarily taught in these schools is given in a handbook published by the Regents, and mailed on application to the "Regents' Office, Examination Department, Albany, N. Y." In this it will be found that each subject, according to its character and the time usually devoted to it, is assigned one or more "counts," 48 of which are needed to obtain the medical-student certificate. This official approval of the preliminary education may be granted by the Regents on presentation to them of properly attested evidence that the requisite work has been accomplished in some institution known to them. In lieu of this the applicant is required to pass the examinations conducted by the State authorities at regular intervals throughout the year. If the certificate is obtained without examinations, it is granted on "equivalents."

Hitherto the Medical Department of Cornell University has been open to all who held the 48 count certificate. As this can be obtained with little or no knowledge of the English language, and of subjects

which are absolutely essential to a proper understanding of any natural science, the Faculty has decided that beginning with the class entering in October, 1902, all applicants for admission must earn their medical-student certificate in part upon the following subjects, as described in the Regents' "Handbook No. 3, High School Department, Examinations" :

Algebra	4 counts.
Plane Geometry	4 "
Elementary United States History and Civics.....	2 "
Second-Year English, or its equivalent.....	8 "
Second-Year Latin, or the first four books of Cæsar's "Commentaries," or First-Year Latin and First-Year German, French, or Spanish.....	8 "
	—
	26 counts.

The subject-matter covered in these requirements, which must be included in the Regents' certificate, is briefly summarized as follows :

Algebra includes the elements of the subject through quadratic equations.

Plane Geometry includes the geometry of the plane, the ordinary definitions, and demonstrations of simple original theorems.

Elementary United States History and Civics includes important historical dates, the character and purpose of the different wars, the purport of the Constitution, and the relation of the Federal and State governments.

Second-Year English comprises (1) composition, including the theory of construction in prose ; (2) terms of style, figures of speech, and prosody ; (3) literature, *i. e.*, a knowledge of "Twice-Told Tales," "Sir Roger de Coverley" papers, "Sesame and Lilies," "Ancient Mariner," "Cotter's Saturday Night," "Vision of Sir Launfal," "Silas Marner," "Julius Cæsar," "First Bunker Hill Oration."

Second-Year Latin includes a knowledge of grammar and the ability to translate at sight simple passages from any standard author, or from the first four books of Cæsar's "Commentaries." The alternative to Second-Year Latin, namely, First-Year Latin with First-Year German, French, or Spanish, comprises under the heading First-Year Latin a knowledge of grammar, the rendering of simple prose from Latin into English, and *vice versa*. Under the heading of First-Year German, French, or Spanish, a similar knowledge is required.

The total number of counts allowed by the Regents for these required subjects aggregate 26. The Faculty recommends that the remaining 22 counts necessary to complete the certificate be made up

from the following subject-groups enumerated in the Handbook: Science ; Mathematics ; Language and Literature ; History and Social Science.

Students who can earn a portion of these 22 counts upon Physics and Inorganic Chemistry, as is earnestly recommended, may be given credit for them, and the time thus gained will be devoted to intensive work in the medical branches.

As heretofore, those applicants who have successfully completed the first year in any academic college recognized by the Regents as maintaining a proper standard will be admitted to the first year of the medical course on presentation of the usual Regents' certificate, together with evidence of their year or years of college training. Attention is again called to the fact that the Medical College holds no entrance examinations, and therefore the applicant for admission must, except in the case of those who have had one or more years in an academic college, present the Special Cornell Medical-College Certificate granted by the Regents to those who have fulfilled the requirements, or must have the Regents' endorsement on the certificate that the requirements have been complied with.

Proposed Course for the Degree in Arts (A.B.) and in Medicine (M.D.)

As a liberal education in the arts and sciences is of great advantage to prospective students of medicine, all who can are urged to take the Freshman, Sophomore, and Junior years in the Academic Department at Ithaca. After the completion of these years in the Academic Department (in which all the work is elective) the student is permitted to elect, as the fourth year of his A.B. course and first year of his M.D. course, a year's work in the Medical Department at Ithaca. He may then take his fifth year of work—the second of the medical course—either in Ithaca or in New York ; but he must take the last two years of the medical course in New York. In this way he will obtain the A.B. degree at the end of four years, and the M.D. degree at the end of seven years of study. This is possible because the first two years of the medical course are offered in duplicate at the University in Ithaca.

Women must take the first two years in medicine in Ithaca, where special accommodations are provided for them in the Sage College. They are received at the Medical College in New York City in the third and fourth years only.

Students who have taken the A.B. degree, as above, will, if they have anticipated in the Academic Department the scientific studies

prescribed in the medical course, be admitted to advanced standing in the Medical College in New York. Those who have completed all the subjects prescribed for the first two years of the course in medicine will be admitted to the third-year class. After passing the requisite examinations at the end of this and then of the fourth year, they will be advanced to practically a fifth year, consisting almost entirely of practical training. At its close, providing the work has been satisfactory, the M.D. degree will be conferred. As this fifth year gives opportunity for more than the requisite work, students who have taken the A.B. degree in the Academic Department may, even if deficient in one or more of the prescribed subjects of the medical course, still be admitted to the third-year class in New York, but only upon the recommendation of the Medical Faculty at Ithaca.

The schedule of this fifth year will be somewhat as follows :

There will be weekly recitations in the subjects of Medicine, Surgery, Anatomy, Materia Medica and Therapeutics, and Obstetrics and Gynæcology. A competent corps of instructors is suggested by the Faculty, but the students are at liberty to make their own selection and financial arrangements in quizzing, the chief object of which is preparation for the competitive examinations for the appointment of internes held each spring by the various hospitals. The fee for such "quizzes" averages about \$100, and the time will be from 5 to 6 P. M., or at any other convenient hour daily. The rest of the day is to be devoted to practical training in the College dispensary and laboratories. In the dispensary the departments of general medicine and general surgery hold, or are to hold, morning sessions. The afternoon hours are devoted to the nine specialty departments of Neurology, Gynæcology, Pediatrics, Laryngology, Orthopedic Surgery, Dermatology, Ophthalmology, Otology, and Diseases of the Genito-Urinary System.

The Ithaca students who take this fifth year will act as regularly appointed clinical assistants in these various departments for the twelve months following the conclusion of their fourth year of medicine. Groups of five will serve during the morning hours, on alternate days, in the Departments of General Medicine and Surgery. At the end of six months those who have had the privilege of selecting in the order of standing at the end of the fourth year general medicine will change to general surgery, and *vice versa*. In the mornings of the days when not engaged in the dispensary these groups of five students will report in one of the laboratories of clinical or histological pathology or bacteriology and, as they may elect, either pursue research work upon a subject to be selected after consultation with

Professor Ewing, or act as assistant (unpaid) instructors in the classroom work in these laboratories. The results of research work, if satisfactory, will be included in the regular publications of the department of Pathology.

During the afternoons, groups of not more than three students will serve in rotation as clinical assistants in each of the nine specialty departments of the dispensary. The length of time spent in each department will vary somewhat with the number of students and the duration of vacation desired; but at present it is expected that about one month will be devoted to daily attendance in each specialty. It is the intention of the Faculty to allow the utmost liberty in the selection of courses consistent with the acquirement of a thorough general and practical education. For this reason, if desired, the student will be assisted in obtaining the position of clinical assistant in any dispensary or department of a dispensary which supplies opportunities equivalent to those offered by the College. The internes in the various city hospitals are often forced to absent themselves from duty on account of sickness or other reasons. The members of the Faculty who visit such hospitals can thus frequently supply substitutes from competent students for longer or shorter periods. Such places, of course, cannot be promised in advance, but may confidently be expected by a greater or less number.

The required work of this fifth year is then briefly summarized as follows :

A quiz of at least one hour a week in each of the subjects of Medicine, Surgery, Anatomy, Materia Medica and Therapeutics, and Obstetrics and Gynæcology from October to April inclusive. At least two hours' daily service for four months each (preferably in the morning) in general medicine and general surgery in the College dispensary; at least two hours' daily service for one month (preferably in the afternoon) in each of the nine specialty departments of the College. If any of the work is elected in another dispensary or hospital, it must be one under the supervision of some member of the Faculty.

The fees for this year will be \$100, payable in advance to the College; and a graduation fee of \$25, payable at the end of the fifth year; and the fee payable to the quiz masters, of not more than \$100.

(1) ADMISSION TO ADVANCED STANDING IN THE FIRST YEAR.— Graduates of Cornell, Yale, Harvard, Princeton, University of Pennsylvania, Johns Hopkins, Columbia, University of Michigan and other accredited universities, who have taken either a preparatory medical course or special work in organic and inorganic chemistry, physics, or physiology, will be allowed credit for the work which they have done

and may be excused from the recitations upon these subjects, and from the exercises of the chemical laboratory in the first year, provided they pass examinations before the professors of those departments, and provided they give to dissection and section work, in various departments, a full equivalent in hours to the subjects they may have passed by examination. These examinations are held at the opening of the session.

Students who have had training in microscopical technique or in histology will be given advanced work in the histological laboratory.

Students who have already attended the requisite number of courses in other accredited medical colleges may be admitted to advanced standing in any one of the years of the four years' course of the Cornell University Medical College by presenting a Regents' medical students' certificate and by passing examinations in the subjects described below as completed, in the year or years previous to that which the student desires to enter. The applicant must also present certificates of having satisfactorily completed laboratory courses equivalent to those required of the Cornell medical students in the year or years previous to that to be entered.

According to a law governing the Regents of the State of New York, no student from an unregistered Medical School may obtain a degree on less than two years of medical study in the state.

(2) HOLDERS OF SPECIAL DEGREES.—Graduates of pharmacy or of dental or veterinary or other professional schools, who can present satisfactory evidence of having completed any course of study required in any year of the Cornell Medical College, may upon passing a satisfactory examination be excused from attendance upon instruction in that subject, provided they take equivalent additional work in other branches.

(3) ADMISSION TO SPECIAL COURSES.—Graduates in medicine, or students who desire to pursue a special course without graduation, are admitted to registration as special students, after approval by the head of the department conducting the course, without Regents' or other preliminary examination. Such special courses do not count in any way as part of the four-years' course, required of candidates for the degree of doctor in medicine. Further information regarding such courses, fees, etc., may be obtained by addressing the Secretary of the Cornell University Medical College, Twenty-eighth Street and First Avenue, New York City.

REQUIREMENTS FOR ADVANCEMENT IN COURSE.

Students are advanced in course from one year to the next upon passing examinations in the work of that year. As in the academic department of the University, the work of each year is considered final of itself. There is no unnecessary repetition of subjects taught from year to year. Students who have not succeeded in passing all their examinations will not be allowed to enter upon the next year's studies, until the conditioned subjects have been made up.

Examinations for advancement in course, graduation and admission to advanced standing are held at the close of the year on the work of the year. In each laboratory course extending through a part of the year only, the examination is held at the close of the course.

Examinations for conditioned students and those desiring admission to advanced standing who have not taken the spring examinations are held during the first fortnight of the fall term.

The subjects examined upon are divided into major and minor subjects, and a standing of 75 per cent. is required to pass.

The minor subjects embrace laboratory courses and those in which instruction is given by recitation only.

Subjects of Examination for Admission to the Second Year.

Major Subjects—Anatomy (except the nervous system, viscera and organs of special sense).

Physics, Inorganic Chemistry.

Physiology (except the nervous system and organs of special sense).

Minor Subjects—Histology (except the nervous system and organs of special sense).

Laboratory Inorganic Chemistry.

Conditions allowed (at the spring examination): 1 Major and 1 Minor; or 2 Minor.

NOTE 1. In each of the laboratory courses of the first and subsequent years, students whose marks fall below a certain percentage will be allowed one re-examination within two weeks of the completion of the course, failing in which they must repeat the laboratory course with the next succeeding section.

Students whose marks fall below this percentage in the chemical laboratory cannot be re-examined, but must repeat the course with the next succeeding section.

NOTE 2. In each of those branches in which recitations are held throughout the year, there shall be a written review conducted by the

instructor and supervised by the professor in charge of the department, and also a final written review conducted by the professor himself at the close of the year. The written review, conducted by the Instructor, shall be held as soon as possible after the return from the Christmas vacation and shall count as a single recitation, the object being to ascertain the knowledge acquired by the student.

NOTE 3. All conditions must be successfully passed before entrance into the next succeeding year will be allowed.

Subjects of Examination for Admission to the Third Year.

Major Subjects—Anatomy.

Organic Chemistry.

Physiology.

Minor Subjects—Medicine.

Surgery.

Obstetrics.

Bacteriology.

Normal Histology (central nervous system and organs of special sense).

Pathology.

Pharmacology.

Laboratory Organic Chemistry.

Conditions allowed: 1 Major and 1 Minor; or 2 Minor subjects.

(See Notes 1, 2 and 3).

Subjects of Examination for Admission to the Fourth Year.

Major Subjects—Materia Medica.

Toxicology.

Pathology.

Minor Subjects—Obstetrics and Gynæcology.

Medicine.

Surgery.

Gross Pathology.

Clinical Pathology.

Conditions allowed: 1 Major and 1 Minor; or 2 Minor.

(See Notes 1, 2 and 3).

Subjects for Examination for Graduation at the end of the Fourth Year.

Medicine.

Surgery.

Pediatrics.

Neurology.

} Clinical Paper.

Obstetrics and Gynæcology.

Therapeutics.

Special Subjects—	{	Hygiene.	}	Clinical Paper.
		Ophthalmology.		
		Neurology.		
		Laryngology and Rhinology.		Clinical Paper.
		Orthopædics.		
		Pediatrics.		
		Pathology (general).		Clinical Paper.
		Mental Diseases.		
		Otology.		
		Dermatology.		

Students conditioned in only one subject at the end of the fourth year will be given an opportunity to make up the condition within two weeks. If the second examination is satisfactory, the degree may be received at the Commencement at Ithaca.

Those conditioned in more than one subject or who fail to pass in the second examination just mentioned, must repeat the work of the fourth year.

REQUIREMENTS FOR THE DEGREE OF M.D.

1. Candidates for the degree of doctor of medicine must have studied medicine for four full years in an accredited and registered medical college, and the fourth year at least must have been spent in the Cornell University Medical College.

2. Candidates must present satisfactory evidence of good moral character and of being not less than twenty-one years of age.

3. Candidates must file with the Secretary of the Faculty the Regent's Medical Student's certificate as evidence of having complied with the requirements for admission (see pages —).

4. Candidates must have dissected at least seven parts in anatomy. They must further have taken the regular course of two weeks in practical obstetrical work.

5. In addition to the yearly examinations above specified for advancement in course, candidates must pass, at the end of the fourth year, examinations in medicine, therapeutics, surgery, obstetrics, and gynæcology, and the special branches as specified.

6. Candidates rejected at the final examination will not be reëxamined until after having completed their fourth year of study.

7. The degree will not be conferred upon any candidate who absents

himself from the Public Commencement without the special permission of the Faculty.

8. The Faculty reserves the right to terminate the connection of any student with the institution *at any time* on the ground of what they may deem moral or mental unfitness for the profession, or improper conduct while connected with the College.

REQUIREMENTS FOR LICENSE TO PRACTICE MEDICINE IN NEW YORK STATE.

All requirements for admission should be filed at least one week before examination. They are as follows:

1. Evidence that applicant is more than twenty-one years of age (Form 1.).

2. Certificate of moral character from not less than two physicians in good standing (Form 2.).

3. Evidence that the applicant has the general education required preliminary to receiving the degree of bachelor or doctor of medicine in this State (medical student's certificate. See examination handbook of the Regents).

4. Evidence that applicant has studied medicine not less than four full school years of at least nine months each, in four different calendar years, in a medical school registered as maintaining at the time a satisfactory standard. New York medical schools and New York medical students shall not be discriminated against by the registration of any medical school out of the State, whose minimum graduation standard is less than that fixed by statute for New York medical schools.

First exemption "The Regents may, in their discretion, accept as the equivalent for any part of the third and fourth requirement, evidence of five or more years practice of medicine, provided that such substitution be specified in the license."

5. Evidence that applicant "has received the degree of bachelor or doctor of medicine from some registered medical school, or a diploma or license conferring full right to practice medicine in some foreign country" (Form 3 of original credentials).

6. The candidate must pass examinations in anatomy, physiology and hygiene, chemistry, surgery, obstetrics, pathology, and diagnosis, therapeutics, practice and materia medica. The questions "shall be the same for all candidates, except that in therapeutics, practice and materia medica, all the questions submitted to any candidate shall be chosen from those prepared by the board selected by that candidate

and shall be in harmony with the tenets of that school as determined by its State Board of Medical Examiners."

Second exemption : " Applicants examined and licensed by other State examining boards registered by the Regents as maintaining standards not lower than those provided by this article, and applicants who matriculated in a New York State medical school before June 5, 1890, and who received the degree of M.D. from a registered medical school before August 1, 1895, may, without further examination, on payment of \$10 to the Regents and on submitting such evidence as they may require, receive from them an indorsement of their licenses or diplomas, conferring all rights and privileges of a Regents' license issued after examination."

7. A fee of \$25 payable in advance.

Final Examinations in the Subjects of the First and Second Years.

A law passed at the last session of the legislature permits students to take part of their examinations for the license to practice medicine in this State at the end of the second year. The Regents have, therefore, published a notice that examinations in anatomy, physiology, hygiene, and chemistry will be held for students who have completed the second year of their medical course. The applicant must be more than nineteen years of age, of good moral character, have the requisite preliminary education required by law, and pay a fee of \$25.

Diplomas of Licentiate of the Royal College of Physicians of London and Membership of the Royal College of Surgeons of England.

Graduates of the Cornell University Medical College are admitted to the final examination for the diploma of Licentiate of the Royal College of Physicians of London and Membership of the Royal College of Surgeons of England, upon presenting proper certificates that certain conditions applicable to the foreign universities and colleges which are recognized by the examining board have been complied with.

Further information may be obtained from the Secretary of the Board (Mr. F. G. Hallett) at the Examination Hall, Victoria Embankment, London, W. C.

Prizes.

The Harriet Crocker Alexander prizes, the first of \$150, the second of \$50, are awarded, the first to the student having the highest record, the second to the student having the next highest record in the Grad-

uating Class. A friend of the college whose name is withheld by request, has entrusted to the Dean enough money to increase this second prize to \$100 and to add a third prize of \$50. The prizes were awarded this year as follows : Benjamin William Zipser, First prize ; Harry Isaac Johnston, Second Prize ; Edward Raymond Hildreth, Third Prize.

A prize consisting of a case of instruments was presented by Prof. Bacon to the student with the best record in the subject of otology. The recipient was Charles Melvin Mix.

HOSPITAL APPOINTMENTS.

The students and graduates of the Cornell University Medical College are entitled to compete on equal terms with those of other colleges for positions on the resident staff of Bellevue Hospital and the other hospitals of the city.

Some of these hospitals are : The City, Harlem, Gouverneur, New York, St. Luke's, Presbyterian, St. Vincent's, St. Francis's, Mount Sinai, German, and Hudson Street hospitals, New York Eye and Ear Infirmary, and the hospitals in Brooklyn and Jersey City, Newark, Paterson, etc.

The requirements, the times of examination, and the period or service differ. The details can be learned by application, written or in person to the superintendents or the secretaries of the medical boards of the various hospitals.

GENERAL STATEMENT OF THE PLAN OF INSTRUCTION.

The chief features in the scheme of instruction are through laboratory training in all the subsidiary branches, daily recitations from standard text-books, clinical teaching in dispensaries and at the bedside in hospitals, and enough didactic lectures to make clear the general principles and conflicting theories in the practice of medicine and surgery. All students in any one class advance simultaneously in the various subjects and no section or group works apart from any other, thereby losing the opportunity to appreciate the relationship of the different matters which at any given time may be under discussion. Allowance, however, has been made for those who through natural endowments or superior energy or previous education can outstrip their less fortunate fellows. A careful record is kept of the attendance and character of the work of every student, and by this means at the end of the year each is placed in the section to which this record en-

titles him. A system of electives in clinical, laboratory, and recitation work is also provided, which it is the aim of the Faculty to enlarge as opportunities arise. A student is required to master all the subjects taught in any given year before being allowed to advance to the next, as the knowledge acquired in each year is necessary for a proper understanding of that which follows. Examinations are held at the end of each session; a failure to pass not more than two subjects, one of which at least must be a laboratory subject, is allowed in the spring, but every subject must be satisfactorily passed at the beginning of the next ensuing college year, or the applicant will be compelled to repeat the work of the preceding year. The following is a statement of the curriculum in each of the four annual sessions necessary to obtain the degree of M.D., and attention is called to the careful arrangement of the instruction in time and correlation in subject-matter so as to provide for a proper understanding and assimilation of the knowledge imparted in the different departments.

The essential feature of the entire system is the division of the classes of the several years into small sections for recitations, demonstrations, laboratory exercises, dispensary visitations, and ward work in the hospitals.

The first year is devoted to anatomy, several consecutive uninterrupted hours being provided for dissection—embryology, normal histology, chemistry and physics. The gross anatomy of the thoracic, abdominal, and pelvic viscera is demonstrated in outline in the early weeks of the session in anticipation of the examination of these organs in the histological laboratory. At the same time the department of Physiology presents for consideration the cell, the blood, the circulation, respiration, digestion, absorption, secretion and excretion in the order named. Thus the study of gross and histological anatomy and physiology advance together and in correlation with each other.

The general principles of mechanics, hydrostatics, optics, electricity, heat and acoustics, and their application to medicine are taught in lectures illustrated by experiments. Inorganic chemistry is studied in the laboratory throughout the year. The class is divided into small sections, each of which must attend daily one or more recitation exercises in anatomy, histology, physiology and chemistry. These follow as closely as possible the practical work.

Students who have had the advantage of a thorough preliminary education in physics and chemistry before entering the medical school, after satisfactorily demonstrating to the professor in charge of this department, by examination or otherwise, that they are familiar with the work of the first year, may be excused from attendance upon

physics and chemistry. In place of these subjects they must elect at least one of the following courses given in the second year—namely, laboratory pharmacology, or physiological chemistry, or bacteriology.

During the second year anatomy, physiology and chemistry are completed, except as they are reviewed in recitations during the fourth year preparatory for the State examinations, and the study in text-books of medicine, surgery, obstetrics and pathology is begun. The gross anatomy of the organs of special sense, and then that of the nervous system, are taught at the outset of the year by demonstrations to small groups of students. The demonstration of these organs is followed as closely as possible by the study of them in the histological laboratory during the first half of the session. The lectures and recitations in physiology follow the same course and being antedated by the study of the gross and histological aspects of the parts under discussion are capable of easy comprehension. Organic and physiological chemistry is studied in the laboratory and by lectures and recitations throughout the year. At the same time a laboratory course in pharmacology is pursued, familiarizing the student with the physical and chemical properties of drugs. Bacteriology is begun, the student commencing with the preparation and care of media and the recognition of the gross and microscopical characteristics of micro-organisms.

During the first few weeks of the term, lectures are delivered upon the general principles of pathology, with particular reference to the elucidation and classification of the various forms of inflammation. The substance of these lectures will form the basis of the subsequent instruction in this subject in all the departments, and thus insure uniformity in the teaching and understanding of the causes of disease. These lectures are supplemented by autopsies before small sections to demonstrate gross lesions. Several weeks are given to practical instruction in normal physical signs as applied to the chest. Having obtained some knowledge of pathology, the student by means of recitations is made familiar with the principles of surgery, medicine and obstetrics.

Students who have completed elsewhere courses in physiological chemistry or pharmacology equivalent to those of the second year, may by passing examinations at the beginning of the term be excused from further attendance upon them.

Students thus excused from part of the second-year work and those who have been allowed electives in their first year, may take one or more of the following elective courses during their second year—namely: 1. Bacteriology in its practical relation to disease. 2. *Materia medica* recitations in the third year. 3. Manikin course in ob-

stetrics. 4. Obstetrical clinic. The two latter elective courses are in preparation for the required work in practical obstetrics, which, usually taken in the third, can thus be taken during the second summer if desired.

In the third year medicine, surgery, materia medica, therapeutics and obstetrics are studied systematically from text-books, and practically at the bedside, in the dispensary, and in general clinics. Enough didactic lectures are given by the Professors of Medicine and Surgery at the beginning of the session to explain general principles in symptomology and diagnosis. Throughout the year the class must attend in small sections, one or more daily recitations from standard text-books upon the subjects previously assigned and learned. Pathology is studied in greater detail than previously, both in the laboratory and the dead house, and as far as possible, morbid processes are demonstrated in advance of the study of the disease in the text-book or its clinical presentation.

In conjunction with the bedside teaching, instruction is given in all of the modern laboratory aids in diagnosis classified under the term of clinical pathology.

Groups of ten or twelve students are taught by individual experience the methods of examining patients for the detection of abnormal physical signs, and at the close of the session all students are expected to be familiar with the recognition and treatment of the common diseases and be conversant with the fundamental subjects of a medical education. The specialties taken up in this year are neurology, pediatrics, toxicology, genito-urinary diseases and gynæcology. They are taught by clinical lectures as part of the general subjects of the practice of medicine, surgery and obstetrics.

To meet the requirements of hospital and other boards of examination, such as those of the civil service or the army and navy, students who wish to compete in these examinations may elect in their third and fourth years to have all their recitation exercises with special instructors appointed by the faculty. A separate fee is required for this service.

The fourth year is devoted chiefly to the study of diagnosis and treatment of disease at the bedside, in the dispensary and in clinics. The extent of this may be inferred from the present arrangement of the schedule, which contemplates about fifty hours of hospital-ward work in medicine, and nearly the same number in surgery for every student. There are as few lectures as are consistent with the proper exposition of the chief problems confronting the profession, and these are delivered at the outset of the term in order that the student may

become familiar as soon as possible with the facts which are to be taught practically. For example, to the professor of medicine twelve didactic lectures are assigned. This proportion has to be exceeded somewhat in therapeutics, obstetrics and the specialties, but many of these lectures are illustrated by the presentation of typical cases and are really clinics. The clinical instruction in surgery is supplemented by an operative course in which the student performs upon the cadaver all the common operations. Particular attention is also given to the methods of making medical and surgical diagnosis, and in this connection constant use is made of the bacteriological and chemical laboratories, where the student examines specimens taken at the bedside during one exercise and reports the results to the class at the next.

Hygiene and its application in the province of the physician and public health officer is taught by lectures supplemented by demonstration of the plans and methods of the city health board.

The major part of the theoretical instruction, as in the previous years, is given by recitations in the subjects of medicine (including neurology), surgery (including orthopædic surgery and genito-urinary diseases), therapeutics, obstetrics, gynæcology and pathology.

The instruction in the specialties, which is made the distinguishing feature of this final year, is begun with a few clinical lectures and is continued by a course in the examination and treatment of dispensary patients by each student. Every one receives from fourteen to twenty-one hours of this training (the number varies somewhat with the subject), and should become reasonably proficient in the use of instruments, the ability to make diagnoses and give relief. There is no attempt made to produce experts, but each one before graduation must know enough about the specialized branches of medicine to be competent general practitioners. The lectures upon the physiology of the organs of special sense delivered in the fall to the second-year class, must also be attended by the seniors. These lectures serve as an introductory review of facts necessary for a proper knowledge of the specialties and obviate unnecessary repetitions by the different professors.

Every student must personally attend a definite number of cases of labor, and for this purpose the maternity service connected with the college offers excellent opportunities. The faculty earnestly recommend that this work be accomplished in the summer preferably of the third year; by the proper choice of electives it is possible in the second summer, but this is not as desirable or profitable. If taken during the regular winter session much loss in other work would result. Those who for any proper reason cannot take this course as advised in

the summer might, however, succeed in obtaining the necessary cases during the winter by selecting odd hours when not engaged in section work, and by arrangement with the office to receive telephone calls.

As in the previous year there are the same electives in recitations for those who wish particularly to fit themselves for hospital and other competitive examinations. There is also offered an advanced course in neurology in a hospital devoted largely to the care of this class of patients. There will in addition be elective practical courses in the dispensary, but until sufficient material becomes available these cannot be definitely announced.

DETAILS OF THE PLAN OF INSTRUCTION.

Anatomy.

Anatomy is taught in the first and second years by lectures, recitations, section demonstrations and dissection. A review quiz to prepare for state and hospital examinations is held during the fourth year. The course in anatomy is arranged to correspond as far as possible with the courses in physiology and histology.

Lectures are confined to practical applied anatomy of the bones and joints, and follow the recitations on these subjects. In the second year the lectures are devoted to regional and surgical anatomy, the students being already well grounded in descriptive anatomy. The order of subjects is head and neck ; thoracic, abdominal and pelvic cavities and viscera and perineum.

One lecture a week is given during the second year by the Professor of Practical anatomy on the development and gross anatomy of the nervous system, the gross anatomy and relations of the extremities and the viscera.

Professor Gage will give six lectures on embryology during the month of January to second-year students.

Descriptive Anatomy is taught by recitations, section demonstrations and dissection.

Recitations, from standard text-books, are held by the Instructor in anatomy twice a week for each section of the first-year class and once a week for each section of the second-year class. During the first year bones, joints, muscles, arteries and veins are recited upon ; during the second year the nervous system and the viscera. Written reviews are held at intervals under the direction of the Professor of Anatomy, the last of which is a general review or examination of the year's work. In the first year the students of each section begin to recite upon the bones of that part which they are to dissect at the end of the first fortnight, and so on for the remaining parts.

Practical Anatomy.

Section Demonstrations are conducted by the Professor and Assistant Demonstrators of Practical Anatomy once a week for each section during the first and second years. During the first three months of the first year the students are prepared for their dissection by recitations in the class-room, upon the bones of the part they are to dissect in the following month, and by section demonstrations on the cadaver, by means of which they are taught how to dissect, what to find, and where to find it. In addition, one preliminary demonstration is given weekly from October to January on the thoracic, abdominal and pelvic viscera to prepare students for the course in physiology and histology by demonstrating the organs whose function and structure they are to study. In the last half of the first year the joints are demonstrated. In the second year the brain and nervous system, organs of sense, viscera, and perineum are demonstrated.

Dissection.—The course in dissection is arranged on a laboratory basis—that is, the students are required to dissect during certain specified hours each day while the demonstrators are in attendance. This insures more satisfactory work on the part of students and better supervision and teaching on the part of the demonstrators. Ten hours a week are assigned in the schedule for this anatomical laboratory course during the first and second year. In addition dissection is permitted at any time after 10 A. M., if the students are at leisure.

Two courses of dissection are required. The first course for first-year students comprises the dissection of three parts—the head and neck, and upper and lower extremities. This course is begun after the recitations and section demonstrations have prepared each student for the part assigned to him and includes the dissection of the joints.

The second course consists of the dissection of four parts, and is designed for second-year students and such first-year students as have completed the first course. This course includes a review of the first course, with more particular attention paid to the minuter parts, and, in addition, the dissection of the brain, the trunk, with the thoracic and abdominal viscera, and the perineum. A considerable part of the second course may be finished during the first year. This will afford time in the second year for additional and advanced work after completing the required parts. Students are examined and marked on the dissection of each part required. Prepared bones are loaned to students during the session from a large collection kept for this purpose.

Preliminary training in comparative anatomy is very desirable. A practical, in addition to a written, examination is held by the Professor

of Anatomy at the end of the second year. At the end of the first year there is a written review or examination on the work of the year.

Advanced, Special, and Post-Graduate Courses.—Facilities are offered to students and the medical profession for pursuing advanced, special and post-graduate courses in practical anatomy.

PHYSIOLOGY.

Instruction in this branch is given by systematic lectures and recitations, with practical demonstrations and exercises, to first-year students during the second half of the session, and to second-year students during the first half of the session. During the second half of the session, review recitations, covering the entire first-year and second-year courses are held once a week for the second-year class by the instructor, as a preparation for the final college and the State examinations.

The experience of the past four years has made it evident that first-year students are not well prepared to take the study of physiology proper, without some general knowledge of the gross anatomy of the thoracic and abdominal viscera and the histology of the heart and blood-vessels, respiratory organs, alimentary canal, and the glandular organs. As regards gross anatomy, this preparation is afforded by section demonstrations in the department of Practical Anatomy, and the histology is taught in the laboratory and by recitations—all during the first half of the session.

The regular second-year work in physiology is given during the first half of the session. Second-year students receive laboratory instruction in physiological chemistry from the department of Chemistry, Physics and Toxicology. The same department gives instruction in optics and acoustics to first-year students, which serves as a preparation for the study of vision and audition in the second year. Second-year students receive laboratory instruction from the department of Histology in the histology of the nervous system and the organs of special sense. They also receive instruction from the department of Anatomy in the anatomy of the encephalon and cranial nerves.

Lectures.—The regular lectures for the first-year class begin about the middle of January, and are continued three times weekly until the close of the session, on the following subjects and in the order named: The cell, blood, circulation, respiration, digestion and absorption, secretion and excretion, general metabolism, and animal heat. The regular lectures for the second-year class begin at the opening of the session, and are continued three times weekly until about the middle of January, on the following subjects and in the

order named: The special senses, the nervous system, and embryology. Five lectures on embryology, given in January by Professor Flint, are devoted to the development of the ovum up to and including the formation of the membranes. Professor Gage, of Ithaca, gives six lectures after Professor Flint, profusely illustrated, on the development of systems and organs in the embryo and foetus. The first nine lectures of the course devoted to the special senses are given to the second-year class and the fourth-year class together. Fourth-year students are thus enabled to review the physiology of the special senses as a preparation for the study of ophthalmology and otology.

Throughout the entire course, while the subject of human physiology proper is fully covered, special attention is paid to its applications to the practice of medicine and surgery, much time being devoted to what may be called applied physiology.

Recitations, Section Work, etc.—Certain of the work in the histological laboratory is practically a part of the instruction in physiology. For first-year students, this includes laboratory work and recitations on the cell and karyokinesis, ciliary movements, blood, the histology of the simple tissues, heart, and vessels, respiratory system, digestive system, glandular organs, and the cellular mechanism of secretion. For second-year students the instruction includes a study, in the same manner, of the nervous system, organs of special sense, and the genito-urinary system. The instruction in physiological chemistry is given in the department of Chemistry to second-year students. It includes lectures upon physiological chemistry, laboratory work, and recitations on the carbo-hydrates and fats, proteins and albuminoids, food-stuffs, and the digestive secretions, endosmosis and exosmosis, and the chemistry of blood, bile, urine, and the simple tissues.

In addition to the work in histology and physiological chemistry and in close connection with the lectures on physiology proper, the Assistant Professor will give, three hours weekly, recitations, with frequent demonstrations and practical exercises, to each class, divided into sections of convenient size, for first-year students during the second half of the session, and for second-year students during the first half of the session. One additional room will be devoted weekly to demonstrations to each entire class of the subjects considered in the regular lectures for each week.

In the section-teaching, many demonstrations, by means of specimens, models, and apparatus, will be given, which cannot with advantage be made before the entire class, such as blood-counting, the capillary circulation, blood-pressure, the use of the sphygmograph,

the general physiology of nerve and muscle, etc. ; but care will be taken not to occupy valuable time in the repetition of practical work done in the departments of histology and physiological anatomy.

In the course of the section-work, students who prove themselves capable may be permitted to aid in the preparation and giving of the demonstrations when this does not interfere with other exercises, this corps of student-assistants being changed from time to time so that the privilege may be extended to as many as possible.

CHEMISTRY, PHYSICS AND TOXICOLOGY.

Lectures.—Students of the first year will receive two lectures each week on physics, the divisions of the subject being considered in the following order: General properties of matter and force, mechanics, hydrostatics, pneumatics, optics, electricity, heat and acoustics. The lectures will be abundantly illustrated, and the relations of physics to surgery and medicine will be particularly considered.

During the second year students will attend two lectures weekly. Organic chemistry will be considered in the earlier part of the term to an extent sufficient to impart a knowledge of the principles of combination of the carbon compounds and the properties and relationships of those which are of physiological, toxicological or therapeutical interest. The lectures during the latter part of the second year will be upon physiological chemistry.

During the third year one lecture will be given weekly on toxicology for twenty weeks. In these lectures the medical and medico-legal bearings of the subjects will be chiefly considered.

Recitations.—Students of the first year will recite twice each week on physics and the principles of chemistry and mineral chemistry. Those of the second year will recite once weekly on organic and physiological chemistry.

Laboratory Work.—Laboratory instruction will be given students of the first year four hours weekly during the entire session. This course will consist of an experimental study of the commoner elements and compounds in illustration of the recitation course, and of training in the processes of qualitative analysis of inorganic substances and poisons, mineral and organic.

Students of the second year will receive laboratory instruction two hours weekly until February 14 and four hours weekly after that date in physiological and clinical chemistry and organic toxicology.

Each student is fully supplied with all apparatus and chemicals required, except urinometers, which are carefully corrected for the student that they may serve for future use.

These courses are conducted by the Assistant Professor and the instructors under the direction of the Professor of Chemistry and Physics.

First-year students presenting satisfactory evidence of having performed equivalent work in chemistry and physics will be excused from first-year work in this department, and be given advanced laboratory work equivalent in hours to that omitted.

MATERIA MEDICA AND THERAPEUTICS.

Instruction is given in this department during the second, third and fourth years by means of lectures, clinical instruction, recitations and laboratory work.

Lectures.—These are given by the professor twice a week to the third-year students and once a week to the fourth-year students. They are confined almost exclusively to therapeutics, as it is believed that materia medica can best be taught by recitations and by laboratory work.

The lectures to the third-year students will consider the therapeutic uses of the most important drugs from the standpoint of the drug itself, such as the method of prescribing the drug and the conditions for which it is given ; only so much of the physiological action of the drug will receive attention as will explain its therapeutic value.

The lectures to the fourth-year students will be confined almost exclusively to a consideration of the systematic treatment of the different diseases. The plan of treatment will be given in detail, with definite instruction as to the drugs to be used and the preparations which are most reliable.

Lectures will be given on remedial agents other than drugs, such as massage, dietetics, climatology, mineral waters and hydrotherapy.

Clinical Instruction.—A new departure in the teaching of therapeutics will be made by affording the students of the third and fourth years opportunity to observe the effects of the different remedies on the natural course of disease. To accomplish this the classes will be divided into small sections and taken by the professor into the wards of Bellevue Hospital. Actual practice is given in the employment and application of the various therapeutic agents used in medicine, such as the hypodermic syringe, aspirators, leeches, cups, cauteries, stomach-tube and stupes. The hydropathic establishment connected with this hospital is one of the most complete in the country. Here to small sections will be demonstrated the various applications of water to the treatment of disease—such as baths, packs, douches, etc. A professional masseur will show the technique of massage and the Swedish movements. The treatment of the different diseased condi-

tions observed will be systematically studied, and opportunities will be given to the members of the class to make personal examination of the patients and to watch the modification of disease produced by the remedies prescribed. The clinical work of the third and fourth years affords abundant opportunities for further training in practical therapeutics. A general medical clinic will be held by the professor once a week in the amphitheatre of Bellevue Hospital, at which special attention will be given to the treatment of the diseases under consideration.

Recitations.—Students of the third year will recite to the instructor twice a week from a standard text-book. During the fourth year a recitation will be held once a week on therapeutics.

The recitations will embrace a study of the action of all the more valuable remedial agents in connection with a description of the drugs themselves.

Each student will be thoroughly drilled in prescription-writing and in the doses of the more important drugs.

Examinations will be held at stated times during the session by the professor to enable him to judge of each student's progress.

Laboratory Work.—The laboratory of *Materia Medica* now occupies two floors of the Loomis Laboratory building; it is provided with a complete assortment of crude drugs and with all the various preparations of the *Materia Medica*; also with appliances for instruction in the methods of manufacturing pharmaceutical preparations. The laboratory is equipped with instruments and appliances for special research in the physiological action of drugs. The large class-room is supplied with sixty tables, equipped with gas, electric lights, water connections, and full apparatus, enabling each student to work separately under the supervision of the instructors.

The course of laboratory instruction is taken during the second year, and consists of six hours each week for half the year. The class is divided into small sections, which are under the personal supervision of the instructors. The method of teaching is distinctly practical. The student is made familiar by the laboratory work with the physical and chemical properties of drugs. This course includes such subjects as the forms of drugs, their weight and bulk, the measurement of solid and fluid drugs, methods of administering medicines, particularly with reference to appropriate combinations, and the study of solubilities. The subject of incompatibilities is clearly demonstrated.

Prescription-writing is taught throughout the course, and test prescriptions are compounded by members of the class.

MEDICINE.

The Course of Medicine, extending over three years, is so graded that the student pursues a logical sequence of work throughout. No didactic lectures upon Practice of Medicine are delivered, their place being wholly taken by bedside instruction and recitations. The complete course comprises the following subdivisions :

SECOND YEAR—Recitations upon elementary topics.

Normal Physical Signs of the Chest.

THIRD YEAR—Recitations from an advanced text-book, including written reviews.

Abnormal Physical Signs of the Heart and Lungs.

Bedside History-taking.

Bedside course in Symptomatology.

Clinical Pathology.

Bedside course in General Medical Diagnosis.

Eighteen lectures on Symptomatology.

Hospital Medical Clinics.

FOURTH YEAR—Advanced bedside course in Symptomatology and Diagnosis.

Demonstrations of patients by the student before the class.

Courses in the Out-Patient Clinic in Medicine.

Dispensary Medical Clinics.

Hospital Medical Clinics.

Medical Conferences.

Twelve lectures upon Diatheses, Toxæmias, etc.

Elective advanced work in Clinical Diagnosis (Clinical Microscopy, History-recording, etc.)

Review quizzes for State Board examinations.

The details for the methods of instruction in medicine for each year of the curriculum are as follows :

I. Second Year Students.

Recitations.—Second-year students begin the study of medicine with systematic recitations from an elementary text-book, in which the subjects of nomenclature, etiology, morbid anatomy and typical symptoms only are dwelt upon.

Physical Diagnosis.—Normal physical diagnosis of the chest is taught to sections of ten students each in classes from the Dispensary. Each student is required to map out upon the patient the normal positions and sounds of the thoracic viscera, and toward the end of each course of twelve lessons a few abnormal cases are introduced for comparison.

II. Third-Year Students.

Recitations.—Third-year students recite twice a week from an advanced text-book on practice, special emphasis being given to symptomatology, complications, diagnosis and treatment.

Written reviews are held at intervals to familiarize the student with examinations. All recitations are obligatory and the recitation marks received form an important component of the final examination marks of the year.

Ward Work.—Systematic and obligatory ward work is begun in classes not exceeding fifteen students each, who accompany the Professor of Medicine on routine rounds through the hospital wards. Repeated illustrations of all the common diseases are studied, and the advantage to the student of personally examining many cases of such diseases as typhoid fever, pneumonia, nephritis, cardiac ailments, etc., in different stages of development, and of following their daily progress, far outweighs the obsolete system of attendance upon didactic lectures. The student is first taught to observe and describe symptoms and investigate etiology, and as he attains proficiency is required to make diagnoses, offer prognoses and suggest treatment.

General Diagnosis.—A special course is given in general medical diagnosis, in which at one lesson the student is required to examine, compare and report upon each variety of pulse found in the ward; at another upon each variety of cachexia, anæmia or œdema; at another, upon each variety of abnormal liver or spleen; and so on, comprising all the important physical examinations.

Clinical Laboratory Courses are conducted under the supervision of the chief of the medical dispensary in immediate connection with the study of hospital and dispensary cases.

The laboratory is designed to meet the three following requirements:

1. *Teaching*

The third-year class is divided into small sections, so that each member receives the personal assistance of the demonstrator. At the conclusion of the course a written and practical examination is held, and the result of this, as well as the character of the work done by each student, is included in the general average received by him in medicine. When assigned to cases at the general medical clinic the fourth-year student is required to report the result of his examination of the sputum, blood, urine, etc. Students of this year also, reporting at the medical conferences, for which longer time is allowed for preparation, make more extended research in the laboratory.

The apparatus employed is of such simple nature that it can readily be transported to the bedside, the work being thus essentially practical and such as is a direct guide to diagnosis. The student *himself* uses the apparatus so that he may become familiar with its care and application.

Following is a brief outline of the course :—(Third year).

BLOOD.—Technique of obtaining blood specimens ; normal constituents of blood ; blood formation in bone marrow ; corpuscle counting and hæmoglobin estimation ; technique of fixing and staining specimens ; diseased conditions determined by differential counting ; study of blood-serum diagnosis ; leucocytosis ; malarial and other blood parasites ; medico-legal value of blood stains.

SPUTUM.—Collection and examination of the gross specimen ; disinfection of sputum cups, etc. ; specimens of sputum in asthma, pneumoconiosis, tuberculosis, gangrene and hemorrhage from the lungs, pneumonia, etc. ; diphtheria and other bacilli.

GASTRIC CONTENTS.—Examination of vomitus ; administration of test meals ; method of obtaining and examining gastric contents ; lavage.

FÆCES.—Method of obtaining and examining ; intestinal parasites and ova.

URINE.—Microscopic examination with reference to diagnosis ; gonococci, tubercle bacilli, etc., seminal fluid in its medico-legal aspect ; crystalline deposits.

EXUDATIONS AND TRANSUDATIONS.—Ascitic and pleuritic effusions, cystic contents, vaginal discharges.

Each student is furnished typical specimens which he stains and studies at the demonstrations and preserves for future reference and comparison.

2. *Original Research.*

Facilities are offered to graduates and undergraduate special students for the undertaking and publication of original investigations.

Special courses for advanced students are to be offered at times most convenient to such students.

3. *Dispensary, Hospital, and Clinical Laboratory Examinations.*

The laboratory is a working part of the Cornell dispensary. The visiting staff of this dispensary, as well as that of the adjacent hospital, use the laboratory extensively for completing the data of their cases. Students who have completed their third year, and whose standing is good, may, under the supervision of the instructors, employ their summer months in following this work in the laboratory.

The number of students thus employed will of necessity be limited.

Careful records of such examinations are kept for future reference, and from which valuable clinical deductions may be made.

Physical Diagnosis.—Physical Diagnosis of abnormal conditions within the chest is taught by Professor Lambert to classes not exceeding a dozen students each. This course of twelve lessons for each class is very comprehensive, owing to the large numbers in the class of heart and lung diseases in the college dispensary and in the wards of Bellevue Hospital.

General Medical Clinics. Students of the third year are required to attend a clinic in general medicine conducted by Professor Lambert (commencing in December), and also the clinic in medical diagnosis conducted by Professor Thompson, and the clinic in general therapeutics by Professor Loomis, as described for the fourth year. These clinics are held weekly in the amphitheatre of Bellevue Hospital.

Lectures.—A course of eighteen lectures upon general symptomatology is given by the Professor of Medicine, which is designed as introductory to the systematic bedside teaching which he conducts upon hospital rounds.

III. Fourth-Year Students.

Bedside Instruction is given by the Professor of Medicine to sections not exceeding fifteen students, in the wards of the Presbyterian Hospital until January 1st, and in those of Bellevue Hospital thereafter, throughout the year. In these sections each student is assigned in turn to special cases for thorough study. Ward classes are also conducted by Dr. Conner at the Hudson Street Hospital, and by Dr. Nammack in Bellevue Hospital.

Clinics.—Medical clinics are held weekly in the amphitheatre of Bellevue Hospital by the Professor of Medicine. At these clinics students read written histories of cases which they have studied on the previous day. They are required to demonstrate their findings upon the patient, and are questioned before the entire class in regard to diagnosis, etc. These clinics are also utilized by the Professor of Medicine to exhibit cases of exceptional rarity or difficult diagnosis. A second general medical clinic is held weekly in the Bellevue amphitheatre by the Professor of Therapeutics, at which the effects of treatment are made the prominent feature.

An out-patient clinic is also held weekly by the Professor of Medicine in the dispensary of the college, at which students are given ample opportunity to examine patients, study minor ailments, as well as all the forms of disease in the ambulatory of a large and varied clinical service.

SURGERY.

Surgery will be taught in the recitation room, at the bedside, at hospital clinics, and by lectures.

In the second year the students are required to attend recitations on the principles of surgery two hours a week throughout the term. For this purpose the class is divided into small sections to insure thorough work ; so far as time permits instruction will be given in the dispensary.

In the third year recitations are continued upon regional surgery ; the class is instructed in sections in Bellevue Hospital in history-taking and methods of surgical examination and diagnosis, two or three hours a week for part of the term ; bedside instruction is given daily in several hospitals to small groups, and formal clinics are held in Bellevue, New York, and other hospitals ; about thirty lectures will be given by the Professor of Surgery, and a clinic for diagnosis is held once a week for the first half of the term and thrice a week for the second half, at which the students are required personally to examine and report upon the cases.

In the fourth year the students will receive clinical instruction in small groups in several hospitals and dispensaries upon general surgery and the special branches,—eye, ear, nose and throat, genito-urinary diseases, dermatology and orthopædics ; will attend the clinics and will have a review quiz in preparation for examination.

The members of the sections are trained in the examination of patients, the dressing of wounds and fractures and the administration of ether.

The opportunities for instruction in the special branches are exceptionally ample. There will be several clinical teachers in each subject, each with hospital and dispensary services. The student will be enabled directly to examine and study cases, and will have a certain choice as to the time given to each branch.

Operative surgery will be taught in the fourth year in sections. The course consists of recitations, work upon the cadaver and bandaging. As the material is abundant each member of the class will perform all the principal surgical operations.

Special instruction in operative surgery is offered to graduates in medicine. A circular giving particulars may be had on application to the Secretary.

OBSTETRICS.

Instruction in obstetrics will be given during the second, third and fourth years by

1. Recitations.
2. Illustrative Lectures.
3. Obstetric Clinics and Conferences.
4. Attendance upon Cases of Confinement.
5. Manikin Practice and Section Work.
6. Obstetric Histology, Pathology and Bacteriology.

1. **Recitations** from a standard text-book will be held by the instructor in obstetrics, during the second year upon the physiology, and during the third upon the pathology of obstetrics, the latter including obstetric surgery.

These recitations are so scheduled as to cover the entire field of the subject laid out for the college year, are supplementary to the work of the Professor of Obstetrics during each of these two years and prepare the student for an intelligent appreciation of his subsequent illustrative lectures, obstetric conferences, attendance upon cases of confinement, clinics and manikin practice.

2. **The Illustrative lectures** comprise a systematic course, running through the third year, upon the physiology and pathology of obstetrics.

These lectures are theoretical to a limited extent only, being mainly demonstrative and illustrative character. To this end ample black-board space is used, as well as an abundant collection of pelves, entire, normal and deformed, mesial sections of the same, and in addition a supply of diagrams, charts, carefully selected plaster composition and metal models, wet and dry preparations and instruments.

In conjunction with these lectures additional recitations are held by the Professor of Obstetrics upon the subject-matter of the college year and for final review.

3. **Obstetric Clinics and Conferences.**—A weekly obstetric clinic is held throughout the year, for both the third and fourth-year classes. At this clinic abnormal cases of pregnancy, labor, and the puerperium are demonstrated, and the major and minor obstetric operations performed.

In addition, infant feeding and the care of mother and child during the lying-in period and early infancy are taught. During both the third and fourth year members of the class will be called upon in rotation to examine patients and discuss etiology, diagnosis, prognosis and treatment. These "obstetric conferences" will review the illustrative lectures, manikin work, and the student's work in his attend-

ance upon confinement cases. By this means each individual student's standing in the department of obstetrics is ascertained. During the latter half of the second year six obstetric clinics are given at the hospital. Attendance upon these clinics is optional.

4. **Attendance upon Cases of Confinement.**—Each candidate for the degree of M.D. is required to present satisfactory evidence to the effect that he has attended a definite number of cases of confinement.

During the student's attendance upon his practical maternity course he may be excused from the exercises of the College during the fourth college year, otherwise he shall take his practical obstetric course during vacation time.

5. **Manikin Practice and Section Work.**—Manikin practice is given to sections of the class during the fourth or senior year, and consists of work by individual students upon the manikins, under the supervision and criticism of an instructor.

The mechanical phenomena of labor; modes of delivery; abnormal presentations and positions with methods of delivery of each; version; application of the forceps; and other manipulations will be demonstrated by the instructor and performed by the student.

Diagrams, models, casts, wet and dried specimens, will be used in the demonstrations.

The sections will also be instructed at the bedside in the management of pregnant and parturient women, the care of the new-born child, abdominal palpation, and pelvic mensuration.

6. **Obstetric Histology, Pathology and Bacteriology.**—Laboratory instruction is given during the third year by the Professor of Pathology upon the histology of the vulva, vagina, uterus, ligaments, Fallopian tubes and ovaries in the pregnant and non-pregnant conditions, and upon the histology and pathology of the decidua, chorion, placenta, and umbilical cord.

GYNÆCOLOGY

Instruction in gynæcology is given by recitations, lectures, ward and class-room demonstrations, clinics and laboratory demonstrations.

Six Lectures, upon topics selected for their special interest and importance to the subject as a whole will be given at the beginning of the third year.

Recitations are planned to cover the entire subject and are held one hour a week during the third year of the course. In order that the instruction throughout the department may be as nearly in unison as possible, a synopsis of the subject-matter of each lesson is prepared by the instructor and amended and revised by the head of

he department. This is presented to the student for comparison with his text-book, to which it is an addendum. This method insures the coöperation of the head of the department in the groundwork of his subject and enables him to keep in touch with each student until his graduation.

Class Room and Ward Demonstrations are given to sections of the fourth-year class twice a week throughout the year. This instruction includes the examination of patients by the students, who are thereby drilled in the methods of physical diagnosis as applied to the pelvis. When necessary the patients are anæsthetized.

The routine of treatment appropriate to the various conditions found is demonstrated, the students assisting when possible. In this way, not only is familiarity acquired with normal conditions within the pelvis and the various departures from this state induced by disease, but opportunity is afforded to see and put in practice actual measures of relief and to watch the subsequent course and treatment of these cases.

Operations are performed three days every week at which the several sections are enabled to study the detail of every operation peculiar to this department.

A General Clinic is held once a week at which students selected in rotation are required to examine the patient, make a diagnosis and suggest treatment. They are questioned before the class upon all these topics, as they relate to the case in hand, so as to determine the correctness of their conclusions. Should operation be called for, it is then performed.

Laboratory Demonstrations of secretions, discharges and specimens obtained from patients who come under observation during this course are made to sections of the third-year class as a part of the course in clinical pathology.

PATHOLOGY.

Including Histology, Gross and Microscopical Pathology and Bacteriology.

HISTOLOGY.

The work in this subject is conducted throughout the first and during a portion of the second years by laboratory exercises and by recitations. Laboratory exercises in two two-hour sessions weekly throughout the first year, and one two hour session weekly during half of the second year, occupy in all about 150 hours for each student. The work covers the construction and use of the microscope,

the methods of preparing microscopical sections of tissues, and the normal histology of the various tissues and organs of the human body. Attention is constantly directed to the application of the knowledge to physiological phenomena, and to further this end the courses in physiology and histology proceed as far as possible in unison. When desirable the structure of human tissues and organs is illustrated by sections of embryonal and lower-vertebrate tissues.

In the first year the blood and simple tissues, the gastro-intestinal tract and adnexa, and the respiratory, circulatory and genito-urinary organs are studied. In the second year the organs of the special senses and the nervous system are considered.

Recitations.—One recitation weekly for each student is held during the first year, and the first half the second year, on subjects assigned from the text-book on histology. These recitations are designed to completely familiarize the student with the structure of the tissues considered during the previous work in the laboratory exercises.

An examination is held at the end of each year. The standing of the student in this, as in other subjects, is determined equally from the work in the laboratory exercises and in the recitations.

PATHOLOGY.

The course of instruction in pathology gives in the second year a preliminary course of lectures on the theory and classification of inflammations, which is designed to acquaint the student with the main facts in this field, to prepare him for preliminary studies in medicine and surgery and to establish a uniform system of nomenclature to be used in this and other departments. During one-half of the second year, also, attendance is required at one weekly demonstration—two hours' duration—in gross pathology, at which the more common visceral lesions are exhibited. This course is designed to accompany the preliminary recitations in medicine and surgery of the second year.

The main branches of the subject are grouped in the third year in order to secure the simultaneous study of the gross and microscopical changes in diseased tissues. In the fourth year the students perform autopsies, and attend one recitation weekly in review of the entire subject.

Microscopical Demonstrations in Pathology.—The microscopical demonstrations occupy three two-hour sessions weekly throughout the year, in all about 175 hours, and they constitute the main features of the instruction in this department. The specimens studied illustrate the topics of inflammation, tumors, auto-intoxicants, infectious

diseases and diseases of the nervous system, and are supplemented by lectures and special demonstrations by means of sections, charts, lantern slides and micro-photographs.

Demonstrations in Gross Pathology.—On the days alternating with the microscopical studies demonstrations of gross pathological specimens are given to the students of the third year, with the material collected from autopsies. With the viscera of each case is presented an epitome of the clinical history, and, when necessary, frozen sections of the organs, and the clinical symptoms are explained from the gross and microscopical changes in the altered tissues. The student here sees the viscera of many of the fatal cases which he has studied in the wards of the hospital.

Gross pathological diagnosis is taught as a separate branch of this subject, not bearing directly on the clinical aspect of the case.

These demonstrations occupy three two-hour sessions weekly, each section of the class attending one exercise weekly throughout the year.

Post-Mortem Examinations.—Students of the fourth year are required to perform autopsies under the direction of the instructor in gross pathology, when they are made familiar with the technical procedures required in ordinary and in medico-legal cases.

Recitations.—One recitation weekly is required of each student throughout the third and fourth years. In the third year they cover the work of each preceding week. In the fourth year they are held by the Professor of Pathology, and cover the entire work of the department.

BACTERIOLOGY.

The laboratory course in bacteriology occupies three two-hour sessions each week for one-half of the second year, in all ninety hours for each student. The student is first made familiar with the methods of disinfection, and is required to prepare the ordinary culture media. The work then proceeds to the methods of staining and examining bacteria; their artificial cultivation and the study of biological characters; the methods employed in the separation of species; the general relation of pathogenic bacteria to disease; and concludes with the biological analysis of air, water, soil, and milk. Cultures are made from the viscera of cases of various infectious diseases, and the student is required to cultivate and identify the important pathogenic micro-organisms. The work is supplemented when necessary by the use of pure cultures, by the exhibition of anærobic cultures, and to a limited extent by inoculations in animals.

An Advanced Course in bacteriology is offered to those students who have been able in the first year to attend the course required in the second year.

This course includes the cultivation of other pathogenic micro organisms, the separation of species, and the bacteriological examination of viscera secured at autopsies.

Advanced Courses and Original Research.—The abundant facilities of the Loomis Laboratory and the fourth floor of the new building can be offered to properly qualified students and practitioners of medicine who wish to pursue advanced courses of study on lines of original research, under the direction of special instructors.

SPECIAL DEPARTMENTS OF MEDICINE AND SURGERY

DISEASES OF CHILDREN.

This department will embrace clinical instruction and section teaching in all the important diseases of infancy and childhood.

There will be one clinical lecture each week in the College building, and clinical lectures in the Willard-Parker Hospital on scarlet fever and diphtheria.

In connection with the Dispensary of the Children's Department in the College building there will be an amphitheatre for section teaching and isolation rooms for contagious diseases, so that students will have ample opportunity for the personal study of disease.

Three hours each week will be devoted to section teaching in the Dispensary to the students of the fourth year.

Students will be required to examine sick children and discuss the diagnosis and treatment of patients assigned to them.

Special attention is given to the hygiene and feeding of infants; the digestive disorders of infants; the dietetics of childhood and the food disorders of infancy and childhood; the anatomical and physiological peculiarities of infancy and childhood; and the influence these peculiarities have on the manifestations of disease in children.

One of the distinguishing features of this department will be the instruction of each student in the art of diagnosis, by the professor in charge.

There will be practical bedside illustrations of the management, care and therapeutics of all the acute diseases of infancy and childhood.

In the clinical laboratory microscopical examinations will be made of secretions and excretions, of lesions of the mouth and throat and of sections of anatomical lesions of the important diseases of childhood.

SURGICAL DISEASES OF THE GENITO-URINARY ORGANS.

The course is required of students during the third and fourth years, and is designed to give instruction in diagnosis and treatment of the surgical diseases of the genital and urinary organs and of syphilis. It consists in recitations, lectures, clinics and bedside instruction in Bellevue Hospital, and section work in the Dispensary of the college.

Lectures.—One lecture a week from the opening of the term to the first of December will be given by Professor Alexander at the College. These lectures will be principally devoted to the subject of syphilis.

Recitations.—Recitations will be held during the third and fourth years by the instructors in the department of general surgery.

Clinic.—A clinic will be given in the amphitheatre of Bellevue Hospital once each week after the first of January by Professor Alexander. At this clinic the principal operations upon the male urinary and genital organs will be performed before the class, and special attention will be given to the subject of diagnosis. Attendance upon these clinics is required by students during the third and fourth years.

Section Teaching at the College Dispensary and at Bellevue Hospital.—The third-year class will be divided into sections of small size, and instruction will be given by the Chief of Clinic and the instructors in the Department in the College Dispensary. Special attention will be given in this course to the diagnosis and treatment of the venereal diseases and the use of special instruments. A syllabus of these lectures will be furnished to each member of the class.

The fourth year class will be divided into sections of small size, and instruction will be given in the wards of Bellevue Hospital or in the College Dispensary by Professor Alexander. This course will be devoted principally to the diseases of the urinary organs and to instruction in the use of special instruments and apparatus and the post-operative treatment of cases.

NERVOUS DISEASES.

The regular work consists of a preliminary series of ten lectures, given by Professor Dana, in which the general outline of the work for the year is given, with demonstrations of the general anatomy, general symptomatology and methods of examination of the nervous system. During the rest of the term clinical lectures on nervous diseases are given weekly in the amphitheatre of Bellevue Hospital.

Section work is also given weekly to classes in the wards of Bellevue Hospital and three times a week in the College Dispensary for instruction in history taking examination of patients and electrotherapeutics.

It is considered of the greatest importance that the student of nervous diseases be thoroughly grounded in the anatomy and physiology of the nervous system, therefore courses in gross and microscopical anatomy of the nervous system are provided in the histological laboratory. Special students can also take courses on the pathology of the nervous system.

Thus the course of instruction aims to provide the student before he graduates with instruction in the microscopical anatomy of the nervous system, in its physiology and pathology, and also that he shall receive practical clinical instruction in the amphitheatre, at the bedside, and in the dispensary.

MENTAL DISEASES.

The Professor of Mental Diseases and Dr. Hirsch will give a series of clinical and didactic lectures once a week for two months fully illustrated. Clinics will be given at the asylum once a week during the latter part of the course.

Instruction will also be given in diagnosis, the legal commitment of the insane and the relations of insanity to medical jurisprudence.

DERMATOLOGY.

Instruction in Dermatology will be given by the clinical professor and his assistants. No teaching will be given didactically, but the cutaneous diseases will be demonstrated on the living subject. Abundance of material for such instruction is obtainable and the student can thoroughly familiarize himself with the more common as well as with the rarer diseases of the skin by actual personal contact and observation. Attention is particularly paid to the diagnosis and the etiology of skin diseases, but their therapeutics also receive due consideration.

LARYNGOLOGY AND RHINOLOGY.

Instruction in Laryngology and Rhinology is given by clinical lectures at the College by the professor of the department. The subjects then considered are demonstrated to the fourth-year students by the assistants. The class is divided into sections, and each member is expected to examine patients and perform manipulations. The clinics

are fully illustrated by plates and models, and, as far as possible, by clinical material.

OPHTHALMOLOGY.

Instruction in Ophthalmology consists in lectures at the College building once a week during the months of October, November and December and in sectional teaching two hours a week at the college dispensary throughout the year. The weekly lectures at the College are mainly didactic, and consider the subjects of physiological optics, the theory of the ophthalmoscope, refraction and accommodation, the anomalies of the ocular muscles, and the deep lesions of the eye which are not susceptible of clinical demonstrations. Thus the entire field of ophthalmology is covered. The sectional teaching at the college dispensary is devoted partly to clinical ophthalmology and the use of the ophthalmoscope, and partly to instruction in the errors of refraction and the rudiments of the fitting of lenses.

OTOLOGY.

During the first third of the fourth year a systematic course of weekly lectures is given. These lectures are practical in character, including a consideration of the anatomy and physiology of the ear and the various methods of examination. Patients are shown to the class in order to familiarize the student with the symptoms and character of the more important diseases.

The class is divided into sections for clinical instruction in the Dispensary. Each student receives practical instruction from Professor Bacon and his assistants in the examination of patients, the use of the otoscope and the various methods of testing the hearing. The student is permitted to examine patients and, after a probationary period, to prescribe for them and thus gradually assume the duties of a clinical assistant. The students have also an opportunity of witnessing the more important operations in aural surgery, including intracranial complications.

ORTHOPÆDIC SURGERY.

The course of study in the Orthopædic Department includes a stated clinical lecture once a week, with detailed demonstrations in sectional work twice a week during two months of the year.

During the regular clinical course especial attention is given to the early recognition of the deforming diseases of childhood, also to the symptomatology, pathology and differential diagnosis of chronic and progressive deformities, including the mechanical and operative treatment.

In detail, the course consists of practical illustrations of methods of

treatment, the apparatus used being thoroughly explained both in construction and in principle, attention being called to even minute points of construction and use. The operative side is fully dwelt upon, the indications for operative interference as an adjunct to the mechanical work being demonstrated. Ample clinical material is provided, and models of conventional forms of apparatus are placed at the disposal of students.

In the section and laboratory work the student is required to assist in the management of selected cases, to familiarize himself with the various methods of treatment, to construct the simpler forms of apparatus, to secure a practical knowledge of the details of construction of the more complicated instruments and to familiarize himself with the pathological conditions existing in the deformities of childhood.

DEPARTMENT OF HYGIENE.

Instruction is given in this course to students of the fourth-year class by lectures and demonstrations one hour a week during half of the year.

The course is designed to enable physicians and health officers to cope with preventable disease.

The lectures treat of the hygienic relations of foods, water, clothing, schools, dwellings and hospitals. Special attention is given to the prevention of infectious diseases by a study of their etiology and methods of transmission, and the subject of immunity. This part of the course supplements the work of the Department of Bacteriology.

The hygienic aspects of marriage and heredity are also considered.

SUMMER SCHOOL.

The Medical College conducts a Summer Course in New York chiefly in laboratory work for post-graduates. A syllabus can be obtained on application to the Secretary.

Undergraduate students are taught in the General Medical and Surgical Departments of the Dispensary in classes of six for periods of four weeks from June until October.

This work is optional and no fee is required. The dates are arranged in the order of application and after consultation with the Secretary. The practical training thus acquired is a valuable supplement to the work of the regular session. The Surgical Dispensary is open to all classes. The Medical Dispensary, however, requires some knowledge of prescription writing and the ability to make a physical diagnosis and is therefore limited to those who have completed at least their second year.

SUMMARY OF THE PLAN OF INSTRUCTION.

A FOUR-YEAR COURSE IN MEDICINE LEADING TO THE DEGREE OF DOCTOR OF MEDICINE.

First Year.

1. **Anatomy.**—One lecture and two recitations each week throughout the year.

Section demonstrations. Two hours weekly until January, then one hour a week for the remainder of the session.

Dissection. Three to five courses for four weeks each, ten or more hours weekly.

2. **Physiology.**—Three lectures, three recitations, and one demonstration each week, during the second half of the session.

3. **Chemistry and Physics.**—Two lectures and one recitation lecture each week on Physics. Recitations two hours each week on inorganic chemistry. Chemical laboratory four hours each week throughout the session.

4. **Histology.**—Recitations two hours and laboratory four hours each week throughout the year.

5. **Electives.**—*a.* Laboratory pharmacology. *b.* Physiological chemistry. *c.* Bacteriology. These courses are open to certain advanced students as described elsewhere.

In the course of the session one or more written reviews are held in the subjects recited upon. The papers are examined by the professors of the respective branches.

Second Year.

1. **Anatomy.**—Surgical and regional anatomy. Three lectures weekly. Recitations one hour each week. One demonstration lecture weekly. Section demonstrations one hour each week. Dissection, two to four courses of four weeks each, ten or more hours weekly. Embryology, six lectures during the month of January.

2. **Physiology.**—Recitation and demonstration four hours each week during the first half and one review-recitation each week during the second half of the session. Three lectures a week during the first half of the session.

3. **Organic and Physiological Chemistry.**—Two lectures each week. Recitations once a week.

Laboratory organic and physiological chemistry. Two hours weekly until February, then four hours weekly until the end of the session.

4. **Histology.**—Recitations one hour weekly and laboratory work two hours weekly throughout the session.

5. **Pathology.**—Ten lectures at the beginning of the year.

6. **Gross Pathology.**—One demonstration weekly, two hours duration, for half the year.

7. **Pharmacology.**—Laboratory work six hours each week for half the session.

8. **Medicine.**—Recitation one hour weekly.

Physical Diagnosis.—Three hours weekly for four weeks.

9. **Surgery.**—Recitations two hours weekly.

10. **Obstetrics.**—One weekly recitation. Six obstetric clinics (optional).

11. **Bacteriology.**—Laboratory work six hours a week for one-half of the session.

12. **Electives.**—*a.* Bacteriology. *b.* Materia medica recitations of the third year. *c.* Manikin course in obstetrics. *d.* Obstetrical clinic.

The conditions under which certain students may avail themselves of these electives are stated elsewhere.

The study of the following branches is completed during the second year, and the examinations on them are final: (1) Anatomy (written and practical); (2) Chemistry and Physics; (3) Pharmacology; (4) Physiology; (5) Bacteriology.

Third Year.

1. **Medicine.**—Recitations two hours each week. Physical diagnosis in sections in the Dispensary. General medical diagnosis in sections at the bedside. General medical clinics two hours each week in Bellevue Hospital. Ward visits in small sections with the Professor and Clinical Professors of Medicine in Bellevue and other hospitals. Eighteen introductory lectures.

2. **Pathology.**—Laboratory work six hours and recitations one hour weekly throughout the year.

3. **Gross Pathology.**—One demonstration weekly throughout the year.

4. **Clinical Pathology.**—(chemical and microscopical).—Twenty-five laboratory exercises of two hours each,

5. **Materia Medica.**—Recitations two hours each week.

6. **Therapeutics.**—Lectures two hours each week; one hour a week bedside teaching in Bellevue hospital throughout the year. Clinic once a week.

7. **Obstetrics.**—One illustrative lecture weekly. One recitation weekly. One clinic weekly.

8. **Gynæcology.**—Clinic in Gynæcology once a week. Recitation one hour each week. Lectures, six at the beginning of the year.

9. **Surgery.**—Lectures, thirty hours. General surgical clinics, two each week. Bedside teaching, diagnosis and history-taking in sections in Bellevue hospital. Ward work in small sections in other hospitals with the Professor and Clinical Professors of Surgery. Recitations on regional surgery two hours weekly.

10. **Toxicology.**—Lecture one hour each week for half the year.

11. **Diseases of Children.**—Clinic one hour each week.

12. **Genito-Urinary Surgery.**—Clinics once a week after January 1st. Section work throughout the year.

13. **Neurology.**—Lectures one hour a week for the first ten weeks. Clinics one hour a week for the following twenty weeks.

Dispensary teaching in one hour periods for four weeks.

Fourth Year.

1. **Medicine.**—Ward work in the hospitals. General medical clinics twice a week. Exercises in history-taking and in clinical microscopy continued. Twelve lectures. Recitations, conferences.

2. **Surgery.**—Ward work in the hospitals. General surgical clinics twice a week. Section work and clinics in the special branches. Operative surgery in sections. Recitations.

3. **Therapeutics.**—Lecture one hour a week. Recitation once a week. Clinical instruction in Bellevue hospital. Section work in the College Dispensary in the treatment of diseases and in the writing of prescriptions.

4. **Obstetrics.**—Lectures one hour a week. Attendance upon cases of confinement. Manikin practice and section work. One obstetric clinic weekly. Recitations.

5. **Pathology.**—One review recitation a week.

6. **Technique of Autopsies.**—One exercise a week for a portion of the year.

7. **Gynæcology.**—Clinic one hour each week and ward demonstrations two hours each week. Recitations.

8. **Diseases of Children.**—Section teaching. Two hours each week. Clinic one hour each week. Clinical pathology.

9. **Genito-Urinary Surgery.**—Lectures one hour a week during half the term. Clinics one hour a week after January 1st. Section work twice a week throughout the session.

Neurology.—Twenty clinics. Section work two hours a week in Bellevue hospital.

11. **Mental Diseases.**—Twelve lectures. Clinics once a week for two months.

12. **Dermatology.**—Section work.

13. **Laryngology and Rhinology.**—Fifteen lectures. Section work.

14. **Ophthalmology.**—Ten lectures. Section work.

15. **Otology.**—Six lectures.

16. **Physiology.**—Two lectures a week during the first five weeks of the session on the physiology of the special senses.

17. **Orthopædic Surgery.**—Fifteen lectures. Section work.

18. **Hygiene.**—One lecture a week for three months.

INSTRUCTION AT ITHACA.

DURING THE FIRST TWO YEARS OF THE COURSE.

General Statement.

Upon the establishment of the Medical Department of Cornell University in 1898, in New York City, by action of the Board of Trustees, it was resolved that the work of the first two years, consisting as it does mainly of fundamental scientific subjects, should also be given in Ithaca, where the opportunities offered by the long established departments of Botany, Zoology, Physics, Chemistry, Physiology, Histology, Embryology, and Bacteriology afford unusual facilities for thorough study. The remaining subjects of the first two years were also fully provided for.

Among the facilities of the University of special value to the Medical College may be mentioned the museums of Vertebrate and Invertebrate Zoology, including Entomology, Comparative Anatomy, of Agriculture, of Botany, and of Geology. The University Library, with its 250,000 bound volumes, 40,000 pamphlets, and 600 current periodicals and transactions, is likewise as freely open to medical students as to other university students.

Through the generosity of an anonymous giver, the University has been enabled to erect a building especially designed for anatomy, histology, embryology, and physiology. The building is constructed of Ohio sandstone, similar to the library and law school. The general form is that of an E, 160 feet long, with wings 40 feet square.

In the cellar are situated the cold-storage, embalming, cremating and storerooms, also a large room 40 feet square for aquaria, projection, etc.

In the basement are the ventilating and cold-storage machinery, a large lecture and two recitation rooms, besides the lower part of the large amphitheatre.

On the first floor are located the cloak-rooms for men and women, office, library, faculty room, two recitation rooms, upper part of the large amphitheatre, assembly room and the office of the Professor of Histology.

The second floor is devoted to the departments of histology and physiology, each with a large general laboratory, a research laboratory, preparation rooms and private laboratories for the staff of instruction.

The third floor consists of the general and special dissecting rooms, study room, amphitheatre, besides rooms for the staff.

The attic is utilized for photography, the preparation of skeletons, and for storage.

The greatest pains have been taken for ventilation. The lighting is almost perfect in all the rooms.

DEPARTMENTS, METHODS AND FACILITIES.

ANATOMY.

The anatomy is given in both the first and second years. The work consists of section demonstrations and dissection, special attention being given to practical work in the laboratory. All the laboratory work is concentrated into the first half-year. By thus enabling the student to devote a large amount of time continuously to the work, it is believed the best results are obtained.

During the first year, first half, thirty-two and a half hours per week are devoted to laboratory work. The class is divided into three groups, one assigned to the dissection of the head and neck, one to the upper extremity and one to the lower extremity. These starting simultaneously in September, study first the bones of their part and then take up its dissection. Upon the completion of one part, the bones and dissection of another part are taken up in a similar way.

During the second year, first half, twenty-five hours per week are devoted to laboratory work. The student is expected to dissect, the thoracic viscera, abdominal viscera, assigned regions and special parts. Upon completing these, there will be an opportunity to repeat any of the required work, or to do advanced work.

During the second year, second half, there will be two demonstrations per week to small sections of the class, on Topographical and Regional Anatomy. In these, special dissections will be shown to the students, and their attention called to the practical application of Anatomy to Medicine and Surgery. The structure, connections, and relations of the thoracic and abdominal viscera will be demonstrated twice a week to small sections in a similar way. ●

In the first year a complete skeleton is loaned to each two students. During the two years, the student is required to make at least one complete dissection of the human body. The dissecting material is sufficient, thoroughly embalmed, and is kept in cold storage, so as to be ready for use when needed. All the laboratory work is under the constant supervision of the department. The instructors give frequent quizzes to each student upon the various parts of his dissection as his work progresses. At intervals they also give demonstrations to small groups of students upon the work which they have just finished. And upon satisfactory completion of a part a practical oral examination is given upon it by the head of the department. The work is personal and practical, each student being independent of the others, so that those with special training or ability are in no way retarded by the slower members of the class. The object of the course is to teach not only the structure, connections, and relations of the parts of the body, but also to train the student in methods of scientific work, observation and thought. The students are encouraged to make careful notes and drawings, and to record all variations from their text-book descriptions. For this purpose they are furnished with outline record charts.

Those who have satisfactorily completed the required work, and others properly qualified, will be given opportunity to do advanced and original work.

HISTOLOGY AND EMBRYOLOGY

As indicated by the following courses, this department offers elementary and advanced instruction in the theory and use of the microscope and its accessories, in photo-micrography, in vertebrate histology and vertebrate embryology; and opportunities for research in all these subjects.

The material equipment consists of a good supply of modern microscopes, camera lucidas, polariscopes, micro-spectroscopes, photo-micrographic cameras, and other special apparatus are in sufficient numbers to give each student opportunity for personally learning to use them, and for applying them to any special study in which they

are called for. The general and research laboratories are large, and are equipped with microtomes, incubators, aquaria, etc. The collection of histologic and embryologic specimens is extensive and constantly increasing. Sets of typical specimens are available for study and comparison by the students.

The aim of the department is to bring the student into direct contact with the truths of nature, and hence, while there are lectures to give broad and general views, there is a large amount of laboratory work in which the facts are learned at first hand, and the methods and manipulation necessary for acquiring the facts are practised by each student. It is recognized that less ground can be covered in a given time in this way, but it is believed, and experience has confirmed the belief, that the intellectual independence and power to acquire knowledge direct from nature which is gained by this personal work is of far higher value than the facts and theories that might be learned in the same time from books and lectures alone, or from specimens prepared by some other individual.

This lake region with its rich and varied fauna is especially favorable for investigations in the histology and embryology of all the main groups of vertebrates; and the proximity of the abattoirs in the city make it possible to obtain material for the study of the development of the sheep, cow and pig. The clinic and the Veterinary College supply material for the embryology of the cat and dog, so that the opportunities for research upon the development of the domestic animals are excellent. Every encouragement is given for the fullest utilization of these opportunities.

Microscopy.—The first two weeks of the course are given to a study of the theory and manipulation of the modern microscope and its accessories, the underlying principles involved in the preparation, mounting, and study of microscopic objects.

Histology.—This part of the course includes the study of the fine anatomy of man and of the domestic animals, and also the fundamental methods of histologic investigation and demonstration with the microscope.

Embryology.—This deals with the elements of the development of man and of the domestic animals. For ease of demonstrating segmentation, the formation of the germ layers and the organs, the amphibian egg is studied. Then follows a short study of the developing hen's egg to illustrate meroblastic segmentation and to make intelligible some of the phases of mammalian embryology. The main part of the course, however, is devoted to mammalian development. Gravid uteri are obtained from the abattoirs, and each student has the opportunity to dissect the placenta, fetal membranes, umbilical cord,

and the fetus itself, demonstrating among other things the main features of the fetal circulation. For the microscopic study, the department is well supplied with complete series of embryos of the chick, pig, cat, calf, etc., and each student has for study four complete series representing the principle steps in histogenesis and the development of the organs.

PHYSIOLOGY AND NEUROLOGY.

Of the three general courses given in this department, Physiology, Vertebrate Zoology, and Neurology, each covering about one-third of the first year, medical students take only the lectures of the first and third.

Physiology, Course 1.—Two lectures a week until the Christmas recess. The title of this course is employed in the absence of any single word fully indicating its scope. It really constitutes an introduction to the study of the structure, functions, and relationships of man and other vertebrates.

Since a large part of physiology is based upon experiments upon animals, there is given first an outline of the animal kingdom, with special reference to the forms commonly used by physiologists. The anthropoid apes (gorilla, chimpanzee, orang, and gibbons) are considered somewhat fully on account of their numerous resemblances to man, among others the arrangement of the cerebral fissures and the possession of the cecal appendix.

The study of function is begun with the biceps the several uses of which are demonstrated upon apparatus and the living muscle. Special attention is paid to points not infrequently neglected, the combinations and counteractions of muscle and the economics of levers in the body. At least one lecture is devoted to each of the following topics: Human locomotion, ciliary action, and the mechanics of circulation and respiration. About one-half of the course is given to the development, structure, and functions of the nervous system and sense organs. Among the experiments are the action of the phrenic nerve, the relations of the vagus to respiration and cardiac inhibition, the behavior of the decerebrized frog, and the demonstration of the motor areas of the cerebral cortex.

The means of illustrating this course include a full-sized manikin, a complete set of the Auzoux models, a "phantom brain," other models, and apparatus and charts.

Neurology, Course 3.—Two lectures per week after the Easter recess. There are considered (*a*) the various modifications of the vertebrate brain; (*b*) the structure and peculiarities of the human

brain ; (c) the human cerebral fissures as criteria of zoologic or racial affinity, as indexes of physical or mental quality or power, and as boundaries of the cortical areas recognized by Flechsig and others. During this course is given a demonstration of the methods removing and preparing the human brain for the elucidation of morphologic points. For the illustration of this course there are numerous diagrams representing actual preparations of the brains of man and other vertebrates. The neurologic division of the museum comprises about 1,497 preparations, distributed as follows, in round numbers: Human adults, 420; human embryo and fetal, 210; apes and monkeys, 282; other mammals, 400; other vertebrates, 185.

In both courses the members of the class have at all times free access to the lecture room, where are kept standard manuals, treatises, and monographs.

Opportunities for research are offered, especially in respect to the heart and the brain.

COMPARATIVE PHYSIOLOGY.

The instruction in this department is carried on by means of lectures, recitations, and practical work in the laboratory.

The lectures are illustrated by numerous lantern slides; practical demonstrations form a component part of the exercises wherever possible, and the relationship of physiology to practical medicine is thoroughly emphasized.

In the laboratory a few exercises are devoted to the physiology of the digestive processes and of the blood; the remainder of the work being devoted to the physiology of the nervous, muscular and circulatory systems. The equipment includes kymographs, sphygmographs, sphygmometers, cardiographs, tambours, centrifuges, microscopes, and other apparatus essential for complete and satisfactory work.

Students are required to take notes, and to hand in their reports accompanied with the tracings and other data obtained from their experiments for inspection and correction.

MATERIA MEDICA.

In this department the work required of medical students consists of a laboratory course only, to serve as an introduction to the lecture and clinical courses given in New York during the third and fourth years. The student is made familiar in this course with the physical and chemical properties of a selected number of drugs; incompatibilities are demonstrated, and the essentials of prescription-writing

explained. A large assortment of crude drugs and many of their various preparations are available for examination.

The work in this course consists of the study of a selected group of inorganic drugs ; the study of certain of the organic drugs and their official preparations ; in making pharmaceutical preparations, such as syrups, emulsions, spirits, liniments, tinctures, fluid extracts, extracts, ointments, pills, and others. Some exercises will also be devoted to the study of the direct physiological-action of a few selected drugs upon some of the lower animals.

In their study, the students are required to write concise notes of the physiological action of the drugs examined and to make tests of their incompatibility. In addition to this each student will have practical experience in writing and compounding prescriptions. The importance of a discriminating and accurate system for dispensing medicines is thoroughly emphasized.

PHYSICS.

The instruction in physics is by means of lectures throughout the year. In these lectures the general laws of Mechanics and Heat, Electricity and Magnetism, and Sound and Light are presented. The very large collection of lecture-room apparatus possessed by the department makes it possible to give experimental demonstrations of all important phenomena. The arrangements for experimental work are most complete. Ordinary illuminating gas, acetylene, oxygen and hydrogen, compressed air, water and steam, blast and vacuum are within easy reach, and electric currents from alternating and direct current dynamos and from storage batteries are available. A masonry pier 4 x 12 feet permits the use in the lecture room of delicate apparatus that could otherwise be used only in the laboratory. A small turbine on the lecture table furnishes power for a variety of experiments. Lanterns with lime or electric light are always ready for use when they can in any way aid a demonstration.

The required course (7) in physics for medical students consists of two lectures a week throughout the first year, and the reading of a text-book. Note-books prepared by members of the class are read and graded at frequent intervals. A longer course (26), consisting of two lectures a week, two recitations a week, and one afternoon in the laboratory, is likewise open to medical students, and all those who can find the time to do so, are urged to take this course in place of the required work mentioned above. It should be chosen in preference to the latter by all who wish to prepare themselves for advanced work in the biological sciences. The lectures in this course

are supplemented by thorough drill upon the principles of the science, and this, together with the laboratory practice, affords opportunity for a much more adequate knowledge than can be obtained from any course that consists solely of lectures.

During the second term the department offers a course in practical photography (Physics, 9; 2 hours), consisting of lectures and laboratory practice. This course is open to students of medicine under the conditions stated upon page 144.

CHEMISTRY.

Inorganic Chemistry.—The elements of Inorganic Chemistry are taught by lectures, laboratory work, and recitations from a text-book. Careful attention is given to the writing of chemical equations and to the solution of chemical problems. Experiments illustrating the principles discussed in the text-books are performed in the laboratory by each student.

Qualitative Analysis.—The qualitative analysis begins with the study of those reactions of the elements and their compounds which are used in their reduction. This is followed by the practical application of the knowledge thus gained to the analysis of unknown substances, both in the solid form and in solution.

Organic Chemistry, or the Chemistry of the Compounds of Carbon.—In this course the study of the typical compounds of carbons, their properties, reactions, and relations to each other, is taken up, especial attention being given to those organic compounds, which are of physiological importance. The course consists of lectures and recitations, supplemented by frequent written examinations. The lectures are fully illustrated by experiments, specimens of the compounds considered, and charts.

Toxicological Chemistry.—This course is intended to serve as an introduction to the methods employed for the separation and identification of the common poisons.

Physiological Chemistry.—The work in this course comprises the study of the chemistry of the proteids, carbohydrates and fats, and of the compounds found in the animal body which are of physiological and pathological importance. The method of instruction is by lectures, recitations, and laboratory work, with frequent written reviews. In the laboratory the student separates from the various animal fluids and organs the chemical compounds which they contain, studies their properties, reactions, and products of decomposition, and thus familiarizes himself with the methods of isolation and identification of these products.

The above courses in Chemistry are required of all students in medicine. Other advanced courses are open to properly qualified students in medicine, and especial facilities for research work in chemistry are at their disposal.

BACTERIOLOGY.

The instruction in Bacteriology is given by means of lectures, recitations, and laboratory work. The bacteriological laboratories are well supplied with the best modern apparatus. The student will, under proper supervision, prepare culture media, make cultures, and study the morphology of bacteria in both the fresh (living) condition and in stained cover-glass preparations. In fact, all of the technique necessary for a practical working knowledge in bacteriology will be carefully covered. The more important species of pathogenic bacteria will be studied. The special methods which are necessary for diagnosing such diseases as tuberculosis, anthrax, glanders, and diphtheria will receive careful attention. Disinfection, sterilization, the means by which pathogenic bacteria are disseminated, protective inoculation, and other kindred subjects will be considered.

GENERAL PATHOLOGY.

The course in pathology consists of lectures, recitations, and laboratory work in pathological histology. The student will also be given instruction in describing gross pathological specimens, but the major part of the work in the laboratory will consist in studying sections of diseased tissue and making drawings from the same. In this course it is expected that the student will become familiar with the terms used in morbid anatomy together with a definite knowledge of the more important changes found in inflammation and the various forms of infiltrations and degenerations.

SURGERY.

Surgery.--Two hours weekly, throughout the year, lectures and recitations. The course is given to small sections, and is intended to familiarize the student with the principles of General Surgery and Pathology, and to ground him in the surgical diseases, tumors, and fractures, and the technique of operative asepsis and antisepsis, and of operation, dressings, and methods.

MEDICINE.

No didactic lectures are delivered, their place being taken by recitations from a standard text-book. Students also take up the

subject of normal physical diagnosis in the latter part of the course.

Recitations.--The study of medicine proper is begun with systematic recitations from Lockwood's *Practice of Medicine*, an elementary text-book. In these recitations the nomenclature, etiology, pathology, and symptomatology of typical cases of diseases are considered, the question of treatment not being taken up until the Junior year in New York.

Physical Diagnosis.--Toward the end of the second-year course of Medicine, Normal Physical Diagnosis of the chest is taught in twelve lessons, some abnormal cases being introduced for comparison. For the above work, the class will be divided into sections of about ten each.

OBSTETRICS.

Instruction in obstetrics consists mainly of recitations from a standard text-book, these recitations covering the anatomy of the internal genitalia and pelvis, ovulation, menstruation, signs of pregnancy, the physiology, mechanism, and clinical course of normal labor, and the care of mother and child during the puerpium. Whenever necessary, these recitations will be illustrated by plates, casts, and demonstrations upon the obstetric manikin, etc.

SCHEDULE AND SUMMARIZED STATEMENT.

In this schedule the Counts or University hours are given on the following basis: One recitation or lecture weekly for one term or half-year gives a credit of one; for laboratory work it requires two and one-half actual hours weekly for a term or half a year to secure a credit of one. In the courses of instruction following the schedule, the actual time required each week of the student at lectures, recitations, and laboratory work is stated.

(As given at Ithaca.)

<i>Freshman Year.</i>	No. Course.	1st Term.	2d Term.
Anatomy -----	1 -----	13 -----	-----
Histology -----	1 -----	-----	8 -----
Physiology -----	1 -----	1½ -----	-----
Physiology, Lectures -----	21 -----	-----	3 -----
Physiology, Recitations -----	20a -----	-----	3 -----
Neurology -----	3 -----	-----	1½ -----
Physics -----	7 -----	2 -----	2 -----
Chemistry -----	3 -----	4 -----	-----
Qualitative Chemical Analysis -----	8 -----	-----	2 -----

<i>Sophomore Year.</i>	No. Course.	1st Term.	2d Term.
Anatomy	2	10	—
Anatomy	3	—	1
Anatomy	4	—	1
Organic Chemistry	32	3	—
Physiological Chemistry	40	—	2
Physiological Chemistry	41	—	2
Toxicology	68	1	—
Physiology, Lectures	21	—	1
Physiology, Recitations	21a	—	2
Physiology, Laboratory	22	—	2
Materia Medica	26	2	—
Medicine	9	—	2
Surgery	10	2	2
Obstetrics	11	—	2
Pathology	40	4	—
Bacteriology	43	—	6

Junior Year. For subjects, see page 256, as given in New York City.

Senior Year. For subjects, see page 257, as given in New York City.

SUMMARY OF COURSES OF INSTRUCTION.

First Year.

1. **Anatomy.** Laboratory work with section demonstrations and recitations; thirty-two and one-half actual hours weekly from September to February. The whole of Course 1 is required of first-year students in Medicine; for students in Arts, the course may be divided. Assistant Professor KERR, Instructors POHLMAN, COHOE, ABBOTT, Assistant Demonstrators HENDEE, HARRIS, ———.

1. **Microscopy, Histology, and Embryology.** Two lectures, two recitations, twelve hours' laboratory work weekly for the second half-year. Professor GAGE, Instructor THRO, Assistants HILTON, ———, WISMAR, ———, and ———.

(The work in Microscopy begins February 2, and continues till February 14; the Histology begins February 16, and continues till April 25; the Embryology begins April 27, and continues till June 5.)

1. **Physiology.** First half year until the Christmas recess. Two lectures per week. T., Th., 11. Professor WILDER.

3. **Neurology.** Easter recess until end of year. Two lectures per week, T., Th., 11. Professor WILDER.

21. **Physiology.** Three lectures each week. Second half-year. T., Th., and F., 10. Professor FISH.

20a. **Recitations in Physiology.** Three hours each week. Second half-year. In assigned sections. Assistants BUNKER, HOOBLER, JOHNSTON.

7. **Elementary Physics.** Two lectures, with experimental demonstrations, weekly throughout the year. M., W., 9. Dr. SHEARER.

3. **Introductory Inorganic Chemistry.** Two lectures, two recitations, and five hours of laboratory work weekly. First half-year till Christmas recess. Lectures, M., F., 11. Recitations, M., 10, F., 12. Laboratory, T., 8-11, Th., 8-10. Professor TREVOR and Dr. JESSEL; Messrs. ROOT, FOWLER, and ———.

8. **Qualitative Analysis.** One lecture and five hours of laboratory work weekly. Second half-year. Lecture, S., 12. Laboratory, W., 10-1, Th., 8-10. Professor DENNIS and Dr. WHITTELYSEY; Messrs. BURROWS, GEER, ———, and ———.

Sophomore Year.

2. **Anatomy.** Laboratory work with sections, demonstrations and recitations, twenty-five actual hours weekly. September to February. Assistant Professor KERR; Instructors POHLMAN, COHOE and ABBOTT; Assistant Demonstrators HENDEE, HARRIS. The whole of Course 2 is required of second-year students in Medicine; for students in Arts the course may be divided.

3. **Topographical and Regional Anatomy.** Two section demonstrations weekly. February to June. Dr. HENDEE. (Open to those students in Arts who have had Course 1.)

4. **Thoracic and Abdominal Viscera.** Two section demonstrations weekly. February to June. Assistant Professor KERR.

6. **Advanced and Research Work.** Laboratory work eight or more actual hours per week. Assistant Professor KERR.

4, 5, and 6. **Advanced and Research Work in Microscopy, Histology and Embryology, and Cytology.** Laboratory work, eight or more hours per week, with seminary. Professor GAGE.

21. **Physiology.** The Functions of the Muscular and Nervous Systems and Sense Organs. Three lectures each week. April 15 to June 1. T., Th., and F., 10. Professor FISH.

21a. **Recitations in Physiology.** Two hours each week. Second half-year. In assigned sections. Assistants BUNKER, HOOBLER, JOHNSTON.

22. **Physiological Laboratory.** Five hours each week. Second half-year. In assigned sections. Professor FISH, Assistants BUNKER, HOOBLER, JOHNSTON, WILBUR.

24. **Research and Advanced Work in Physiology.** See University Register.

32. **Elementary Organic Chemistry.** Two lectures and one recitation weekly. First half-year. Lectures M., W., 12. Recitations in assigned sections F., 9, and 12. Assistant Professor ORNDORFF and Mr. TEEPLE.

40. **Physiological Chemistry**, Two lectures or recitations weekly. Second half-year. M., T., W., Th., 12. Assistant Professor ORNDORFF, MR. TEEPLE.

41. **Physiological Chemistry**. Five hours laboratory work weekly. Second half-year. M., and T., 2-5, W., and Th., 2-4. Assistant Professor ORNDORFF, Mr. TEEPLE and Mr. RUSSELL.

68. **Toxicological Chemistry**. Two and one half hours laboratory work weekly. First half-year. T., and Th., 2-5. Assistant Professor CHAMOT and Mr. RUSSELL.

Special facilities are provided by the Chemical Department for advanced and research work, in chemistry. For a description of these courses see the University Register.

26. **Materia Medica and Pharmacy Laboratory**. Five hours each week. First half-year. Professor FISH, Assistants BUNKER, HOOBLER, JOHNSTON, WILBUR.

28. **Advanced and Research Work in Materia Medica**. (See University Register.)

40. **Pathology**. Two lectures or recitations and six hours laboratory work each week. First half-year. Lectures M., T., 9. Laboratory work in assigned sections. Professor MOORE, Instructor BURNETT, and Mr. ———. This course is open to students who have had or are taking Course 1 in Microscopy.

43. **Bacteriology**. Two lectures and ten hours laboratory work each week. Second half-year. Lectures M., T., 9. Laboratory work in assigned sections. Professor MOORE, Assistants RUGGLES and WHITE.

44. **Research in Bacteriology**. Laboratory work with lectures and seminars throughout the year. Professor MOORE. The course is designed for those wishing to undertake original work in Bacteriology preparatory to practical work in bacteriological lines, such as exist in health department laboratories. This course is open to students who have taken Course 43 or its equivalent in some other university. Elementary chemistry and a reading knowledge of French and German are indispensable for successful work in this course.

45. **Research in Pathology**. Laboratory work throughout the year. Professor MOORE and Instructor BURNETT. This course is open to students who have taken course 40 and have taken or are taking course 43, or the equivalent in some other university.

9. **Medicine**. Two recitations weekly. Second half-year. Dr. PAUL R. BROWN.

10. **Surgery**. Two lectures or recitations weekly throughout the year. Dr. COVILLE.

11. **Obstetrics**. Two recitations weekly. Second half-year. Dr. PAUL R. BROWN.

**Seven Year Course for the Degree in Arts (A.B.), and in
Medicine (M.D.)**

As a liberal education in the arts and sciences is of great advantage to prospective students of medicine, all who can are urged to take the freshman, sophomore, and junior years in the Academic Department at Ithaca. After the completion of these years in the Academic Department (in which all the work is elective), the student is permitted to elect, as the fourth year of his A.B. course, a year's work in the Medical Department at Ithaca. He may then take his fifth year of work—the second of the medical course—either in Ithaca or in New York, but he must take the last two years of the medical course in New York. In this way he will obtain the A.B. degree at the end of four years, and the M.D. at the end of seven years of study. This is possible, because the first two years of the medical course in New York are offered in duplicate at the University in Ithaca.

Students who have taken the A.B. degree, as above, will, if they have anticipated in the Academic Department scientific studies prescribed in the medical course, be admitted to advanced standing in the Medical College in New York (see p. 219)

REQUIREMENTS FOR ADMISSION.

For admission to the Ithaca division of the Cornell University Medical College, a medical-student certificate issued by the Regents is required. (For details, see pages 33-52.) No student is admitted except at the beginning of the college year in September.

For admission to the seven-year course for the degree in Arts, (A.B.) and in Medicine, (M.D.) a student must regularly enter the course in Art (see page 80) as well as in Medicine.

RESIDENCE AND REGISTRATION.

The college year is nine months long, extending from the last of September till about the middle of June, and is divided into two nearly equal terms. (For exact dates, see calendar.)

Residence in Ithaca is required of all students. For leave of absence during the session, application should be made to the Secretary, Dr. Kerr.

At the beginning of each term (September 23-25, 1902, and February 2, 1903) students must register with the University Registrar, Room 9A, Morrill Hall. After registration with the University Registrar, they must register with the Secretary of the Medical Faculty, in Stimson Hall.

SCHOLARSHIPS. (See pages 58-61.)**EXAMINATIONS.**

Students are advanced in course from one year to the next upon passing examinations upon the work of that year. As in the academic department, the work of each year is considered final of itself. There is no unnecessary repetition of subjects taught from year to year. According to the usage of the other departments of the University, a student found to be markedly deficient will be dropped from the college.

ADVANCEMENT FROM SECOND TO THIRD YEAR.

Upon the completion of the two years in Ithaca, the student must obtain from the Faculty a statement of all the work which he has done ; and accompanying this statement must be a recommendation that he be allowed to register in the New York division. As a student is not advanced from one year to another in the New York division until all the work of the year is completed, a student from Ithaca cannot enter the third-year class in New York until the entire schedule of the first two years have been successfully completed. For removing any conditions, examinations are held at the beginning of the fall term, both in Ithaca and in New York City. The student is at liberty to take these examinations in Ithaca or in New York City. The examination on a subject in either place is final for that year. That is, the student will not be permitted to try an examination on a subject in Ithaca, and take advantage of the later date for the examination in New York to have a second examination on the same subject in the same autumn.

If the student is deficient in two or more subjects there is no objection to his taking the examination in one or more subjects in Ithaca, and the remaining ones in New York, the same autumn.

MEDICAL SOCIETY.

The Cornell Medical Society is a student organization. Meetings are held on Wednesday evenings of alternate weeks. At these, papers prepared by the members are read, followed by general discussion. The aim is to give mutual aid in gaining general and special medical knowledge, facility in conducting the exercises of the meetings, and in presenting papers and discussions in a clear and forcible manner before an audience.

NEW YORK STATE VETERINARY COLLEGE.

VETERINARY COLLEGE COUNCIL.

For the purpose of making recommendations to the Board of Trustees in regard to the business administration of the New York State Veterinary College, there has been established a Veterinary College Council, consisting of the President of the University [who shall be *ex officio* chairman]; one Trustee elected by the Board; the Treasurer; Director of the College; and two Professors elected by the Faculty. The Council at present is constituted as follows:

JACOB GOULD SCHURMAN, President of the University.

JAMES LAW, Director of the Veterinary College.

MYNDERSE VAN CLEEF, of the Board of Trustees.

EMMONS L. WILLIAMS, Treasurer of the University.

WALTER L. WILLIAMS, } of the Faculty.

VERANUS A. MOORE, }

CHARLES EZRA CORNELL, Secretary.

FACULTY.

JACOB GOULD SCHURMAN, A.M., D.Sc., LL.D., President.

JAMES LAW, F.R.C.V.S., Professor of Principles and Practice of Veterinary Medicine, Veterinary Sanitary Science and Parasitism.

SIMON HENRY GAGE, B.S., Professor of Microscopy, Histology and Embryology.

VERANUS ALVA MOORE, B.S., M.D., Professor of Comparative Pathology and Bacteriology, and of Meat Inspection.

WALTER L. WILLIAMS, V.S., Professor of Principles and Practice of Veterinary Surgery, Obstetrics, Zootechny, and Jurisprudence.

PIERRE AUGUSTINE FISH, D.Sc., D.V.M., Professor of Comparative Physiology, Pharmacology, and Therapeutics.

GRANT SHERMAN HOPKINS, D.Sc., D.V.M., Assistant Professor of Veterinary Anatomy and Anatomical Methods.

SAMUEL HOWARD BURNETT, A.B., M.S., D.V.M., Instructor in Comparative Pathology and Bacteriology.

GERSHAM FRANKLIN WHITE, B.S., Assistant in Bacteriology.
ARTHUR GORDON RUGGLES, B.S.A., Assistant in Bacteriology.
BURT ENGLISH, D.V.M., Assistant in Clinical Surgery.
CHARLES MILLEN, Demonstrator in Anatomy.
FREDERICK FRANK FEHR, Demonstrator in Anatomy.

CHARLES EZRA CORNELL, A.B., LL.B., Clerk of the College.
RALPH MINTHORNE BROWN, A.B., Librarian of the Roswell P.
Flower Library.

**Professors and Teachers in Cornell University who furnish
Instruction to Veterinary Students.**

GEORGE CHAPMAN CALDWELL, B.S., Ph.D., Professor of Agricultural and Analytical Chemistry.

ISAAC PHILLIPS ROBERTS, M.Agr., Professor of Agriculture.

JOSEPH ELLIS TREVOR, Ph.D., Professor of General Chemistry and Physical Chemistry.

HENRY HIRAM WING, M.S., Professor of Animal Industry and Dairy Husbandry.

EMIL MONIN CHAMOT, B.S., Ph.D., Assistant Professor of Analytical and Sanitary Chemistry and Toxicology.

OSCAR PERCY JOHNSTON, Ph.B., M.S., Assistant in Physiology and Materia Medica.

CHARLES ORVILLE WAITE BUNKER, B.S., Assistant in Physiology and Materia Medica.

BERT RAYMOND HOUBLER, B.S., Assistant in Physiology and Materia Medica.

BERT RAYMOND WILBUR, Assistant in Physiology and Materia Medica.

WILLIAM CROOKS THRO, A.M., Instructor in Microscopy, Histology and Embryology.

WILLIAM FREDERIC WISMAR, A.B., Assistant in Microscopy, Histology and Embryology.

WILLIAM ATWOOD HILTON, Ph.D., Assistant in Microscopy, Histology and Embryology.

——— ———, Assistant in Microscopy, Histology and Embryology.

——— ———, Assistant in Microscopy, Histology and Embryology.

——— ———, Assistant in Microscopy, Histology and Embryology.

FOUNDATION.

The New York State Veterinary College was established by an act of the Legislature of March 21, 1894, supplemented by acts of May 10, 1895, and March 4, 1896. By these acts the sum of \$150,000 was appropriated for buildings and equipment and provision made for maintenance. While a State institution, it is administered by the Trustees of Cornell University, and its students profit by courses of study in the University classes and laboratories, and by the University Library.

OBJECTS OF THE INSTITUTION.

The New York State Veterinary College was founded to raise the standard of veterinary instruction and investigation to the level of the most recent advances in biology and medicine. The number of farm animals in this State (9,450,000) and their value (\$131,200,000) with a yearly product in milk alone of over 5,000,000,000 gallons, give some idea of the great interest at stake in the matter of live stock. For the United States a value in live stock of approximately \$3,200,000,000 and a yearly sale in Chicago alone of over \$250,000,000 worth, bespeak the need of all that learning and skill can do for the fostering of this great industry. Another consideration is that the normal permanent fertilization of the soil is dependent upon the live stock kept, and that where there is a deficiency of animals, the productiveness of the land is steadily exhausted; so that the health and improvement of animals and the fostering of animal industry, lie at the very foundation of our national wealth. Another, and no less potent argument, for the highest standard of veterinary education, is its influence upon the health of the human race. With a long list of communicable diseases, which are common to man and beast, and with the most fatal of all human maladies—tuberculosis—also the most prevalent affection in our farm herds in many districts, it is to the last degree important that measures for the extinction of such a contagion in our live stock should receive the best attention of the most highly trained experts.

To justify the liberality of the State in creating this seat of learning, it will be the aim of the College to thoroughly train a class of veterinarians for dealing with all diseases and defects that depreciate the value of our live stock, and with the causes which give rise to them; to recognize and suppress animal plagues, which rob the stock owner of his profits and cause widespread ruin; to protect our flocks and herds against pestilences of foreign origin, and to protect human health and life against diseases of animal origin. It will further aim, so far as it has the means and opportunity, at establishing a center of

investigation, looking towards such improvements in the breeding, care and management of animals, as may enhance their market value and make returns more speedy and profitable; toward discoveries in therapeutics, and the immunization of animals and men from contagion; and toward the production of organic compounds to be employed in diagnosis, treatment and immunizing. So much has been recently discovered in these directions and present knowledge points so unmistakably to coming discovery, that to neglect this field at the present time would be decidedly reprehensible. Apart from discovery, the mere production of reliable articles of these organic products which are coming into increasing demand by the State and the private practitioner, for prevention, diagnosis, and treatment, is an object not to be lightly set aside. The combination, in one institution, of educational facilities with scientific investigation, and the production of the organic extracts to be employed in modern medical methods, is a feature calculated to insure the best work in all departments, and the most exceptional advantages for the diligent student.

BUILDINGS.

The buildings of the State Veterinary College are seven in number, as follows:

The Main Building, 142 feet by 42 feet and three stories high, overlooks East Avenue and an intervening park 220 feet by 300 feet. The walls are of dull yellowish buff pressed brick, on a base of Gouverneur marble, window and door facings of Indiana limestone and terra cotta ornamentation. On the first floor are the museum and rooms of the director, clerk, and professor of surgery. The second floor is devoted to the upper part of the museum, a lecture room, reading room, library, and rooms for professors. The third floor is devoted to laboratories of histology, pathology and bacteriology and the necessary subsidiary offices.

Connected with the main building and forming its east wing is a structure of 90 feet by 40, and one story high. This contains the laboratories and lecture room of anatomy, physiology, surgery, and medicine. Its floors are of impermeable cement, the walls lined by enamelled white brick, and the ceilings covered with sheet steel.

The second extension from the main building is the boiler and engine room, where power is generated for heating and ventilation.

The Surgical Operating Theatre is a separate building in the rear of the main building, and is furnished with room for instruments, water heater, etc. The lighting and equipment and the facilities for demonstration have received special attention.

The General Patients' Ward, 100 feet by 31, is furnished with box and other stalls, heating apparatus, baths, and all necessary appliances. The floor is of impermeable cement, and the ceilings of painted sheet steel. There is also a fodder room of 20 by 30 feet.

The Isolation Ward, 54 feet by 15, has its stalls absolutely separated from one another, and each opening by its own outer door. It has an impermeable floor, with walls of vitrified brick, and painted sheet steel ceilings.

The Mortuary Building has impermeable floor, wall of enamelled brick, and painted steel plate ceilings, and is fitted with every convenience for conducting post mortem examinations and preparing pathological specimens.

Another building of 51 feet by 20 is devoted to clinical uses.

These, with a cottage for the stud groom, complete the list of State buildings erected for the Veterinary College. The equipment has been made as complete as possible for both educational uses and original research.

VETERINARY COLLEGE YEAR.

The Veterinary College year for 1902-1903 begins Friday, September 26, 1902, and closes Thursday, June 18, 1903, being divided into two terms, with one intermission of twelve days at Christmas, and one of ten days in the spring. Students must present themselves for registration in the days fixed for that purpose.

ENTRANCE EXAMINATION.

[All inquiries should be addressed to the Director of the State Veterinary College, Ithaca, N. Y.]

Candidates for admission to the State Veterinary College, except those specified below, must pass satisfactory examinations in the following subjects :

1. English. 2. American History and Civil Government. 3. Plane Geometry. 4. Algebra, as much as is contained in the larger American and English text-books, and any *three* of the following :

5. Elementary French. 6. Elementary German. 7. Latin Grammar and Caesar. 8. Vergil, Cicero, and Latin Composition. 9. Entrance Greek. 10. An amount of any group of the following making the equivalent of two years of high school work : Physics, Botany, Geology, Vertebrate Zoology, Invertebrate Zoology, Advanced French, Advanced German.

For details as to subjects and methods of admission, see pp. 33-53.

ADMISSION ON "REGENTS' VETERINARY STUDENTS CERTIFICATE."

Students are admitted without further examination on the Regents' *Veterinary Student Certificate*.

Full information may be obtained by addressing "Examination Department, University of the State of New York, Albany."

ADMISSION TO ADVANCED STANDING.

Admission to Advanced Standing.—Applicants for admission to advanced standing as members of the 2d or 3d year class must present the necessary educational qualifications for admission to the first year class (see p. 277), and must pass a satisfactory examination in all the work gone over, or offer satisfactory certificates of the completion of such work in other schools whose entrance requirements and courses of study are equivalent to those of this college. No person will be admitted to any advanced class' except at the beginning of the college year in September.

Applicants for advanced standing from other colleges must send or present letters of honorable dismissal, and furnish the Director, Dr. James Law, with a catalog containing the courses of instruction in the institution from which they come with a duly certified statement of the studies pursued and their proficiency therein, and also a statement of the entrance requirements with the rank gained. To avoid delay these credentials should be forwarded at an early date in order that the status of applicants may be determined and information furnished concerning the class to which they are likely to be admitted.

Graduates of veterinary colleges whose requirements for graduation are not equal to those of the New York State Veterinary College may be admitted provisionally upon such terms as the faculty may deem equitable in each case, regard being had to the applicant's previous course of study and attainments. In this connection, attention is called to the legal requirements of academic and professional education for the practice of Veterinary Medicine in the State of New York.

Admission to Advanced and Special Work.—The ample facilities for advanced and special work in the New York State Veterinary College, with allied departments in Cornell University, are open to graduates of this institution and of other colleges whose entrance requirements and undergraduate courses are equivalent.

COURSES IN VETERINARY MEDICINE.

With the view of raising the standard of veterinary instruction, it is intended to establish a graded course extending over four years, as in the various departments of Cornell University, and in the best veterinary schools abroad. As a step toward this a three year course has been laid out. This is a decided advance upon any Veterinary College in America, as the majority of even the three year schools give only five months' instruction per year, amounting to but fifteen months in all ; while with an academic year of nine months, the New York State Veterinary College furnishes a total instruction period of twenty-seven months. Add to this that the Veterinary Practice Statute, prescribing two years of successful high school work as the condition of entering on veterinary studies in 1896, and four years of high school work for admission in 1905, adds more than an additional year to anything demanded on the part of American Veterinary schools, and insures that a student with a mind already trained to mental processes, will acquire much more in the same length of time than the untrained mind can possibly do.

THE COURSE LEADING TO THE DEGREE OF DOCTOR OF VETERINARY MEDICINE.

<i>First Year.</i>	No. of Course,	1st Term.	2d Term.
Inorganic Chemistry -----	I	6	—
Microscopy, Histology and Embryol.---	I	—	8
Anatomy -----	10	8	5
Comparative Physiology Recitations---	20	2	—
" " Lectures -----	21	—	3
" " Laboratory---	22	—	2
Urine Analysis-----	23	—	1
Breeds and Breeding-----	11, 21	1	3
 <i>Second Year.</i>	 No. of Course.	 1st Term.	 2d Term.
Anatomy -----	11	10	—
Pharmacology -----	25	2	—
Materia Medica and Pharmacy-----	26	2	—
General Surgery -----	30	1 1/2	—
Surgical Exercises -----	31	2/3	—
Obstetrics and Zootechnics -----	36	—	4
Medical and Surgical Clinics-----	34-53	—	6
General Pathology-----	40	4	—
Bacteriology -----	43	—	6
Medicine -----	50	3	3
Sanitary Science or Parasitism ---	51 or 52	2	2

<i>Third Year.</i>	No. of Course.	1st Term.	2d Term.
Materia Medica Recitations.....	27	—	2
Therapeutics.....	28	1	—
Surgical Exercises.....	31	$\frac{2}{3}$	—
Surgery (Head, etc.).....	32	2	—
Surgery (Limbs etc.).....	33	—	4
Jurisprudence.....	35	$\frac{1}{3}$	—
Medical and Surgical Clinics.....	34-53	6	6
Infectious Diseases and Meat Inspect'n	41	2	—
Medicine.....	50	3	3
Parasitism or Sanitary Science.....	52 or 51	2	2
Toxicology.....	67	—	1 $\frac{1}{2}$
Research and Thesis.....	—	3	3

Microscopy, Histology and Embryology.

1. **Microscopy, Histology and Embryology.** Two lectures, M., W., at 8; two recitations, Tu., Th. at 8, and 12 hours of laboratory work weekly during the second half-year. Professor GAGE, Instructor THRO, Assistants HILTON, WISMAR and ———.

Microscopy.—The aim is to give a working knowledge of the theory and use of the microscope and its accessories, methods of mounting microscopical specimens, etc. It serves as a basis for all the subsequent work of the department. The work begins February 2 and extends until February 14.

Histology.—This includes the study of the fine anatomy of the domestic animals and of man, and also the fundamental methods of histologic investigation and demonstration. The work begins February 16 and extends until April 25.

Embryology.—This deals with the elements and methods of embryology in the amphibia, in the domestic animals, especially the chick and the pig, and in man. It begins April 27 and extends until June 5.

4. **Research in Histology and Embryology.** Laboratory work 8 or more hours per week with Seminary throughout the year. This course is designed for those preparing theses for the baccalaureate or advanced degrees and for those wishing to undertake special investigations in histology and embryology. Professor GAGE and Instructor THRO.

Course 4 is open only to those who have taken course 1, or its equivalent in some other university. Drawing, (course 1, in Mechanical Engineering, or its equivalent) and a reading knowledge of French and German are indispensable for the most successful work in this course.

Subjects for theses should be decided upon as early as possible so that material in suitable stages of development and physiologic activity may be prepared.

5. **Seminary.** One lecture or seminary each week at an hour to be arranged. At the seminary there will be presented reports of special methods and the results of advanced work. Professor GAGE.

Anatomy.

10. **General and Descriptive Veterinary Anatomy.** Through the year. Two lectures, T., Th., 9; minimum number of hours per week of laboratory work, 10. From Sept. to Feb. there will be five periods of laboratory work. M., W., Th., F. P. M.; S., A. M. From Feb. to June there will be three periods, Th., F., P. M. Sat. A. M. Dr. HOPKINS and Demonstrators.

11. **Descriptive Veterinary Anatomy.** First term. One lecture, F., 9. Laboratory work 20 hours, or more, per week. M., T., Th., F., P. M.; S., A. M. Dr. HOPKINS and Demonstrators.

This course must be preceded by course 1.

12. **Research and Thesis or Special Regional Anatomy.** 7½ hours weekly of laboratory and other research work. Throughout the year. Dr. Hopkins.

Comparative Physiology.

20. **Physiology Recitations.** Two hours weekly. First term. T., W., 10. During the month of January there will be two additional recitations weekly. M., F., 11. Dr. FISH.

21. **Physiology Lectures.** Three hours weekly. Second term. T., Th., F., 10. Dr. FISH.

22. **Physiological Laboratory.** A portion of the course is devoted to chemical physiology. Artificial digestive juices are tested upon the various kinds of foodstuffs by the students and careful notes kept of the various changes. Milk, Bile and Blood are also studied including a spectroscopic examination of the latter. A larger proportion of the work is devoted to a study of the phenomena associated with the circulatory, respiratory, muscular and nervous systems. Students are to obtain and preserve graphic records of these phenomena, wherever possible. Certain experiments requiring special apparatus and care are performed by the instructors as demonstrations, students assisting when possible. Five hours each week, second term. W., 2-5, Th., 11-1. Dr. FISH and Assistants JOHNSTON, BUNKER, HOOBLER and WILBUR.

23. **Course in Urine Analysis.** Laboratory work devoted to the comparative study of urine. Examinations are made of human urine and that of the domestic animals, especially the horse. In addition to the chemical examination some time will be devoted to a microscopic

study of urinary deposits. So far as possible each student is expected to prepare and preserve a series of "typical slides." Three hours weekly, second term. T., 11-1, F., 11-12. Dr. FISH and Assistant WILBUR.

24. **Research and Thesis.** 7½ hours per week throughout the year. Dr. FISH.

Pharmacology.

25. **Materials of Medicine.** A study of the actions and uses of the various drugs and their preparations. A varied collection of the crude drugs and their official preparations is available and examined at the lectures. The course is conducted in the form of lectures with short weekly examinations. First term. Th., F., 10. Dr. FISH.

26. **Materia Medica and Pharmacy Laboratory.** The work in this course consists of the study of a selected group of inorganic drugs; the study of certain crude organic drugs and their official preparations; in making pharmaceutical preparations, such as syrups, emulsions, spirits, liniments, tinctures, fluid extracts, extracts, ointments, pills and others. Some exercises will also be devoted to the study of the direct physiological action of a few selected drugs upon some of the lower animals.

In their study the students are required to write concise notes of the physiological action of the drugs examined and to make tests of their incompatibility. In addition to this each student will have practical experience in writing and compounding prescriptions. The importance of a discriminating and accurate system for dispensing medicines is thoroughly emphasized. Five hours each week. First term. W., 2-5, Th., 11-1. Dr. FISH and Assistants JOHNSTON, BUNKER, HOUBLER and WILBUR.

27. **Recitations in Materia Medica.** Second term. M., W., 10 A. M. Dr. FISH.

28. **Therapeutics.** The treatment and cure of diseases. This subject standing along with pathology, unites physiology, anatomy, chemistry and botany with medicine and surgery. It is therefore desirable to have some knowledge of these branches in order to obtain a full appreciation of the means employed in the restoration of health.

This course must be preceded by the first and second years course, in physiology and pharmacology, or their equivalents. First term, one lecture each week. M., 10. Dr. FISH.

29. **Research and Thesis.** 7½ hours weekly throughout the year. Dr. FISH.

Surgery.

30. **General Surgery.** Two lectures per week, September 26 to December 24, Th., 9, F., 11. Professor W. L. WILLIAMS.

For admission to this course, students must have passed course 10 in Anatomy, course 21 in Physiology, and course 1 in Histology and Embryology.

31. **Surgical Exercises.** Three hours per week of laboratory work from September 26 to December 24. W. (2nd year), F (3rd year), 9 to 12. Professor W. L. WILLIAMS and Dr. B. ENGLISH.

Requirements for admission as in course 30.

This course is given each year, and is pursued by second and third year students, that is, each student takes the course twice.

32. **Surgery of the Head, Neck and Chest.** Two lectures or recitations per week. First term, M., T., 11. Professor W. L. WILLIAMS.

For admission students must have passed courses 30 and 31.

33. **Surgery of the Limbs, Skin, Abdominal Organs, Genito-Urinary System and Castration.** Four lectures or recitations weekly. Second term, M., W., Th., F., 11. Professor W. L. WILLIAMS.

The requirements for admission is the same as for course 32. This course will be given to second and third year students in 1903 and 1904. See course 36 with which it alternates.

34. **Surgical Clinics.** Twelve hours or more per week throughout the year. M., T., W., Th., F., Sat., 2-4 P. M. Professor W. L. WILLIAMS and Dr. ENGLISH.

For second year students attendance is required during the second term, for third year students attendance is required throughout the year.

For admission, students must have passed courses 30 and 31. The time given above includes the medical clinics, conducted by Professor LAW. See course 53, under medicine.

35. **Jurisprudence.** Two lectures per week during the month of January. W., Th., 11. Professor W. L. WILLIAMS.

36. **Obstetrics and Zootechnics.** Four lectures and recitations per week, second term. M., W., Th., F., 11. Professor W. L. WILLIAMS.

For admission, students must have passed courses 30 and 31.

This course alternates with course 33. It will be given to second and third year students in 1902-1903.

37. **Research and Thesis.** Seven and one-half hours weekly throughout the year. Professor W. L. WILLIAMS and Dr. ENGLISH.

Comparative Pathology, Bacteriology, and Meat Inspection.

40. **General Pathology.** First term. This course is open to students who have had Normal Histology and at least one year's work in Anatomy and Physiology. Two recitations and six hours laboratory work each week. Recitations, M. and T., 9. Laboratory, M. and T., 10-1. Professor MOORE, Instructor BURNETT.

41. **Pathology of Infectious Diseases and Meat Inspection.** First term. Open to students who have taken course 40, and have taken or are taking course 43. Two hours. Lectures W. and Th., 9. Professor MOORE.

42. **Experimental Pathology.** This course is optional. It consists in laboratory work designed especially for aiding the students in the diagnosis of infectious diseases. It is open to students who have taken courses 40 and 43, and have taken or are taking course 41. Professor MOORE and Instructor BURNETT.

43. **Bacteriology.** Second term. This course is open to students who have had or are taking course 1 in Microscopy. Two lectures and ten hours laboratory work each week. Lectures, M. and T., 9. Laboratory work, M., T., W., Th., F. and S. Professor MOORE, Assistants WHITE and RUGGLES.

44. **Research in Bacteriology.** Laboratory work throughout the year. Professor MOORE and Assistants WHITE and RUGGLES.

This course is designed for those preparing theses for the baccalaureate or advanced degrees, and for those wishing to undertake original investigation in Bacteriology. This course is open to students who have taken course 43, or its equivalent in some other university. Elementary chemistry and a reading knowledge of French and German are indispensable for successful work in this course.

45. **Research in Pathology.** Laboratory work throughout the year. Professor MOORE and Instructor BURNETT. This course is open to students who have taken course 43, or the equivalent in some other university.

Veterinary Medicine ; Zymotic Diseases, Veterinary Sanitary Science ; Parasites and Parasitism.

50. **Veterinary Medicine, Principles and Practice.** Three lectures or recitations per week throughout two years. M., W., F., 8. Professor LAW.

51. **Contagious Diseases ; Veterinary Sanitary Science.** Two lectures or recitations per week throughout the year. T., Th., 8. Professor LAW.

This course will be given to second and third year students in 1902-1903. See course 52.

52. **Parasites and Parasitism.** Two lectures or recitations per week throughout the year. T., Th., 8. Professor LAW.

Course 52 alternates with 51. It will be given to second and third year students in 1903-1904.

53. **Clinical Veterinary Medicine.** Twelve hours or more per week throughout the year. M., T., W., Th., F., Sat., 2-4 P. M. Professor JAMES LAW and Dr. P. A. FISH.

For second year students attendance is required during the second term, for third year students attendance is required throughout the year.

The clinical work in Medicine and in Surgery is combined. For the amount of time required, see under Surgery, course 34.

54. **Research and Thesis.** Seven and one-half hours weekly throughout the year (see the College Seminary,). Professor LAW.

COMBINATION OF COURSES.

It is earnestly recommended that all students who can, should spend six years in the University, and thereby obtain two degrees. With this end in view the following schemes have been arranged for obtaining the degrees A.B. and D.V.M., also B.S.A. and D.V.M.

A Six Year Course for A.B. and D.V.M. Degrees.

An outline of the work for the first four years for students who desire to obtain a degree in Arts and Science and one in Veterinary Medicine. The fifth and sixth years will be taken entirely in the Veterinary College.

If a student wishes to obtain the two degrees in six years, he must satisfy the entrance to both courses and take during the first four years 36 university hours that count toward veterinary medicine. Of these 36 hours, 29 are included in the arts and science course leaving but 7 university hours that are strictly professional.

The following schedule of studies counting toward veterinary medicine is suggested :

Studies counting toward Veterinary Medicine.		Studies counting toward Arts and Science Degree.
FIRST YEAR.		
None.....	Arts and Science.....	36
SECOND YEAR.		
Inorganic Chemistry.....	6 Arts and Science.....	30

THIRD YEAR.

Histology and Embryology	8	Arts and Science	28
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FOURTH YEAR.

Anatomy	12	Arts and Science	14
Physiology	5		
Urine Analysis	1		
Breeds and Breeding	4		
	—		
	22		

The fifth and sixth years are to be taken as scheduled in the Veterinary College announcement on page 289.

In the elective work in the arts and science courses it seems very desirable that the student should avail himself of certain courses offered in the departments of chemistry, botany, bacteriology and physics. In order to comply with the state law it will be necessary for students taking the combined courses to register in both Arts and Science and in Veterinary Medicine the fourth year, *i. e.*, the senior year in Arts.

A Six Year Course in Agriculture (B.S.A.), and Veterinary Medicine (D.V.M.)

FIRST YEAR.

Courses.	First Term. Hours.	Second Term. Hours.
Botany	I-2 3	3
Invertebrate Zoology and Entomology	I-3-7 2	3
English	I 3	3
Freehand Drawing	I 2	2
Inorganic Chemistry	I 3	3
Drill and Gymnasium as required for freshmen.		

SECOND YEAR.

English	2 3	3
Physics	2a 2	2
Agricultural Chemistry	26 4	4
Comparative Physiology	21	3
Animal Industry and Dairy Husbandry	21-22 3	4
(Elective) Microscopy, Histology and Embryology	I	8

THIRD YEAR.

Political Economy	3	3
Agriculture (Electives)	3-6	3-6
Veterinary Anatomy	10 6	6
Comparative Physiology Lab.	22	2
Materia Medica	26 2	

FOURTH YEAR.

Applied Agriculture.....	I-4	6	6
Thesis.....	2	2
Farm Buildings.....	IO	1	1
Mycology	II	3	3
Urine Analysis.....	23	1
Org·nic and Physiological Chemistry	30	3	3
Pharmacology	25	2	

The fifth and sixth years as given in the Veterinary College announcement on page 279.

TUITION FEES AND OTHER CHARGES.

Tuition is free to *students residents of the State of New York.*

To others the annual tuition fee in the State Veterinary College is \$100, \$55 to be paid at the beginning of the first term, and \$45 at the beginning of the second term. *These fees must be paid at the office of the Treasurer* within twenty days after registration.

Laboratory materials will be charged for at cost, and every person taking laboratory work must deposit with the Treasurer security for the materials to be used.

EXPENSES.

See p. 56.

FELLOWSHIP AND PRIZES.

For fellowship see page 65.

The Horace K. White Prizes.—These prizes, established by Horace K. White, Esq., of Syracuse, are awarded annually to the most meritorious students in the graduating class of the College, as follows : To the first in merit, \$15 ; to the second in merit, \$10.

STUDY FOR PRACTITIONERS.

The very rapid advances made during recent years, in veterinary science, and in facilities and methods for teaching it ; as well as the advantages to be gained by studying a given subject under more than one teacher, make it highly desirable that busy practitioners should be enabled as far as possible to increase their personal knowledge by means of study at such times as they can leave their practice.

The New York State Veterinary College wishes to supply this want as far as practicable and offers every facility at hand to accomplish this end.

Veterinarians legally authorized to practise at their places of residence will be admitted to any class in the college at any time and for such period as they may elect, without entrance examination.

Such practitioners will be wholly free to elect any studies which are being regularly taught at the time, and will be granted all opportunities and facilities offered to regular students so long as such opportunities do not interfere with the instruction of the latter.

No tuition will be required from licensed veterinarians practising in the State of New York. The tuition for non-residents will be adjusted according to the work taken.

Those taking laboratory courses will be required to pay fees to cover the cost of the material used.

This work is offered to veterinarians fundamentally and entirely for the benefits they may derive from increased knowledge of veterinary science and does not contemplate the granting of a degree, certificate or other evidence of responsibility on the part of the college.

General inquiries in reference to such work should be addressed to the Director, while questions relating to studies in a given department may be addressed to the head of the department concerned.

THE COLLEGE OF AGRICULTURE.

AGRICULTURAL COLLEGE AND EXPERIMENT STATION COUNCIL.

For the purpose of making recommendations to the Board of Trustees in regard to the business administration of the Agricultural Experiment Station and the extension division of the College of Agriculture, there has been established an Agricultural College and Experiment Station Council, consisting of the President of the University (who shall be *ex-officio* chairman); the Treasurer; the Director of the College and Station; one Trustee elected by the Board; and two Professors elected by the Faculty. The Council at present is constituted as follows:

JACOB GOULD SCHURMAN, President of the University.

F. C. CORNELL, of the Board of Trustees.

E. L. WILLIAMS, Treasurer of the University.

I. P. ROBERTS, Director of the College and Station.

L. H. BAILEY,
J. H. COMSTOCK, } of the Faculty.

J. H. COMSTOCK, Secretary

FACULTY.

JACOB GOULD SCHURMAN, A.M., D.Sc., LL.D., President.

ISAAC PHILLIPS ROBERTS, M.Agr., Dean of the Faculty of Agriculture, Professor of Agriculture, Director of the College of Agriculture and of the Experiment Station.

GEORGE CHAPMAN CALDWELL, B.S., Ph.D., Professor of Agricultural and General Chemistry.

JOHN HENRY COMSTOCK, B.S., Professor of Entomology and General Invertebrate Zoology.

LIBERTY HYDE BAILEY, M.S., Professor of General and Experimental Horticulture.

HENRY HIRAM WING, M.S., Professor of Animal Industry and Dairy Husbandry.

MARK VERNON SLINGERLAND, B.S. in Agr., Assistant Professor of Entomology.

JOHN CRAIG, B.S., Professor of University Extension Teaching in Agriculture and Horticulture and Supervisor of the Farmer's Reading Course.

GEORGE NIEMAN LAUMAN, B.S.A., Instructor in Agriculture and Horticulture.

ALEXANDER DYER MACGILLIVRAY, Ph.B., Instructor in Entomology.

Other Officers of Instruction and Administration.

JAMES LAW, F.R.C.V.S., Veterinary Science.

GEORGE FRANCIS ATKINSON, Ph.B., Botany.

SIMON HENRY GAGE, B.S., Anatomy.

WILLARD WINFIELD ROWLEE, D.Sc., Plant Histology.

LOUIS ADELBERT CLINTON, M.S., Assistant Agriculturist.

GEORGE WALTER CAVANAUGH, B.S., Assistant Chemist.

HUGH CHARLES TROY, B.S.A., Assistant in Dairy Laboratory.

JOHN WALTON SPENCER, Deputy Chief of Extension Work.

JOHN LEMUEL STONE, B.Agr., Assistant in Agriculture.

ANNA BOTSFORD COMSTOCK, B.S., Lecturer in Nature Study.

MARY FARRAND MILLER, B.S., Lecturer in Nature Study.

JAMES ALFRED FOORD, B.S., M.S.A., Assistant in Dairy Husbandry.

WALTER WAGER HALL, Assistant in Cheese Making.

WEBSTER EVERETT GRIFFITH, Assistant in Butter Making.

ALICE GERTRUDE McCLOSKEY, Matron Junior Naturalist Clubs.

GEORGE WALTER TAILBY, Farm Foreman.

CHARLES ELIAS HUNN, Gardener.

EDWARD ARTHUR BUTLER, Clerk.

JULIA ZITA KELLY, Stenographer—Extension Work.

LIZZIE VERONICA MALONEY, Stenographer—Experiment Station.

The College of Agriculture comprises the Departments of General Agriculture; Animal Industry and Dairy Husbandry; Horticulture and Pomology; Agricultural Chemistry; General and Economic Entomology; the Agricultural Experiment Station; and University Extension Work in Agriculture.

EQUIPMENT.

The University grounds consist of 270 acres of land, bounded on the north and south by Fall Creek ravine and Cascadilla Gorge respectively. One hundred and twenty-five acres of the arable land are

devoted to the use of the Agricultural Department. This part of the domain is managed with not only a view to securing profit, but also to illustrate the best methods of general agriculture. A four years' rotation is practiced on the principal fields; one year of clover, one of corn, one of oats or barley, and one of wheat. A dairy of twenty cows, a flock of sheep, some fifteen horses and colts, and other live stock are kept upon the farm. Nearly all of these animals are grades, bred and reared with the single view of giving object lessons which can be practiced with profit by the students on their return to their homes. A four-story barn provides for housing all the animals, machinery, tools, hay, grain and manures. The stationary thresher, feed-cutter, chaffer and other machinery are driven by steam power. The barn also furnishes many facilities for carrying on investigations in feeding and rearing all classes of domestic animals.

The barn is also furnished with a well-equipped piggery and tool house. Not far from the main barn have been constructed five buildings with suitable yards and appliances for incubating eggs and rearing domestic fowls.

The Agricultural class-room is provided with a collection of grains and grasses, implements of horse and hand culture, and various appliances for carrying on instruction and conducting investigation. The whole plant is managed with a view to the greatest economy consistent with the greatest efficiency in imparting instruction.

The Dairy Building, a two-story stone structure 45x90 feet, was built from an appropriation of \$50,000 by the Legislature of 1893. It provides lecture rooms, laboratories, and offices, besides two large rooms for butter and cheese making, both of which are fully equipped with modern machinery and appliances. Automatic electrical apparatus for controlling the temperature in cheese-curing rooms, refrigerator room, lockers and bath rooms are also provided. The whole building is thoroughly heated and ventilated, and power is furnished by a sixty horse-power boiler and a twenty-five horse-power Westinghouse engine.

The Agricultural Museum occupies rooms on the second floor of Morrill Hall. It contains, 1. The Rau Models, being one hundred and eighty-seven models of plows made at the Royal Agricultural College of Württemberg, under the direction of Professor Rau, and arranged and classified by him for the Paris Exposition of 1867. 2. Engravings and photographs of cultivated plants and animals, obtained at the various agricultural colleges of Europe. 3. A collection of the cereals of Great Britain, being a duplicate of that in the Royal Museum of Science and Art at Edinburg, presented by the British government. 4. A collection of agricultural seeds. 5. A large num-

ber of models representing a great variety of agricultural implements. The class room has been provided with special sets of diagrams and other appliances designed to illustrate the lectures on agriculture.

The agricultural library contains files of bulletins and reports from the experiment stations of the United States and Canada ; it has also a file of the publications of the U. S. Department of Agriculture. The leading works on agriculture are on the shelves. The exchange list includes the principal agricultural periodicals published in this country.

The Horticultural Department Equipment comprises about ten acres of land variously planted, forcing houses, and a museum.

The gardens and orchards contain the fruits which thrive in the north in considerable variety, and in sufficient quantity to illustrate methods of cultivation. Nursery grounds are also attached, in which are growing many species of economic plants from various parts of the world. The fruits comprise something more than sixty varieties of grapes, over fifty of apples, fifty of plums, and other fruits in proportion. A dwarf pear orchard of 300 trees, and other representative orchards, comprise the remainder of the field space, excepting such as is set aside for vegetable gardening and floriculture. There is also a collection of one hundred varieties of hardy roses and various other ornamental and interesting plants.

The forcing-houses are eight in number and cover about 6,000 square feet of ground. These, in connection with store-rooms and pits, afford excellent opportunities for nursery practice, for the study of the forcing of all kinds of vegetables and for some kinds of floriculture. A laboratory with space for forty students, is used for instruction in propagation of plants, pollination, and the commoner green-house operations. There is also a mushroom house 14 x 80 feet and a reading room for horticultural students.

The museum comprises two unique features—the garden herbarium and the collection of photographs. The herbarium, which is rapidly assuming large proportions, containing at present over 11,000 sheets, is designed to comprise all varieties of all cultivated species of plants, and it is an indispensable aid to the study of garden botany and the variation of plants. The collection of photographs comprises over 5,000 negatives with prints representing fruits, flowers, vegetables, illustrative landscapes, glass houses, and horticultural operations. A very large collection of machinery and devices for the spraying of plants is at the disposal of students. Charts and specimens in some variety complete the museum and collection.

The library has files of many of the important horticultural and

botanical periodicals and a good collection of general horticultural literature.

The Entomological Cabinet contains, in addition to many exotic insects, specimens of a large portion of the more common species of the United States. These have been determined by specialists, and are accessible for comparison. The collection includes many sets of specimens illustrative of the metamorphoses and habits of insects. The laboratory is also supplied with a large collection of duplicates for the use of students and is equipped with microscopes and other apparatus necessary for practical work in entomology.

The insectary of the Agricultural Experiment Station affords facilities to a limited number of advanced students for special investigations in the study of the life history of insects, and for experiments in applied entomology.

The Chemical Department is housed in a three-story brick building 126 feet in length and of an average width of 60 feet. The Department is liberally equipped with varied appliances necessary to give instruction to four hundred students in General and Agricultural Chemistry.

ADMISSION.

The following subjects are required for admission : English, History, [the student must offer one of the four following divisions in history, (a) American, (b) English, (c) Ancient, (d) Modern European]. Plane Geometry, Elementary Algebra, and either A, B, or C, as below.

A. Greek and Latin.

B. Latin and either Advanced French or Advanced German.

C. Advanced French, Advanced German, and Advanced Mathematics.

An equivalent of any one of the three groups, A, B, and C. may be offered provided five counts are offered. Latin counts 3, Greek, French, and German 2 each. Advanced Mathematics (Solid Geometry, Advanced Algebra, Plane and Spherical Trigonometry 1, provided, however, that the student before graduation must have passed in one modern language and in Advanced Mathematics if they were not offered for entrance. Students entering deficient in modern language must make up the deficiency as a part of the required work of the freshmen and sophomore years.

An alternate requirement instead of Advanced Mathematics may be offered in Physics, Chemistry, Botany, Geology, and Zoology.

[For details as to subjects and methods of admission see pages 33-73.

For admission to the freshmen class communications should be addressed to the Registrar. See pages 33-53.

For admission to advanced standing from other colleges and universities, and as specials, all communications should be addressed to the Director of the College of Agriculture. See pages 53, 54.

For admission to graduate work and candidacy for advanced degrees, communications should be addressed to the Dean of the University Faculty. [See pages 64-73.]

For admission to the Winter Course in Agriculture, communications should be addressed to Professor John Craig, in charge of the winter course in agriculture.

For admission to the Dairy Course, communications should be addressed to Professor H. H. Wing, in charge of the dairy course.

INSTRUCTION.

Plan of Instruction.

The instruction in the College of Agriculture is comprised in the following general lines:

The Regular Course in Agriculture covers a period of four years. It is designed to afford an education as broad and liberal as that given by other departments of the University, and leads to the degree of Bachelor of the Science of Agriculture (B.S.A.)

THE COURSE IN AGRICULTURE LEADING TO THE DEGREE OF BACHELOR OF THE SCIENCE OF AGRICULTURE.

<i>Freshman Year.</i>	No. Course.	1st Term.	2d Term.
Botany	I, 2	3	3
Invertebrate Zoology, Entomology	I, 7, 3	2	3
English	I	3	3
Freehand and Linear Drawing	D I	2	2
Chemistry	4	3	3

In addition to the above the required Drill and Gymnasium must be taken.

<i>Sophomore Year.</i>	No. Course.	1st Term.	2d Term.
English	2	3	3
Physics	2a	2	2
Agricultural Chemistry	26	4	4
Physiology, Domestic Animals	2I	-	3
Dairy Husbandry, Animal Industry	22, 2I	3	4
or, Horticulture	I, 5	3	3
Elective	—	3-6	2-3
<i>Junior Year.</i>	No. Course.	1st Term.	2d Term.
Political Economy	5I	3	3
Elective	—	I2-15	I2-15

<i>Senior Year.</i>	No. Course.	1st Term.	2d Term.
Applied Agriculture	I-4	6	6
Farm Buildings	IO	I	I
Thesis (see below)	—	2	2
Elective	—	6-9	6-9

The remaining part of the course is elective,* with the condition that at least one-half of the entire elective work of each year, including the thesis and applied agriculture in the senior year, must be in work given by the departments of agriculture and horticulture, and in certain courses in agricultural chemistry, entomology, geology, veterinary science and forestry, origin of soils, diseases of farm animals, zootechny and silviculture a list of which is given on page 304.

The **thesis** must represent some phase of the student's principal line of work during the later years of his course. The subject of the thesis must receive the written approval of the Director of the College, and with such approval must be left with the Registrar not later than the second Friday after the Christmas recess. The copy of the thesis presented to the Faculty shall, if accepted, become the property of the University. A standard form and size for theses has been adopted, said size to be eight by ten and one-half inches.

Arrangements are made to give seminary instruction in the College of Agriculture to teachers and advanced students who desire to pursue Nature-Study.

Students receive instruction not only in the College of Agriculture, but also in the following named Colleges and Departments: Botany, Freehand Drawing, Physics, Political Economy, Physiology, Vertebrate Zoology, Hygiene, Mathematics, French, German, and Drill and Gymnasium; *Geology, Veterinary Science, Civil Engineering and Mechanical Engineering.* The elective work is in italics.

ADVANCED OR GRADUATE WORK IN AGRICULTURAL SCIENCE.

The advanced instruction is designed to fit men for teachers and experimenters, and it may lead to the degree of Master of Science in Agriculture, and to Doctor of Philosophy. The laboratories, dairy building, farm gardens, orchards and libraries give ample facilities for the prosecution of independent work of a high character.

A yearly fellowship of an annual value of \$500 is assigned to the following group of departments: Agriculture, Horticulture and Veterinary Science. See page 65.

* All electives must be chosen by the student at the beginning of the year with the previous written approval of the Director.

THE SPECIAL COURSE.

The special course is intended for young men who cannot well spend four years in preparing themselves to become farmers and who yet wish to avail themselves of technical and practical instruction in modern scientific agriculture.

Persons who are eighteen years of age, and who furnish evidence to the Director that they are able to pursue the work elected in a satisfactory manner, are admitted to the Special Course without examination. The number of hours and the courses elected must be approved by the Director. The course may extend through either one or two years. The required work as given on page 294 is designed for students studying for the degree of B.S.A., and is not for Special Students.

Special Students, during the time they are in the University, enjoy equal advantages in all respects with students who are studying for a degree. They are admitted by a vote of the faculty upon recommendation of the Director of the College. Applications for admission to the Special Course should be made personally or by letter to the Director.

THE WINTER COURSES IN AGRICULTURE AND DAIRY HUSBANDRY.

There are many persons who cannot spend two or more years at college, but who would receive great benefit from lectures and practice during the winter months. To meet the needs of such persons the following courses are offered. They begin the first week in January, of each year and extend through one university term of eleven weeks.

Persons who are of good moral character and seventeen years of age may be admitted by the Director of the College without a formal examination, but are required to file a letter of recommendation and to satisfy the Director that their previous training has been such that they can pursue the studies elected with profit to themselves and credit to the University.

Students may elect either one of the following lines of study.

I. Winter Course in Agriculture.

Prescribed work—Agriculture, 5 hours per week.

Horticulture, 2 hours per week.

Animal Industry, 2 hours per week.

Agricultural Chemistry, 2 hours per week.

Two hours per day of practice in educational work in barns, dairy houses, forcing houses and laboratories.

Elective. A minimum of four hours must be taken in addition to the prescribed work from the subjects named below :

Entomology, 2 hours per week.

Botany, 2 hours per week.

Dairy Husbandry, 2 hours per week.

Poultry Keeping, 2 hours per week.

Political Economy, 1 hour per week.

Diseases of Farm Animals, 1 hour per week.

II. The Winter Dairy Course.

This course is designed primarily to meet the needs of those butter and cheese makers who desire more thorough and comprehensive instruction, and to train these who are looking toward butter and cheese making as a profession. The instruction is given largely with the view of fitting students for conducting factories, while that in the Winter Course in Agriculture is given with particular reference to the needs of the farm dairy.

Not more than fifty students can be accommodated in the building.

The class will be limited to this number and applications should be made at as early a date as practicable in order to insure admission.

The instruction is partly by lectures and recitations, but largely by actual practice in the Creamery, Cheese Factory and Dairy Laboratory, the order being about as follows :

Lectures on milk and its products, 2 hours per week.

Lectures on subjects related to dairying, 10 hours per week.

Cheese room practice, twice weekly, 4-6 hours each.

Butter room practice, twice weekly, 4-6 hours each.

Dairy laboratory practice, twice weekly, 2-4 hours each.

Problems and book-keeping, 2 hours per week.

CALENDAR.

The entrance examinations for students in the Regular Course are held in September and June. The instruction begins in the first term, September 27, 1902 ; in the Winter Course in Agriculture and in the Dairy course, January 1, 1903. Students may be excluded if not present at the beginning of the term.

For further particulars and for a special announcement which will be sent on application, address I. P. Roberts, Director of the College of Agriculture, Cornell University, Ithaca, N. Y.

FEES AND EXPENSES.

Tuition is free, see page 55.

Incidental fees are required as follows :

Post-graduate students	\$7 50	per term.
Regular students, 3d and 4th years.....	7 50	“
Special students	7 50	“
For New York winter course students in Agriculture..	5 00	“
For New York winter course students in Agriculture electing practice in Dairy Husbandry	12 50	“
For Winter Dairy Course students.....	15 00	“
For Winter Course students in Agriculture from out- side New York State.....	30 00	“

Deposits are required in the various laboratories where work is taken ranging from \$1.50 to \$10.00 per term according to the amount and nature of the work.

SYNOPSIS OF COURSES.

Agriculture.—The instruction in Agriculture proper treats of soils and their preparation ; fertilizers ; harvesting and marketing general and special crops ; laying out and improving farms ; drainage and irrigation ; farm buildings and fences, location, plans and construction ; farm yard manures and commercial fertilizers, composition, manufacture, preservation and application ; farm accounts, business customs, rights and privileges ; employment and direction of laborers ; farm implements and machinery, use, care and repairs ; grasses and forage plants ; weeds and their eradication ; swine, sheep and horse husbandry, breeds and breeding, care, management and feeding.

The practice will include setting up and running farm machinery and engines ; the sharpening and repairing of small tools, drawing plans and specifications of farm buildings ; mapping drains, and farm book-keeping.

Dairy Husbandry.—The class-room instruction consists of lectures upon the production of milk and its manufacture into its various products. The dairy house practice will comprise the making of butter and cheese by the most approved methods ; testing of milk as to purity and fat content ; the use and care of centrifugal separators and other creaming devices and the details of creamery and cheese factory management.

Animal Industry.—Lectures will be given on the origin and formation of the various breeds of dairy and beef cattle ; their selection and improvement ; the improvement of native cattle and formation of new breeds ; the composition of stock foods and their combinations

into rations suitable for various purposes. Practice will be given in tracing and tabulating pedigrees ; judging by scale of points ; and computing rations.

Poultry Keeping.—Will include instruction in breeds and breeding ; feeding and management ; incubation, artificial and otherwise ; construction of poultry houses and their management.

Horticulture.—The instruction in Horticulture is given in twelve courses. Course 1 is designed to afford a general scientific foundation for the prosecution of all studies relating to the variation and amelioration of plants under conditions of domestication and cultivation, and it has only indirect reference to Horticultural methods and practices. Course 6 is intended for those advanced students who have had some training in systematic botany, and who desire to familiarize themselves with the complex botany of cultivated plants. Courses 4, 5, 7, 8, 9, 10, are calculated to afford the latest information and methods connected with the commercial cultivation of plants, and in all of them laboratory work and field practice are important factors.

The Experiment Station, which is a department of the University, offers opportunity for students to observe and study the investigations which are being carried on in many branches of animal and plant industry.

A. Agriculture.

1. **Wheat culture** ; preparation of the soil, seeding, insects, harvesting, marketing ; farms, selection and purchase, location with regard to markets, roads, schools, society ; farm buildings, location, plans, construction, liability of contractors ; fields, shape and size ; fences and gates, construction repairs, durability of woods ; farm and public roads, bridges and culverts ; farm yard manures, composition manufacture, preservation, application.

Commercial fertilizers, their composition and use, the adaptation of various fertilizers to various conditions ; purchase and home mixing of chemicals.

Farm accounts ; business customs, rights and privileges, form of contracts, notes, deeds, mortgages ; road laws ; employment and direction of laborers ; swine husbandry, breeds, feeding, management. Lectures. First half-year. Daily, except S., 11. Five hours. *Morrill 19*. Professor ROBERTS.

2. **Inspection of roads, bridges and farm buildings.** Agricultural survey and comparison of farms ; practice in fields, shop and barns. First half-year. T., 2-5. One hour. Professor ROBERTS.

3. **The Horse** ; breeds and breeding, feeding, education, care and driving ; sheep husbandry, breeds and varieties, management and

care, early lamb raising. Farm drainage ; construction, material, cost and utility ; history of plows and plowing ; farm implements and machinery, use, care and repairs ; corn, oat, barley, bean, beet, flax, hop, potato and tobacco culture ; grasses and forage plants ; silos and silage ; weeds and their eradication. Lectures. Second half-year. Daily, except S., 11. Five hours. *Morrill 19*. Professor ROBERTS.

4. **Judging and scoring horses and sheep** ; work in shop and barns ; running engines and other farm machinery ; use of tools, implements, draining, surveys and mapping. Second half-year. T., 2-5. One hour. Professor ROBERTS.

5. **Special Investigations**. For graduates and advanced students. Hours by appointment. Professor ROBERTS.

6. **Seminary work for advanced students**. One hour. By appointment. *Morrill 19*. Professor ROBERTS.

7. **History of Agriculture**. Lectures and reports. Open to seniors and graduates, and to others by special permission. First half-year. M., Th., 9. Two hours. *Morrill 17B*. Mr. LAUMAN.

8. **Economics of Agriculture**. Lectures, discussions and reports. Designed to introduce the student to the methods and results of the application of agricultural and economic principles to agricultural practice. Open to seniors and graduates. Second half-year. M., Th., 9. Two hours. *Morrill 17B*. Mr. LAUMAN.

9. **German Agricultural Reading**. Open to students who have taken or are taking other courses in agriculture and who have a knowledge of German equivalent to courses 1 and 2 in that language. W., S., 9. Two hours. *Morrill 17B*. Mr. LAUMAN.

10. **Farm Buildings**. Study and designing of farm buildings. Required of seniors, open to others by permission. M., 2-4:30. One hour. *Forcing houses*. Limited to fifteen students. Mr. LAUMAN.

11. **For students in Veterinary Science**. Breeding, care and management of horses, sheep and swine. Stables, construction and sanitation. One hour. First half-year. Professor ROBERTS.

12. **For winter course students**. Lectures on the leading subject in courses 1, 3, above, will be given as far as time will permit. Daily, except Saturday, 9. Five hours. *Morrill 19*. Professor ROBERTS and Mr. STONE.

13. **For winter course students**. Practice as in courses 2 and 4, in sections by appointment, one afternoon for each section per week. Christmas recess until Easter recess, 2-5. One hour. Professor ROBERTS and Mr. STONE.

Professor Roberts will be assisted by specialists in giving instruction in some of the subjects named.

B. Animal Industry and Dairy Husbandry.

21. **Animal Industry.** Principles of breeding, history and development, improvement and creation of dairy and beef breeds of cattle ; principles of feeding, care, selection and management of dairy and beef cattle. Second half-year. Lectures. M., W., F., 12. Practice, one hour by appointment. Four hours. *Dairy Building.* Professor WING.

22. **Dairy Husbandry ; milk and butter.** First half-year. Lectures. T., Th., 12. Practice two afternoons by appointment. Three hours. *Dairy Building.* Professor WING.

The work in this course will continue only to the Christmas recess.

23. **Dairy Husbandry ; cheese.** Second half-year. Practice two days per week, 10-1, by appointment. Two hours. *Dairy Building.* Professor WING.

The work in this course will begin immediately after the Christmas recess and continue till the close of the Winter Course in Agriculture.

24. **Dairy Husbandry.** Laboratory and seminary work on special problems. Throughout the year. By appointment, one to three hours. Open only to students who have had course 22. Professor WING.

25. **For Winter Course Students.** Animal Industry and Dairy Husbandry. Principles of breeding, feeding, and selection, care and management of dairy cattle. Daily, 8. Practice one afternoon by appointment. *Dairy Building.* Professor WING.

26. **For Dairy Course Students.** Lectures on milk and its products ; breeding and feeding, daily, 8 ; lectures on subjects related to dairy husbandry, daily, 9 ; practice in butter and cheese making and in dairy laboratory, daily, 10-4:30. *Dairy Building.* Professor WING, Messrs. HALL, GRIFFITH and TROY, assisted by others of the faculty of the College of Agriculture.

27. **Poultry.** Origin, history and classification of the domestic breeds of poultry ; breeding, feeding, and management ; construction of buildings, incubators and brooders. Lectures, T., Th., 12. Practice in running incubators and brooders and in judging and selecting fowls, by appointment. Two hours. Second half-year. *Dairy Building.* Professor WING.

The lectures in this course will be given between the Christmas and Easter recesses. The practice will be given only after the Easter recess.

28. **For Winter Course Students.** The work is the same as course 27. Lectures. T., Th., 12. Practice by appointment.

C. Horticulture.

1. **Evolution of Cultivated Plants.** Lectures and text-book. A discussion of the current hypotheses of organic evolution as applied to the modification of plants, particularly of those in cultivation. Open to students in all courses who have taken courses 1 and 2 in Botany. First half-year. M., W., F., 10. Three hours. *Morrill 19*. Professor BAILEY.

2. **Greenhouse Construction and Management.** First half-year. Lecture, T., 10, *Morrill 19*, and laboratory work in two sections, W. and F., 2-4:30, at *Forcing Houses*. Two hours. Limited to thirty students. Professor BAILEY and Mr. LAUMAN.

3. **The Literature of Horticulture and Landscape Gardening.** A seminary in the literature of the cultivation of plants and of gardens in various parts of the world, with reviews of periodical literature. First half-year. Th., 10. One hour. *Morrill 18 A*. Professor BAILEY and Mr. LAUMAN.

4. **Pomology.** Lectures, text-book and other class exercises upon the cultivation of fruits. Second half-year. M., W., F., 10. Three hours. *Morrill 19*. Professor BAILEY.

5. **Nursery and Orchard Practice.** Deals with the multiplication and subsequent care of plants, grafting, budding, making cuttings, pollination, pruning, spraying, garden tools, etc. Second half-year. Lectures and text-book, T., 10, *Morrill 19*; laboratory work, in two sections, W., F., 2-4:30. *Forcing Houses*. Limited to twenty-four students. Professor BAILEY and Mr. LAUMAN.

6. **Principles of Vegetable Gardening.** Lectures. Second half-year. Th., 10. One hour. *Morrill 19*. Professor BAILEY.

7. **German or French Horticultural Reading.** Open to students who have taken or are taking other courses in horticulture, and who have a knowledge of German or French equivalent to courses 1 and 2 in those languages. T., F., 9. Two hours. *Morrill 17B*. Mr. LAUMAN.

8. **Handicraft.** Practical work in the forcing-houses and gardens, with familiar talks. One or two hours, by appointment. Professor BAILEY, Mr. LAUMAN, and Mr. HUNN.

9. **Investigation** incident to previous courses. For graduates and advanced students. Hours by appointment. Professor BAILEY and Mr. LAUMAN.

Seminaries are conducted when requested by students, and credit may be had for such work. The Horticulturists' Lazy Club meets every Monday evening.

10. **Fruit-Growing.** For Winter Course Students. An examination of the principles of fruit growing with laboratory practice in the propagation of plants. Professor CRAIG and Mr. HUNN.

D. Winter Course in Agriculture.

(*Being a part of University Extension in Agriculture.*)

1. **Agriculture.** Origin and treatment of soils. A study of field crops and farm management devoting as much time as possible to the details of special crops, as corn, potatoes, wheat and oats. Commercial fertilizers, their application to various soils and crops, chemicals used in home mixing. Description of Breeds. Care and management of horses, sheep and swine. An epitome of A. courses 1 and 3. Professor ROBERTS, Mr. J. L. STONE. (A. Course 12.) 9. Daily except Saturday. *Morrill 19.*

2. **For Winter Course Students.** Practice in judging and scoring horses and sheep; work in shops and barns; running engines and other farm machinery. Professor ROBERTS and Mr. STONE. (A. Courses 2 and 4.)

3. **Animal Industry.** Principles of breeding animals, history and development of dairy and beef breeds of cattle. Professor WING and Mr. J. A. FOORD. (B. Course 25.) T., Th., 8, S., 9.

4. **Dairy Husbandry.** Lectures on milk and its products and instruction in butter making. Professor WING and Mr. J. A. FOORD. (B. Course 25.) M., W., F., 8. *Dairy Building.*

5. **Horticulture.** An examination of the principles of fruit culture with laboratory practice in the propagation of plants. Professor CRAIG and Mr. HUNN. (C. Course 10.) T., Th., 11. *White 12.*

6. **Chemistry of the Farm.** A study of soil formation, the composition of plants, and the chemistry of commercial fertilizers and farm yard manures. Hours to be arranged. Professor G. C. CALDWELL and Mr. G. W. CAVANAUGH.

7. **Economic Entomology.** A discussion of the more important insect pests and the special methods of combating them. M., W., 10. *White 12.* Assistant Professor SLINGERLAND.

8. **Applied Botany.** A study of the fundamental principles of how the plant grows; food supply and the influence of external conditions with special reference to cultivated plants. Hours to be arranged.

9. **Poultry Keeping.** A discussion of the domestic breeds of poultry; principles of feeding and management. (B. Course 28.) T., Th., 12. *Dairy Building.* Professor WING.

10. **Diseases of Farm Animals.** This is a special course of lectures arranged and given for the benefit of winter course students by Professor LAW. S., 8. *Veterinary Building.*

11. **The Farm Library.** This course has to do with the selection of a small home library including books of popular science, history and literature. These will be examined and discussed. T., Th., F.,

11. *White 12.* Mrs. ANNA BOTSFORD COMSTOCK.

12. **Special Lectures.** A course of twelve lectures will be given by members of the faculty of the College of Agriculture and heads of departments whose work is somewhat closely allied. These lectures cover a wide range of agricultural knowledge. M., 4:30. *White 12.*

Clubs.—The Agricultural and Horticultural clubs are open to winter course students, who are cordially invited to attend and take part in the discussions.

Courses in addition to A, B, and C, above, that may be elected as "technical agriculture" by regular and special students:

*Agricultural Chemistry (Chemistry 26), p. 164.

" " (Chemistry 27), p. 164.

" " (Chemistry 14b), p. 162.

Entomology (Entomology, Courses *3, 4, 5, 6, *7, 8, 9, 11), p. 176.

*Physiology of Domestic Animals, (Veterinary 20), p. 281.

Zootechny, (Veterinary 36), p. 283.

Diseases of Animals (Veterinary).

Origin of Soils (Geology 32), p. 190.

Silviculture (Forestry 3b), p. 318.

EXPERIMENT STATION.

OFFICERS OF THE STATION:

I. P. ROBERTS.....*Director.*

E. L. WILLIAMS.....*Treasurer.*

E. A. BUTLER.....*Clerk.*

The Agricultural Experiment Station of Cornell University is a Department of the College of Agriculture. Incidentally, students may receive instruction from observing and discussing the experiments which are being carried on. The Federal Law passed March 2, 1887, briefly outlines the object of the Experiment Station in the following words: "To aid in acquiring and diffusing among the people of the

* Required of regular students.

United States useful and practical information on the subjects connected with agriculture, and to promote scientific investigation and experiment respecting the principles and applications of agricultural science.”

It further provides “That bulletins or reports of progress shall be published at said stations at least once in three months, one copy of which shall be sent to each newspaper in the states or territories in which they are respectively located, and to such individuals actually engaged in farming as may request the same as far as the means of the station will permit.” The entire plant of the College of Agriculture is used, as occasion demands, for conducting experiments in animal and plant growth and reproduction, and in applied, comparative and scientific research and investigation.

In pursuance of Chapter 430 of the Laws of 1899 of New York State, provision is made for “giving instruction throughout the state by means of schools, lectures and other University extension methods, or otherwise, and in conducting investigations and experiments : in discovering the diseases of plants and their remedies ; in ascertaining the best method of fertilization of fields, gardens and plantations ; and best modes of tillage and farm management and improvement of live stock ; and in printing leaflets and disseminating agricultural knowledge by means of lectures or otherwise ; and in preparing and printing for free distribution the results of such investigations and experiments, and for republishing such bulletins as may be useful in the furtherance of the work, and such other information as may be deemed desirable and profitable in promoting the agricultural interests of the state.”

NEW YORK STATE COLLEGE OF FORESTRY.

COLLEGE OF FORESTRY COUNCIL.

For the purpose of making recommendations to the Board of Trustees in regard to the business administration of the New York State College of Forestry, there has been established a College of Forestry Council consisting of the President of the University (who is *ex-officio* chairman); the Treasurer; the Director of the College; one Trustee elected by the Board; and one Professor elected by the Faculty. The Council at present is as follows:

JACOB GOULD SCHURMAN, President.
F. C. CORNELL, of the Board of Trustees.
B. E. FERNOW, Director of the College of Forestry.
E. L. WILLIAMS, Treasurer of the University.
———, of the Faculty.

B. E. FERNOW, Secretary.

FACULTY.

JACOB GOULD SCHURMAN, A.M., D.Sc., LL.D., President.
BERNHARD E. FERNOW, LL.D., Director of the College, Dean of the Faculty, and Professor of Forestry.
JOHN GIFFORD, D.Oec., Assistant Professor of Forestry.
JUDSON FREEMAN CLARK, Ph.D., Assistant Professor of Forestry.

SPECIAL LECTURERS.

W. BARTON EVERMANN, Ph.D., Lecturer on Fish Culture and Game Preservation.
W. H. WETMORE, Lecturer on Marketing Forest Crops.
CYRUS P. WHITNEY, Instructor in the Practice of Timber Estimating.

HORACE A. FIELD, Forest Manager.

Professors and Instructors

in Cornell University who furnish instruction to students of Forestry in the Fundamental and Supplementary Branches required :

GEORGE CHAPMAN CALDWELL, B.S., Ph.D., Professor of General Chemistry and of Agricultural Chemistry.

BURT GREEN WILDER, B.S., M.D., Professor of Physiology, Vertebrate Zoology, and Neurology.

JOHN HENRY COMSTOCK, B.S., Professor of Entomology and General Invertebrate Zoology.

EDWARD LEAMINGTON NICHOLS, B.S., Ph.D., Professor of Physics.

JEREMIAH WHIPPLE JENKS, A.M., Ph.D., Professor of Political Economy and Civil and Social Institutions.

LUCIEN AUGUSTUS WAIT, A.B., Professor of Mathematics.

GEORGE WILLIAM JONES, A.M., Professor of Mathematics.

GEORGE FRANCIS ATKINSON, Ph.B., Professor of Botany with special reference to Comparative Morphology and Mycology.

RALPH STOCKMAN TARR, B.S., Professor of Dynamic Geology and Physical Geography.

JOSEPH ELLIS TREVOR, Ph.D., Professor of General Chemistry and Physical Chemistry.

JAMES McMAHON, A.M., Assistant Professor of Mathematics.

WILLIAM RIDGLEY ORNDORFF, A.B., Ph.D., Assistant Professor of Organic Chemistry.

WILLARD WINFIELD ROWLEE, B.L., D.Sc., Assistant Professor of Botany, with special reference to Histology and Systematic Botany.

FRANK FETTER, Ph.D., Professor of Political Economy.

JOHN HENRY TANNER, B.S., Assistant Professor of Mathematics.

HENRY NEELY OGDEN, C.E., Assistant Professor of Civil Engineering.

MARK VERNON SLINGERLAND, B.S. in Agr., Assistant Professor in Economic Entomology.

HEINRICH RIES, Ph.D., Assistant Professor in Economic Geology.

BLIN SILL CUSHMAN, B.S., Instructor in Chemistry.

BERT BRENETTE STROUD, D.Sc., Instructor in Physiology, Vertebrate Zoology and Neurology.

JOHN THOMAS PARSON, Instructor in Civil Engineering.

ELIAS JUDAH DURAND, A.B., D.Sc., Instructor in Botany.

EDGAR BOYD KAY, C.E., Instructor in Civil Engineering.

KARL MCKAY WIEGAND, Ph.D., Instructor in Botany.

ALEXANDER DYER MACGILLIVRAY, Ph.B., Instructor in Entomology.

ROBERT CLARKSON BROOKS, A.B., Instructor in Political Economy.

HUGH DANIEL REED, B.S., Instructor in Economic and Systematic Zoology.

WILLIAM ALBERT RILEY, B.S., Assistant in Entomology.

JOHN EDGAR TEEPLE, B.S., Assistant in Physiological Chemistry.

GEORGE MATSON, B.S., Assistant in Geology.

FOUNDATION.

The New York State College of Forestry was established by an Act of the State Legislature in April, 1898, which act authorizes the trustees of Cornell University "to create and establish a department in said University to be known as, and called, the New York State College of Forestry, for the purpose of education and instruction in the principles and practices of scientific forestry." (Laws of New York, 1898.) In the same act provisions were also made to establish a demonstration forest of not more than 30,000 acres in the Adirondacks. This tract has been located in Franklin County, near Tupper Lake, with Axton (post-office) as headquarters.

While a State institution, the College is administered by the Trustees of Cornell University, and its students profit by courses of study in the University classes and laboratories, and by the University library.

OBJECT OF THE INSTITUTION.

The New York State College of Forestry furnishes instruction in the principles and practices of forestry and provides facilities for the education especially of managers of forest properties.

Forestry is an art, which in the United States, was almost unknown until recently, and is only now beginning to be practiced. It means in the production of woodcrops what agriculture means in the production of foodcrops. While on every soil, if left to nature, some woodcrop grows naturally (except in desert or semi-desert regions), the intelligent direction and skill of the forester is necessary to use the natural factors of production to the best advantage and to produce the largest amount of serviceable material in the shortest time.

Forestry, then, is a business, which attempts to produce revenue from the systematic use of the soil for woodcrops. The College of Forestry furnishes the technical knowledge needful to carry on practical forest management, with special view to the education of business managers.

The State of New York has recognized the necessity of a rational forest policy, especially in the Adirondacks—an area unsuitable for agricultural use and capable only for producing woodcrops. This region is, also, the most important watershed in the State. A large forest area in this region has been acquired by the State, and is being protected and held for systematic forest management. The logical sequence to this beginning of forest conservation, is the establishment of the College of Forestry, where the future managers of State forest property may acquire the necessary technical information, while the “College Forest” will serve to develop and demonstrate the methods of management which are applicable to the whole forest property of the State. The State has recognized this by having employed three of the graduates of the College as “forestry experts” in 1902.

The interests of the State naturally find foremost consideration in the conduct of the College and College Forest, yet the needs of all students of forestry, interested in other directions have due attention. The Federal Government has created extensive forest reservations in the Western Mountains and several states have established reservations. Technical advisers and managers will be needed for these forest tracts. Furthermore, owners of large areas of timber-land, manufacturers of lumber, woodpulp, and others, are beginning to recognize that knowledge and skill are profitable in the management of their properties. Keeping in view these requirements, it is the aim of the College of Forestry to furnish all the needful theoretical and practical instruction which a thoroughly equipped forest manager should have.

While instruction of a higher order must be expected and supplied by a University or College, more elementary instruction may be provided for rangers, logging bosses, woodworkers and others who can profit from such knowledge. This instruction, which could be given in short summer courses in the College Forest, is as needful for a successful inauguration of forestry practice in this country, as the education of fully equipped forest managers, but so far the means at the disposal of the College have not permitted this extension.

Short courses are provided by the College to meet the needs of those who require a cursory acquaintance with the various aspects of forestry as students of political economy, engineering, chemical technology, etc.; prospective owners of woodlands, farmers and others who desire some technical, especially silvicultural knowledge.

The College also supplements popular education on the subject for which it stands, as opportunity arises.

THE COLLEGE FOREST.

The College Forest is managed to fulfill in the broadest sense the functions expressed in the legislative act creating it, namely, to "conduct upon such land such experiments in forestry as it may deem most advantageous to the interests of the State and the advancement of the science of forestry, and may plant, raise, cut and sell timber at such times, of such species and quantities and in such manner, as it may deem best, with a view to obtaining and imparting knowledge concerning the scientific management and use of forests, their regulation and administration, the production, harvesting, and reproduction of woodcrops and earning a revenue therefrom."

The "imparting of knowledge" is interpreted to refer both to the ocular demonstration on the forest area and to the printed word.

The College Forest is also used for practical instruction of students. To this end the junior and senior classes are transferred to Axton in the College Forest, where under the guidance of the professors they are engaged in the application of the theories taught in the classroom.

During the summer vacation opportunity will be given, as far as practicable, to would-be students to become acquainted with forestry work in the College Forest.

EDUCATIONAL MEANS.

The educational facilities and opportunities for the preparatory and basal studies leading to the degree of Forest Engineer are of the best, through the connection of the College of Forestry with Cornell University. The extensive botanical, zoological, especially entomological collections, together with the excellent physical and chemical laboratories of the University and the grounds of the Agricultural Experiment Station, are used in all biological studies, while the unusually complete equipment of the engineering laboratories make the study of these branches both interesting and complete. A library of the best forestry literature has been established and a museum of demonstration objects is being acquired. A selected library is also established at Axton in the College Forest. Excursions are made from Ithaca and from the Adirondacks for the study of different silvicultural and forest conditions, logging operations, etc.

The spring courses of the junior and senior years consist mainly in practical work in the College Forest, where the entire administrative machinery and actual forestry operations on a large scale may be observed by the students.

COLLEGE YEAR.

The College year begins and closes on the same dates as the academic year of the University. For 1902-03 instruction begins September 26 and closes June 15, and students must present themselves for registration on the days fixed for that purpose by the University.

REQUIREMENTS FOR ADMISSION.

The following subjects are required for admission : English, History [student must offer one of the four following divisions in History : (a) American and Civil Government, (b) English, (c) Ancient, (d) Mediæval and Modern European]. Algebra, Plane Geometry, Advanced French, Advanced German, and Advanced Mathematics.

An equivalent in Latin as for entrance to Arts, (see page 37), may be offered in place of Advanced French.

An equivalent in Spanish may be offered in place of Advanced French as follows:

Elementary Spanish.—(a) The rudiments of grammar, including the conjugation of the regular and the more common irregular verbs, the inflection of nouns, adjectives and pronouns, and the elementary rules of syntax. (b) Exercises containing illustrations of the principles of grammar. (c) The reading and accurate rendering into good English of from 100 to 175 duodecimo pages of graduated texts, with translation into Spanish of easy variations of the sentences read. (d) Careful drill in pronunciation and writing Spanish from dictation.

Suitable texts for the elementary work are : Moratin's *El Si de las Ninas*, Caballero's *La Familia de Alvareda*; Alarcon's *El Capitán Veneno*, and *Gil y Zárate*; *Guzmán el Bueno*.

Advanced Spanish.—(a) The reading of from 250 to 400 pages of modern prose from different authors. (b) Practice in translating Spanish into English, and English variations of the text into Spanish. (c) Continued study of the elements of grammar and syntax. (d) Mastery of all but the rare irregular verb forms and of the simpler uses of the modes and tenses. (e) Writing of Spanish from dictation and memorizing of easy short poems.

Suitable texts for the advanced work are : Galdo's *Doña Perfecta*, Valera's *El Pajaro verde*; Alarcon's *El Final de Norma*; Valdés's *José*, and Padre Isla's version of *Gil Blas*.

[For details as to subjects and methods of admission see pages 33-53.]

For admission to the freshmen class, communications should be addressed to the Registrar. See pages 33-53.

For admission to advanced standing from other colleges and universities, and as special students, communications should be addressed to the Director of the College. See pages 53 and 54.

For admission to graduate work and candidacy for advanced degrees, communications should be addressed to the Dean of the University Faculty. See pages 64-73.

Since the forestry literature of the present day is to be found largely in the German and French languages, a ready reading knowledge of both languages, or at least of German, is essential. In order that the technical nomenclature of the sciences which form part of the forestry studies may not be unintelligible to the student, a knowledge of Latin is desirable. The existence of a well organized forestry service in Manila makes knowledge of Spanish a desirable equipment for those considering employment in those parts. A thorough knowledge of mathematical methods is required to follow the lectures on forest mensuration, valuation, regulation, forest statics and forest finance.

In addition to the mental requirements students who expect to become forest managers are advised that a robust physical constitution is needful to endure the hardships often necessarily connected with such positions.

Candidates must be at least *eighteen* years of age. They must have certificates of good moral character, and students from other colleges or universities are required to furnish from those institutions certificates of honorable dismissal.

Candidates for admission must file their credentials and obtain permits for examination at the Registrar's office. The results of the examinations may be ascertained from the Registrar.

Applicants for admission to advanced standing as members of the sophomore, junior, or senior class, must offer satisfactory evidence of sufficient preparation for the class they desire to enter.

Admission to the short synoptical courses is free to all students who furnish evidence to the Director that they are able to pursue the work elected in a satisfactory manner. The conditions applying to special students, who do not desire to take the full course leading to the degree, but wish to take up certain branches, and for graduate work, are found below and on pages 68 and 313. For statement regarding fees and expenses see pages 55 and 314. In general the rules of the University apply to the College of Forestry.

[For additional information address DIRECTOR OF STATE COLLEGE OF FORESTRY, ITHACA, N. Y.]

ADVANCED STANDING.

Students of other institutions having the requisite preparation will be admitted to such classes as their preparation warrants. The first two years being mainly occupied with studies in preparatory or basic subjects, natural sciences, mathematics, engineering, political economy, etc., it is possible to acquire this preparatory knowledge elsewhere and enter upon forestry studies proper in the junior year.

The Forestry courses proper can be readily completed in two years.

SPECIAL STUDENTS.

Under the regulations of the University, persons who are at least 21 years of age and who give evidence of sufficient ability and experience to enable them to carry on with profit University courses in the subjects in which they are interested, may be nominated to the faculty as special students, admitted without examination and permitted to take up such work as they may seem qualified for under the direction of the Director.

Such special students are not considered as candidates for a degree, but may receive, if desired, a statement of the work which they have accomplished. Such students may become candidates for a degree by making up entrance requirements, together with such differences as may exist between the regular course and the special course which they have followed.

But this arrangement is not for the purpose of permitting students improperly prepared to enter the University; it is rather to give opportunity to persons who may already have some knowledge of forestry, but wish to acquire a more exact knowledge of fundamental principles and approved methods, or who may wish to pursue special studies in certain directions of the subject, and may spend with profit a year or more on such special work.

ADMISSION OF GRADUATES.

No special post-graduate courses in forestry have thus far been provided, but opportunities for such post-graduate work either at Ithaca or in the College Forest will be made as candidates appear. (See p. 320.) The question whether the subject of forestry shall be admitted as a basis for the Master's or Doctor's degree has not yet been decided by the University Faculty.

For the regulations of the University regarding admission of Graduates, see pages 64-73.

TUITION FEES AND OTHER CHARGES.

Tuition is free to students who are residents of the State of New York. To others the annual tuition fee in the State College of Forestry is \$100, \$55 to be paid at the beginning of the first half-year and \$45 at beginning of the second half-year. Special students are required to pay \$70 for first half-year and \$55 for second half-year. *These fees must be paid at the office of the Treasurer within twenty days after registration.*

Laboratory materials will be charged for at cost, and every person taking laboratory work must deposit with the Treasurer, security for the materials to be used.

Expenses for text-books, instruments, etc., may be kept within \$25.

In addition to living expenses, which may vary from \$4 to \$10 per week, the student should be prepared to meet the expenses for inspection tours and excursions in the junior and senior years, which may require from \$10 to \$100 in a year. Expenses in the College Forest, including board, lodging and laundry, may be kept within \$6.00 a week.

PLAN OF INSTRUCTION.

The Regular Course leading to a degree of Forest Engineer, is a four-year course, and is intended to prepare men fully to take charge of forest estates, private or state, to advise in administration of such estates, and prepare working plans for the same, to take charge of land and timber departments, and finally to teach the science of forestry in the colleges which are likely in the near future to provide separate chairs for forestry science and practice.

The first two years of this course are mainly devoted to the study of preparatory or basal subjects, natural sciences, mathematics, engineering, political economy, etc., and the last two years to forestry proper.

SYNOPTICAL COURSE.

To meet the requirements of students of political economy and others who desire a survey of the subject of forestry as a matter of general education, a synoptical or introductory course of two hours a week is given during the second term.

This course is open to all comers, requires no special preparation except the intelligence of a general student, and is intended to convey such information as is necessary to understand the position and relation of forests and forestry to the commonwealth, and the general features of the business and art of forestry.

ONE-TERM COURSE.

This short course is intended for special students, farmers, lumbermen, young men who cannot well spend four years in preparing themselves to become foresters and who yet wish to avail themselves of technical and practical instruction in forestry that might enable them to manage their own woodlands more intelligently. Silvicultural problems are mainly treated, the business considerations of forest management having only cursory attention. The course occupies five hours per week during the first term. It may be found desirable for students taking this course to add the spring term of the junior year, devoted to practical work in the College Forest (see p. 319). Admission to this course as stated on p. 312

FIELD WORK.

In addition to short excursions into neighboring woods, to milling and wood manufacturing establishments, etc. during the fall and winter terms of the junior and senior classes, and a longer visit to logging camps during the Christmas vacation, these classes will spend the entire spring term after Easter in the College Forest, at Axton, New York. This term is devoted mainly to practice and field work. The field work includes :

a. *Exploitation and Surveying*.—Inspection of lumber camps, logging operations, transportation methods and mills ; laying out and constructing roads, dividing and marking forest areas.

b. *Silviculture*.—Inspection of and participation in planting, sowing and nursery work, making improvement cuttings and marking out for thinning and for natural reproduction.

c. *Mensuration and Valuation*.—Tree measurement and studies of the rate of growth, timber estimating.

d. *Forest description and regulation*.—Gathering data for working plans, and elaboration of such plans for given areas.

In addition, ample opportunity is given during the freshman and sophomore years for field work in botany, entomology, geology and surveying.

During the spring term in the College Forest the courses on Fish Culture and Game Preservation will also be given.

Persons, not students of the College, will be admitted to the Spring term courses upon paying the tuition fees and furnishing evidence of their ability to profit from their attendance.

Arrangements will also be made at Axton in the College Forest during the summer vacation to enable students of the College and

others to take advantage of the opportunities for becoming practically acquainted with forest-work, and for using the library in preparatory, or reviewing and advanced or research work.

A FOUR YEAR COURSE LEADING TO THE DEGREE OF FOREST ENGINEER.

Special Students, not working for a degree, are admitted for shorter courses, according to their preparation.

The practical courses, beginning after the Easter recess in the junior and senior years, will be given in the College Forest, at Axton, New York. Students must, therefore, arrange their courses in other branches, so as to keep the second term after Easter entirely free for work in the woods.

<i>Freshman Year.</i>	No. Course.	1st Term.	2d Term.
Solid Geom. } (Math.)	7	2	2
Adv. Algebra. }			
Pl, and Sph. Trig. }			
Physics	2b	5	5
Chemistry	4	3	3
Zoology, Invert. and Vert.	I, 2	2	2
Entomology	3	-	2
Botany	I, 2	3	3
Meteorology (Geology)	4	2	-
Forestry	I	-	2

<i>Sophomore Year.</i>	No. Course.	1st Term.	2d Term.
Dendrology (Botany)	9	3	3
Geographical Botany	5	-	1
Economic Zoology	6	3	3
Chemistry	26	4	-
General Geology	2	3	3
Pen Topography (C.E.)	6	-	1
Land Surveying (C.E.)	10	-	4
Political Economy	5I	3	3
Forestry	3a	-	3

<i>Junior Year.</i>	No. Course.	1st Term.	2d Term	
			at Ithaca.	at Axton.
Botany	II	3	-	-
Physical Geography	3	3	2	-
Soils (Geology)	32	2	-	-
Fishculture and Game Preservation	17	-	-	2
Forestry	3b, 13	4	-	4
"	4	-	2	2
"	6, 15	-	2	2
"	7, 14	4	2	2

Senior Year.	No. Course.	1st Term.	2d Term	
			at Ithaca	at Axton.
Political Economy -----	60 -----	3 -----	- -----	- -----
Business Law -----	- -----	- -----	- -----	- -----
Forestry -----	5a -----	4 -----	- -----	- -----
" -----	8 -----	4 -----	- -----	- -----
" -----	9 -----	- -----	2 -----	- -----
" -----	10a -----	- -----	3 -----	- -----
" -----	10b -----	1 -----	- -----	- -----
" -----	11 -----	3 -----	- -----	- -----
" -----	12 -----	2 -----	1 -----	1 -----
" Thesis -----	- -----	- -----	4 -----	- -----
" -----	16 -----	- -----	- -----	10 -----

The courses in fundamental and supplementary branches are selected from those offered in the Departments of the University.

In addition or partly in substitution of the required courses noted in the schedule, the following courses are suggested as electives: Mathematics, 10; Chemistry, 2, 32; Entomology, 4, 5; Plant Physiology, 15; Civil Engineering, 50; Forestry, 2; ample time is also left in the junior and senior years for the election of courses intended to give a broad, liberal education. All electives must be chosen at the beginning of the year, with the previous written approval of the Director.

Courses in Forestry.

(Days and hours to be arranged.)

1. **Synoptical Course in Forestry.** Economic Nature and Political Aspects. Designed especially for students of Political Economy, Agriculture, Engineering, and freshmen in the College of Forestry, to acquaint the student in a brief manner with the several subjects comprising the field of forestry. Lectures only. Two hours. Second half year. Professor FERNOW.

2. **One-year Course in Forestry, with special reference to Silviculture.** Designed especially for Agriculturists and others who desire a brief study of the technicalities of woodcraft and silviculture. Lectures and demonstrations. Five hours. First half-year. Assistant Professor GIFFORD.

Forest Crop Production :

3a. **Biological Dendrology.** Life history, laws of growth of trees and their silvicultural requirements. Three hours. Second half-year. Professor FERNOW, and Assistant Professor CLARK.

3b. **Silviculture.** Principles of arboriculture, application of dendrology to crop production, methods of reproduction, improvement of the crop, nursery practice and forest planting, Lectures, recitations and field demonstrations. Four hours. First term. Professor FERNOW, and Assistant Professor CLARK.

4. **Forest Protection.** Methods of guarding against trespass, loss from fires, insects and diseases ; measures to prevent erosion, washing, and deterioration of soils. Lectures and recitations. Four hours. Second half-year. Assistant Professor GIFFORD.

5a. **Timber Physics and Wood Technology.** Technical properties of wood and its use. Lectures, recitations and laboratory work. Four hours. First half-year. Assistant Professor CLARK.

5b. **Short Course on the Structure of Wood and its Properties.** This course is especially designed to meet the needs of students in Civil Engineering and Architecture. Three hours. First half-year until Christmas. Assistant Professor CLARK.

6. **Exploitation.** Methods and means employed in the harvest of forest products, logging, transportation, milling, and preparation of wood for market. Lectures and recitations. Three hours, Second half-year. Together with course 15. Excursions to actual operations and points of manufacture. Assistant Professor GIFFORD.

Forest Economy :

7. **Forest Mensuration.** Methods of ascertaining volume of felled and standing trees, of whole forest growths, timber estimating, determining accretion of trees and stands. Lectures, recitations and laboratory work. Four hours through the year ; continued with course 14 in second half-year. Assistant Professor CLARK.

8. **Forest Regulation.** Principles and methods underlying the preparation of plans of management for continuous wood and revenue production. Lectures and recitations. Four hours. First half-year. Professor FERNOW.

9. **Forest Valuation and Finance.** Principles and methods of ascertaining the money value of forest growths of different ages for purposes of sales, exchanges, damage suits, etc. Application of the principles of finance to forest management ; methods of finding the most profitable form of management, determining rotation and expenditures with reference to revenue. Lectures and recitations. Three hours. Second half-year till Easter. Professor FERNOW.

Courses 8 and 9 will for the present be merged together through first and part of second half-year, to be followed by course 16 at Axton.

10a. **Forest Administration.** Organizing a forestry service, manner of employing and supervising labor, business methods as applied to forest management. Lectures and recitations. Three hours. First part of second half-year. Assistant Professor GIFFORD.

10b. **Business Methods of the Lumber Market.** Twelve lectures will be given every alternate year. Credit one hour. First half-year after Christmas. W. H. WETMORE, Special Lecturer.

11. **Forestry History and Politics.** Historical development of the economic and technical features of modern forestry; forestry conditions at home and abroad; forests and forestry as factors in the household of the community and nation; basis and principles underlying forest policies of the State. The course will prove of value and interest to students of political economy. Lectures only. Three hours. First half-year. Assistant Professor GIFFORD.

12. **Seminary in Reading of German Forestry Literature.** Two hours. Fall and winter. Professor FERNOW and Assistant Professor CLARK.

[The following courses are given during the Spring term in the College Forest.]

13. **Practicum in Silviculture.** Nursery practice, planting in forest, improvement cuttings, marking for seed cutting, etc. Credit four hours. Assistant Professor GIFFORD.

14. **Practicum in Forest Mensuration.** Continuation of course 7 and Forest Survey. Credit four hours. Assistant Professor CLARK. Together with **Timber Estimating** under instruction of C. P. WHITNEY, Estimator.

15. **Practicum in Exploitation and Surveying.** Visits to logging operations, illustrating fellings, skidding, landing, driving, transporation, milling. Laying out and constructing roads. Methods of subdividing and marking forest areas. Continuation of course 6. Credit two hours. Assistant Proessor GIFFORD and Forest Manager FIELD.

16. **Practicum in Forest Regulation.** Making of a working plan for a given area. Credit ten hours. Assistant Professor CLARK.

17. **Fishculture and Game Preservation.** Lectures, laboratory work, excursions to ponds, lakes and rivers, and visits to the State Hatchery at Clearwater. Lectures daily for two weeks. Professor BARTON W. EVERMANN, Special Lecturer.

This course will be given in 1903 and every alternate year.

GRADUATE AND RESEARCH WORK.

The opportunities for study and investigation in all branches of the natural sciences underlying forestry and in the various departments of the University are ample, while the connection of the demonstration area with the College of Forestry will furnish additional advantage for original work, research and experimentation, in advancing the science and art of forestry. Knowledge with reference to our native species and conditions is so little developed that the incentive and opportunity for special work is naturally great.

To students preparing theses and to graduate students every opportunity and encouragement will be offered to prosecute independent investigations.

No special graduate courses have as yet been planned. The work and instruction of graduates will be largely individual, so that each student is able to give special attention to such subjects as he is mainly interested in and to pursue these subjects independently under the direct guidance and aid of the professors in charge.

The requirements for admission to graduate work are to be found on pages 64-73.

COLLEGE OF ARCHITECTURE.

FACULTY.

JACOB GOULD SCHURMAN, A.M., D.Sc., LL.D., President.

CHARLES BABCOCK, A.M., Professor of Architecture, Emeritus.

JOHN V VAN PELT, Architecte Diplômé par le Gouvernement Français, Professor of Architecture in charge of the College of Architecture.

CLARENCE A MARTIN, Assistant Professor of Architecture.

OLAF M BRAUNER, Assistant Professor of Drawing and Painting.

ALBERT C PHELPS, Instructor in the History of Architecture.

R HAROLD SHREVE, Instructor in Architecture.

REQUIREMENTS FOR ADMISSION.

The following subjects are required for admission : English, History, [the student must offer one of the four following divisions in History : (a) American including Civil Government, (b) English, (c) Ancient, (d) Mediæval and Modern European], Plane Geometry, Elementary Algebra.

In addition to the above primary entrance subjects. the applicant must offer as below :—

1. **In Solid Geometry, Advanced Algebra, and in Plane and Spherical Trigonometry**, as much as is contained in the standard American and English text-books. See page 46.

2. **In Advanced French or Advanced German** (French preferred) as given on pages 37, 38, and 39.

3. The applicant must present a Regent's diploma (see page 50), or a certificate of graduation from an approved school (see page 51). Otherwise he must, in addition to the requirements mentioned in 1 and 2, pass examinations or present acceptable certificates representative of an amount of work equivalent to three year's time in a single subject in preparatory schools of approved standing. This additional requirement is equivalent to 12 counts on the Regents' scale in the State of New York.

For the above work a free choice among the various subjects not otherwise counted, that are taught in the preparatory schools of ap-

proved standing, will usually be accepted; while at the same time, combinations of the following subjects are recommended as the most suitable for entrance to the course in the College of Architecture: Physics, Chemistry, Geology, Freehand Drawing, and the alternative Modern Language.

[For details as to subjects and methods of admission, see pages 33-73.]

For admission to the freshman class communication should be addressed to the Registrar. See pages 33-53.

For admission to advanced standing from other colleges and universities, and as specials, communications should be addressed to the College of Architecture. See pages 53 and 54.

For admission to graduate work and candidacy for advanced degrees, communications should be addressed to the Dean of the University Faculty. See pages 64-73.]

DESCRIPTION OF THE COURSE IN ARCHITECTURE.

A good course in Architecture may be divided into four main parts: 1. Construction, both theoretical and practical; 2. Expression, or the technical representation of architectural and decorative ideas on paper; 3. Composition, which includes the science of convenient and effective planning and the art of architectural and decorative design; 4. That broad field which the literature of architecture covers and in which are included History of Architecture and the many interesting and important questions which arise in connection with the practice of architecture and which often belong to the allied professions, such as Engineering and Law. The following course has been based upon this frame work. Minor changes and additions may be made from time to time, but the scheme of teaching will, in general, be carried on as described below in detail.

Construction and Practice.

Under this head are grouped all of those courses bearing on the purely practical work of the profession as distinguished from the aesthetic. The aim is to give the student a thorough grounding in the principles underlying sound construction, sanitation, and the best practice in the installation of all modern conveniences. After the pure mathematics, the technical work begins with a course in Mechanics of Materials in which the theory of mechanics is taught and the strength of materials discussed. This is followed by the work in Structural Details which makes direct application in a special way of the principles taught in the preceding course.

The ordinary problems relating to materials and construction are taken up in the Masonry Construction, Constructions and Specifications, and Working Drawings. This work consists of lectures, recitations, general discussions, and drawing. In the lectures, recitations, etc., the work of the various trades is taken up and materials, methods, and workmanship thoroughly discussed, ending with a careful and systematic study of specifications. Heating and ventilation are studied in a separate course and under a specialist; and plumbing and sanitary engineering of buildings, and the discussion of building contracts are subjects for special work in the seminaries. The drawing in connection with the above work is made to conform as closely as possible to the work done in the preparation of working drawings in an office, with the advantage that it can be arranged in a consecutive and progressive order. In conjunction with the lectures on the planning of domestic buildings the student makes sketch plans and designs for a series of buildings ranging from the simple laborer's cottage to the most elaborate mansions built without the hamper of a cost limit. Following this special drill in planning and design, he is required to design a building of moderate cost—usually a dwelling-house—under such limiting conditions as might be imposed by a client, prepare the complete scale working drawings, and make typical full size details for its construction.

Throughout all of his work the student is required to construct scientifically rather than by "rule o' thumb." By the middle of the junior year he is prepared to take up the course in advanced construction which is devoted to the consideration of steel and fireproof construction, and consists of a series of fully illustrated lectures and the working out of steel framing plans, foundations for heavy buildings, and the details of steel columns, girders and trusses.

Expression.

This includes free-hand drawing, drawing from the antique and from life, modeling, sketching from nature, elements of architecture, shades and shadows and perspective. The aim of this work is to train the eye to a sense of form and color, the hand to steadiness and delicacy of touch, and the judgment to a nice distinction between values. In all of this work the attitude of the architectural student is precisely that of the sincere art student. False exaggerated effects for the sake of attracting attention are discountenanced, but vigorous, effective presentations of architectural ideas, in harmonious tones inspired from nature, are heartily encouraged.

Composition.

The subject is taught by means of a succession of problems throughout the second, third and fourth years. Programs of competition are issued upon pre-arranged dates, and each student is required to hand in a set of drawings showing his own interpretation of the problem as governed by the conditions. These drawings are judged by a jury composed of the entire faculty of architecture, the acceptable drawings being graded mention, first mention, second medal, and first medal, according to the excellence of solutions. In the judgment each member of the faculty pays particular attention to that part of the work which is the result of his special teaching. For example, the Professor of Construction studies the designs to determine whether or not they admit of direct and rational construction, while the Professor of Freehand Drawing criticizes the sculptural details and the general color schemes of the designs. Thus not only do the drawings receive careful criticism, but the Professors are able to follow the results of their teaching, while all in the faculty maintain a lively interest in the progress of architectural design, which is conceded to be the chief aim of architectural schools. In order to avoid the danger of becoming too theoretical, the course in working drawings, described under construction, is introduced after the students have spent their sophomore year in design. Experience has shown that this work has a wholesome influence upon the students, rendering more practical and sensible their work in the latter part of the course.

History of Architecture, etc.

Ancient Greece, in her philosophy, her literature and her art, has affected to an incalculable degree the civilization of modern times. The architectural influence percolating through Rome and the Renaissance has brought down to to-day traditions and architectural motives which serve admirably as sources of inspiration. Imitation, however, of decorative forms which serve to describe the kind of civilization that existed in ancient times, is hardly more justifiable than would be the use to-day of Egyptian hieroglyphics as wall decorations in our buildings. They belong to the past and should be considered as possessing only historical and archæological interest. The broad principles, however, of proportion and scale, and the subtleties of line and silhouette are matters which will always deeply concern the student of architecture and should be carefully studied in the monuments of all ages. The reserve of the Greeks contrasted with the wonderful daring of the Gothic builders presents an illustration of the qualities that are needed in our own building architects. The study of the

History of Architecture is regarded in this course as a source of inspiration rather than as a means of acquiring materials and motives for use after leaving the University. While it is true that the work in design shows throughout the three years a good deal of absolute imitation of historic forms, this wholesale adaptation is encouraged in the belief that the students will recognize in this way the true relation of historic motives to modern work; in other words it is believed that the students will see that historic motives are useful and necessary as helps in the study of the broad principles of composition, but that they should be only considered necessary *during student days*. History of Architecture is taught through lectures illustrated by means of models, photographs and lantern slides.

The subjects cared for by the Seminary, such as legal questions, professional practice, special engineering problems, etc., are practically only touched upon. With all the work that belongs to the technical training of an architect, it would be unwise to use the time necessary for a more exhaustive treatment of these allied subjects. The students become familiar with the breadth of field in these directions and are advised to employ experts for the solution of all problems that do not come properly within the scope of an architect's practice. Eminent specialists are invited each year to talk before the students on subjects allied to architecture but which cannot be specially taught in a College of Architecture. Stained glass, mosaics, furniture, mural painting, etc., are some of the topics that come under this head.

EQUIPMENT.

The rooms of the College are located on the second and third floors of Lincoln Hall, and consist of the offices, library, lecture rooms, drafting rooms, rooms for freehand drawing, water color, etc. The material equipment is especially complete along those particular lines wherein the student needs most help and guidance. The library, of course, takes first place, and is one of the best working libraries of its kind in this country. It comprises nearly all works of any note that have been published during the last century on the subject of architecture or architectural construction; a vast number of photographs and plates mounted and arranged for ready reference; and the bound volumes and current numbers of the leading architectural periodicals both foreign and American. Not only is the library most complete, but above all, it is accessible at all times, and the students have free and unhampered access to books, plates and photographs, and are encouraged and urged to use the best of the material for direct reference in the drafting rooms.

Next to the library in direct helpfulness to the students in design is

the constantly increasing collection of drawings made by advanced students and graduates of the *École des Beaux Arts*. Aside from any question of style, these are easily among the best architectural drawings ever made, and as they hang about the halls and drafting rooms of the College, their value as examples of drawing, rendering and expression can hardly be over-estimated.

A collection of plaster casts both large and small, furnishes subjects for freehand drawing in pencil and charcoal; and choice pieces of pottery, faience, terra cotta, etc., are used as studies for such of the water color work as is taken indoors.

Through the patient and untiring efforts of Professor Babcock over a period of twenty-five years, the College now has in its possession a large and valuable collection of wood, stone and plaster models illustrating the historical development of architectural form and construction.

For the work in construction there is, in addition to the library and models, a fine collection of working drawings of well known modern buildings which is being constantly added to by contributions from the offices of many of the leading architects from all parts of the country; and as large a collection of samples of building materials as can be handled within the limits of space available.

An important part of the equipment for lecture work and illustrations is an electric lantern and a large collection of lantern slides (several thousand) that is revised and enlarged each year.

FELLOWSHIPS.

The College of Architecture possesses a Traveling Fellowship and a Resident Fellowship. The Traveling Fellowship of the value of \$2,000 is awarded in alternate years to the winner of an architectural competition. The first competition was held in October, 1898, and the fourth will occur during the summer or fall of 1904. Candidates must be under the age of thirty, and must be either graduates of the College of Architecture or those who have satisfactorily completed the two year special course. Details of the competition will be sent to all qualified candidates several weeks in advance of the issue of the programs of competition. For further information address the Professor in charge of the College of Architecture, Ithaca, N. Y.

A Resident Fellowship of the annual value of \$500 is open to all graduates of schools of architecture of approved standing in the world. The award is made in June for the following year, and each candidate must submit drawings and other credentials and file a formal application with the Registrar of the University on or before April 15th. Application forms may be obtained of The Registrar, Ithaca, N. Y.

THE COURSE LEADING TO THE DEGREE OF BACHELOR OF ARCHITECTURE.

<i>Freshman Year.</i>	No. Course.	1st Term.	2nd Term.
History of Architecture	10	3	3
Analytic Geometry	2	4	—
Dif. Calculus	2	1	2
Int. Calculus	2	—	3
Elements of Architecture	11	3	3
Freehand Drawing	12	3	3
Descriptive Geometry	8	3	—
Shades and Shadows	13	—	1
Perspective	14	—	2

In addition to the above the required Drill and Gymnasium must be taken.

<i>Sophomore Year.</i>	No. Course.	1st Term.	2nd Term.
History of Architecture	20	3	—
Mechanics	21	4	—
Design	21	8	8
Drawing from the Antique	22	3	3
Masonry Construction	23	—	2
Clay Products and Building Stones	31	—	2
Composition	24	—	1

<i>Junior Year</i>	No. Course.	1st Term.	2nd Term.
History of Art	30	1	1
Structural Details	71	3	—
Design	31	—	12
Modeling	32	—	2
Planning of Domestic Buildings	34	2	—
Construction and Specifications	34a	3	—
Working Drawings	34b	5	—
Steel Construction and Fireproofing	35	3	—
Heating and Ventilating	36	—	1
Water Color Painting	37	—	2
Timber Physics	5	1	—

<i>Senior Year</i>	No. Course	1st Term.	2nd Term.
Modern Architecture	40	—	2
Theory of the Arch and Stereotomy	72	2	—
Design	41	12	12
Life Class	42	2	—
Seminary	43	1	1

One registered hour means three hours of actual work per week for the average student. In subjects given by means of lectures or recitations, each registered hour means one hour for the lecture or recitation plus an average of two hours for study or work in connection with the subject. In design twelve registered hours would require thirty-six hours (more or less, according to the ability of the student) per week of actual work in the drafting rooms.

Students who show special aptitude for construction or for decoration may, with the consent of the Faculty of Architecture, specialize in these directions. In construction the subjects include Bridge Design, Bridge Engineering, Foundations, Mechanics, Timber Physics, Iron and Steel Construction, etc. In decoration the subjects will include problems in design involving the use of historic ornament, problems in the interior decoration of houses, furniture design, etc. For detailed information regarding these special subjects, apply to the Professor in charge of the College of Architecture.

A two year special course in Architecture

Not leading to a degree, but a certificate will be issued upon satisfactory completion of the following course. Candidates proficient in any of the subjects scheduled in this course will be allowed to substitute other Architectural subjects in their stead. For entrance requirements address the Professor in charge of the College of Architecture.

First Year.

	No. Course.	1st Term.	2d Term.
History of Architecture.....	10	3	3
Design	21	8	8
Freehand Drawing	12	3	3
Descriptive Geometry	8	3	—
Shades, Shadows and Perspective	13	—	3
Modeling.....	32	—	2

Second Year.

	No. Course.	1st Term.	2d Term.
History of Architecture.....	20	3	—
Design	31	12	12
Drawing from the Antique.....	22	3	3
Modern Architecture.....	40	—	2

Freshman Year.

10. **History of Architecture.** First half-year: Egyptian, Greek and Roman Architecture. Second half-year: Romanesque, Byzantine and Gothic Architecture. Three lectures per week throughout the year. T., Th., S., 9. Mr. PHELPS.

11. **Elements of Architecture.** The classic orders of architecture drawn and rendered in India ink and in color. Nine drafting hours per week throughout the year. Mr. SHREVE.

12. **Freehand Drawing.** Charcoal drawing from the cast. Nine hours per week throughout the year. Assistant Professor BRAUNER.

13. **Shades and Shadows.** One lecture and six hours of drafting per week during the second half-year until Easter recess. Mr. SHREVE.

14. **Perspective.** One lecture and six hours of drafting per week during the second half-year after the Easter recess. Assistant Professor MARTIN.

Sophomore Year.

20. **History of Architecture.** First half-year: Renaissance Architecture. Three lectures per week. M., W., F., 9. Mr. PHELPS.

21. **Design.** Periodical problems arranged to occupy about twenty-four drafting hours per week throughout the year. Professor VAN PELT.

22. **Drawing from the Antique.** Charcoal and pastel work in the Museum of Casts. Nine hours per week throughout the year. Assistant Professor BRAUNER.

23. **Masonry Construction.** Second half-year. Lectures and recitations. Two hours per week, supplemented by drawing and by inspection of actual work. The course is preparatory to courses 34 to 35. Assistant Professor MARTIN.

24. **Composition.** One lecture per week during the second half-year. Professor VANPELT.

Clay Products and Building Stones. Second half-year. Two lectures per week. This is an eminently practical course for the study of bricks, tiles, terra cotta, cements, and building stones with reference to composition, color, methods of production, strength, durability, weathering, etc. Assistant Professor RIES.

Junior Year.

30. **History of Art.** One lecture per week throughout the year on Tuesday afternoons at 4 o'clock. Assistant Professor BRAUNER.

This course to be given in 1902-3 and in alternate years thereafter.

31. **Design.** Periodical problems arranged to occupy about thirty-six hours per week during the second half-year. Professor VANPELT.

32. **Modeling.** Six hours per week in clay modeling from busts-architectural ornaments, animals heads, etc. Mr. GUTSELL.

*34. **Planning of Domestic Buildings.** First half-year. Five lectures and thirty hours drafting per week during the early part of the term. The work contemplates a systematic and analytical study of house planning, with special reference to American conditions. Assistant Professor MARTIN.

*34a. **Construction and Specifications**; *34b. **Working Drawings.** First half-year. Five lectures and thirty hours drafting per

week during the intermediate part of the term. These courses continue the work of course 34 by the study of specifications and ordinary methods and details of construction in connection with the preparation of one-quarter inch scale working drawings and full size details for a house designed by the student himself, under such limiting conditions as a client would be likely to impose. Assistant Professor MARTIN.

*35. **Steel Construction and Fireproofing.** First half-year. Five lectures and thirty hours drafting per week during the latter part of the term. This course follows course 34b with a study of special foundations, steel construction, and fireproofing of high or heavy buildings; the fireproofing being studied with reference to its application to the cheaper domestic buildings as well as to the larger steel buildings. Assistant Professor MARTIN.

36. **Heating and Ventilating.** Two lectures per week during one-half of the second half-year, supplemented by practical problems. Professor CARPENTER.

37. **Water Color Painting.** Six hours per week in the second half-year, in painting from still life groups and from nature. Assistant Professor BRAUNER.

Timber Physics. (Forestry Course.) First half-year. Two hours per week lectures and laboratory work. A short course devoted to the study of timber, its physical structure, diseases, characteristics of the different kinds of wood, methods of treatment and behavior under different conditions, etc. Assistant Professor CLARK.

Senior Year.

40. **Modern Architecture.** Two lectures per week during the second half-year. Professor VANPELT.

41. **Design.** Periodical problems arranged to occupy about thirty-six drafting hours per week throughout the year. Professor VANPELT.

42. **Life Class.** Two evenings per week during the first half-year in drawing from the nude model. Assistant Professor BRAUNER.

43. **Seminary.** Reviews of current technical journals. Papers and discussions upon subjects of professional interest not covered by other courses. One hour per week throughout the year. Assistant Professor MARTIN.

N. B.—The Life Class is held throughout the year. During the second half-year the work is optional.

* Since courses 34, 34a, 34b, and 35 are but the successive steps in a single scheme, they should be taken consecutively and in a single term.

COLLEGE OF CIVIL ENGINEERING.

FACULTY.

- JACOB GOULD SCHURMAN, A.M., D.Sc., LL.D., President.
- ESTEVAN ANTONIO FUERTES, Ph.D., C.E., M.A.S.C.E., Director of the College, Dean of the Faculty, and Professor of Sanitary Engineering.
- IRVING PORTER CHURCH, C.E., Professor of Applied Mechanics and Hydraulics, in charge of the College Library and the Hydraulic Laboratories.
- CHARLES LEE CRANDALL, C.E., Professor of Railway Engineering and Geodesy, in charge of the Geodetic and Photographic Laboratory and Experimental Equipment.
- HENRY SYLVESTER JACOBY, C.E., Professor of Bridge Engineering and Graphics, in charge of the Museums, and of the Bridge Laboratory.
- GARDNER WILLIAMS, C.E., Professor of Experimental Hydraulics, in charge of the Hydraulic Laboratory of the College.
- HENRY NEELY OGDEN, C.E., Assistant Professor of Civil Engineering, in charge of the Sanitary Laboratory, and Secretary of the College Faculty.
- WILLIAM ELTON MOTT, S.B., Assistant Professor of Civil Engineering, in charge of the Junior Laboratory, and Registrar of the College.
- ELMER JAMES McCAUSTLAND, C.E., M.C.E., Assistant Professor of Civil Engineering.
- JOHN THOMAS PARSON, Instructor of Civil Engineering, in charge of the Photographic and Drawing Collections.
- EDGAR KAY, C.E., Instructor in Civil Engineering, and Assistant in the Laboratories.
- OSCAR AUGUSTUS JOHANNSEN, B.S., Instructor in Civil Engineering, and Assistant in the Laboratories.
- EDWARD CHARLES MURPHY, B.C.E., Ph.D., Instructor in Civil Engineering, and Assistant in the Laboratories.
- LINDSAY DUNCAN, C.E., Instructor in Civil Engineering, in charge of the Astronomical Equipment.
- FRED ASA BARNES, C.E., Instructor in Civil Engineering, and Assistant in the Laboratories.
- , Assistant in Civil Engineering, and in the Laboratories.

FRANK W. SKINNER, C.E., Lecturer in Field Engineering.
 EBENEZER TURNER, C.E., Lecturer in Meteorology.

Members of the Faculty of Arts and Sciences who are heads of the departments in whose courses the students of this College receive non-professional instruction. Arranged in the order of seniority of University appointments :

GEORGE CHAPMAN CALDWELL, B.S., Ph.D., Professor of Chemistry.

THOMAS FREDERICK CRANE, A.M., LL.D., Professor of Romance Literature.

WATERMAN THOMAS HEWETT, Ph.D., Professor of German Literature.

EDWARD LEAMINGTON NICHOLS, B.S., Ph.D., Professor of Physics.

EDWARD HITCHCOCK, JR., A.M., M.D., Professor of Physical Culture.

JAMES MORGAN HART, A.M., J.U.D., Professor of Rhetoric and English Philology.

JEREMIAH WHIPPLE JENKS, A.M., Ph.D., Professor of Political Economy, etc.

LUCIEN AUGUSTUS WAIT, A.B., Professor of Mathematics.

GEORGE FRANCIS ATKINSON, Ph.B., Professor of Botany.

RALPH STOCKMAN TARR, B.S., Professor of Geology.

ERNEST WILLIAM SCHODER, B.S., Fellow in Civil Engineering.

MARK ANTHONY BELTAIRE, JR., C.E., Scholar in Civil Engineering.

WILLIAM ORLANDO STUBBS, Mechanician to the College of Civil Engineering.

CLINTON D. CASS, Assistant Mechanician to the College of Civil Engineering.

Special Lecturers for 1901-1902.

E. W. HUFFCUT, "Intentional Interference with Underground Waters."

E. H. WOODRUFF, "Contracts."

RUDOLPH HERING, "Sanitary Engineering,"

EDWIN THATCHER, "Steel-concrete Construction."

THEODORE VOORHEES, "The Relation between the Civil Engineer and and Railway Management, and the Organization of Railways."

GUSTAV LINDENTHAL, "Bridge Architecture."

PRESIDENT H. S. PRITCHETT, "The Relation of the Civil Engineer to Man."

GENERAL PLAN OF STUDIES.

The courses of preparatory and professional studies have been planned with a view to laying a substantial foundation for the general and technical knowledge needed by practitioners in civil engineering ; so that our graduates, guided by their theoretical education and as much of engineering practice as can be taught in schools, may develop into useful investigators and constructors.

The facilities for instruction and for advanced investigations are believed to be thorough and efficient. Laboratory work is required of the students in chemistry, mineralogy, geology, physics, botany and civil engineering ; for which purpose in addition to the special library and laboratories of the College, all the libraries, collections and laboratories of the University are open to the students of this College.

The work of the undergraduate student is based upon an extended course upon the mechanics, and the graphics and economics of engineering. The object aimed at is to give as thorough a preparation as possible for the general purposes of the profession in the following subjects : the survey, location and construction of railroads, canals, and water works ; the construction of foundations in water and on land, and of superstructures and tunnels ; the survey, improvements, and defense of coasts, and the regulation of rivers, harbors and lakes ; the astronomical determination of geographical coördinates for geodetic and other purposes ; the application of mechanics, graphical statics, and descriptive geometry to the construction of the various kinds of right and oblique arches, bridges, roofs, trusses, suspension and cantilever bridges ; the drainage of districts, sewerage of towns, and the reclaiming of lands ; the design, construction, application and tests of wind and hydraulic motors, air, electrical and heat engines, and pneumatic works ; the preparation of detail drawings, of plans and specifications, and the proper inspection, selection, and test of the materials used in construction. Lectures are given in engineering and mining economy, finance and engineering jurisprudence. The latter subject deals in an elementary manner only, with the questions of easements and servitudes, and the ordinary principles of the laws of contracts and riparian rights. A course in political economy, of

three lectures per week, extending over one year, is given for the purpose of elucidating the economic value of the civil engineer as director of industrial enterprises, and his rôle in the industrial development of the country.

To the fundamental instruction of a general undergraduate course, many special courses are arranged for graduates desiring advanced study in the separate branches of their profession. Admission to these courses is open to civil engineers of this or other institutions having undergraduate courses similar to our own. Advanced and special instruction is offered in the following subjects; bridge engineering, railroad engineering, sanitary, municipal, hydraulic and geodetic engineering. The object of this instruction is to provide the young graduate with the means of prosecuting advanced investigations after such experience in professional life as may lead him to decide in the choice of a specialty. The same courses are open to teachers and professional men in a more advanced form and with larger liberty in the use of laboratory equipment. Lectures in the museum and laboratories are given to these students for the purpose of directing and aiding their original researches. All graduate work may alternate with a limited number of elective studies in other colleges of this University; but the choice of electives implies suitable preparation for their prosecution, and must, besides, meet with the approval of the Director of the College.

The College of Civil Engineering is quartered in a substantial brown stone structure, two hundred feet long and seventy feet wide, specially designed for the purposes of the College. In addition to the laboratories and museums, the building contains the working library of the College, aggregating about three thousand volumes, reading-rooms, class-rooms, and draughting rooms. The building contains also the offices of the professors, the offices of the U. S. Weather Bureau for the State of New York, and the meteorological observatory of the College of Civil Engineering. The astronomical and portions of the geodetic equipment of this College are housed in an observatory containing all the instruments required to find time, latitude, longitude and azimuth. The instruments are duplicates, in the main, of similar ones in use by the U. S. Coast and Geodetic Survey. The great Hydraulic Laboratory with its equipment, buildings and appurtenances is located at the Fall Creek gorge, within a short distance from the College buildings.

LABORATORIES.

The Civil Engineering Laboratories within the College building, cover a floor area of about fifteen thousand square feet. They comprise :

1. **A General Laboratory** containing a large collection of machines and apparatus for the experimental study of subjects connected with the theoretical instruction of the lecture-rooms, and as preparation for special laboratories.

2. **An Hydraulic Laboratory** with complete appliances, piping, mouth-pieces, and special castings for the derivation of co-efficients ; weirs provided with all forms and heights of notches and orifices ; venturi and other water meters ; guages of various kinds with electrical, clock work or other automatic devices for the most accurate measurements either of weights, velocities, pressures, equilibrium, viscosity or heights of heads ; various machines or contrivances for determining the flow of liquids in closed and open conduits ; several models of water wheels, dynamometers of various kinds ; a considerable variety of current meters, some of which can record automatically the speed of the current ; in others, the revolutions are determined by sound ; and still others record, by electrical devices, both the velocity and direction of currents. On the south bank of Fall Creek a curved concrete masonry dam 200 feet long has been built, which stores up a large amount of water, forming the Beebe Lake, and the dam is provided with an ample spill-way capable of delivering with safety any flood from the 120 square miles which constitute the water shed of the stream.

A canal, also built of concrete masonry, and 450 feet long, is located south of the south anchorage of the dam. Its up-stream end is provided with six gates, baffle boarding, and a standard weir to which various devices are attachable for measuring heads, and regulating the amount of air imprisoned under the water sheet. The canal is sixteen feet wide and ten feet in depth of water ; but the head of water, in some of the experiments, can be made to reach 225 feet. Heads of twenty feet may be utilized within the canal ; of eighty feet in the lower part of one of the laboratory buildings : and, for special experiments, a ten-inch pipe supplies water from the reservoir of the University water works, which is one hundred and forty-five feet above the canal. This head can be utilized through a stand pipe at the bottom of the gorge, below the canal in the large laboratory building. The canal is provided with an electric motor placed on a steel track running upon rails fastened to the top of its walls, and the speed of the truck can be regulated at pleasure, marking its speed and position on various chronographs. Cathetometers and other devices measure depths of water or its pressure at various points along the canal. The water of the head bay of the canal can be made to run to waste until uniform conditions of delivery are obtained, by means of a movable cradle, and through a practicable tunnel in the

north wall of the canal ; or the water waste of the canal can be regulated by means of valves and terminal weirs until required water velocities are obtained within the canal. At the west end of the canal there is a vertical six feet steel pipe to which water can be admitted in three ways : by a lateral channel from the main canal ; through a forty-eight inch pipe which taps the dam and Beebe Lake, and from the ten inch pipe which is fed from the University reservoir. This subdivision of heads and water volumes is due to the expediency of performing, simultaneously, class work and experiments, without interfering with the regular conditions of each experiment. The lateral canal is also provided with weirs and gauges upon the removable portion of the walls of this sub canal. The lower laboratory building is a slightly, solid structure eighty feet long and about eighty feet high, and contains a fifty thousand pound weighing machine sunk under its floor. This building shelters and hides from view the steel stand pipe to the north of which a suitable staircase carries within its well-hole all the necessary piping of iron and glass manometers.

The three floors of this building contain a large variety of apparatus, and do not extend through the whole length of the structure, leaving a large well-hole at the south end for experiments on water jets and fire extinguishing appliances. The stand pipe itself is provided with several special castings for the attachment, at convenient heights, of gates and pipes and orifices of various kinds. In one of these places it is intended to duplicate the apparatus now in McGill University and invented by Dr. Bovey for the study of the vena-contracta.

The upper laboratory, built on the top of the main building, and covering the lateral channel of the main canal, gives access to the stairways, and contain a variety of instruments, such as guages, clocks, chronograph, and self-recording instruments. It also serves the purposes of an office, leading to a computing room. It seems unnecessary to detail the various experiments and uses that can be made of this great laboratory, which offers facilities for the instruction of students and needed researches as yet unattainable in any part of the United States. This laboratory, in addition to its capacity for the perfecting of theories and experiments in the strictly hydraulic field, lends itself to the solution of problems and study of questions connected with the pollution of streams, purity of filter effluents and other special features of the sanitary laboratory described further on.

It may be desirable to add that this hydraulic laboratory is engaged in the further improvement of devices for the measurement of large volumes of water, beyond the capacity of the canal, stand pipe and its present weighing scales.

Although the laboratory needs still further additions to its very expensive equipment, and its work has hardly begun, the utility of this plant has been demonstrated by calls from all parts of the country, and from abroad, for the performance of experiments of great importance. Among these may be mentioned the valuable results obtained for the U. S. Deep Waterways Commission, the Michigan and Lake Superior Water Company, the work done for the City of New York in connection with its water supply, and for the U. S. Geological Survey. It now seems assured that this hydraulic laboratory will soon become the center of information and reference for the solution of the numberless hydraulic questions awaiting just such opportunities as the conditions of this laboratory offer and exist nowhere else in this country nor in Europe.

3. **A Cement Laboratory** provided with automatic machines for the establishment of standard tests. The furniture of this laboratory has been designed by specialists in view of its needs. Standard conditions are aimed to be obtained in all tests, nearly independent of human agencies. The sifting of cements, moulding, condensing and testing are performed automatically. The laboratory contains: Three machines for tension tests, three machines for crushing tests ranging from two to two hundred tons, one impact machine, one ratler cylinder of the dimensions recommended by the Master Masons Association, one abrasion machine, and a special machine for determining, automatically, the rate of setting and hardening of cements.

There are also, a large number of bronze briquette moulds, scales, glass mixture tables, thermometers for cement test purposes, a Bunsen pump and apparatus for testing the permeability of cements, several apparatus for measuring linear and volume changes during the setting of cements, their specific gravity, and fineness; a large number of scales for various purposes, varying from the most delicate chemical balances to a 400,000 pound machine. This laboratory has a water tank capacity for the tests of three thousand briquettes, and many of its appliances are utilized for tests of building materials, such as paving and other bricks, building stone, masonry arches, walls and piers up to twelve feet in height; in addition there are many smaller machines, appliances and tools that are used in common with the equipment of other laboratories. The apparatus designed by the Massachusetts Highway Commission for testing the cementing qualities of roadway materials is now in use.

4. **A Geodetic Laboratory** for the determination of the values and errors of graduation of circles and levels of precision. This room contains a sidereal chronometer by Negus, and an accurately compensated

mean time astronomical clock by Rogers, which is the standard of time for the University. There are a large number of surveying and portable astronomical instruments for the study of instrumental errors and their constants, and this laboratory is provided with collimators, micrometric level testers, and a reversible Katter pendulum to which noddies may be attached. Also a Kew magnetometer and Barrows circle, the manipulation of which instruments, and some of their constants, are obtained in the laboratory ; but the magnetic constants and results relating to the earth's magnetism are determined, each year in the field, in connection with the systematic surveys of the Lake region of Central New York, which began in 1874. This room has also several meteorological instruments devised for special purposes, like the study of wind gusts in violent storms. A Richard's three-cylinder machine gives the direction of the wind, and its horizontal and vertical velocity ; but when the velocity exceeds twenty miles per hour, another specially devised machine, modified by E. T. Turner, is then started automatically, and describes an open curve upon a rotating cylinder, whose ordinates are proportional to the wind's intensity for each meter of wind run. This machine works so long as the velocity exceeds twenty miles per hour ; and an ingenious contrivance prints the time, at intervals of five minutes, upon the endless paper band carried by the revolving cylinder. There are also in this laboratory standard and other mercury barometers, a Draper self-recording barometer, and several other minor instruments bearing upon the studies carried on in this laboratory.

5. **A Metric Laboratory** for the comparison of lengths, provided with line and end comparators and dividing engines. This room is built with hollow double walls, and provision has been made to maintain it at a constant temperature. It has been constructed with great care, and contains a four meter comparator of extraordinary precision. In this laboratory are placed many other machines and apparatus for experimentation in such portion of optics, thermodynamics, etc., as form special parts of the educational equipment of the engineer. The four meter line comparator rests on two independent piers, with two micrometer microscopes sliding on a beam, also mounted on independent piers, and the whole comparator is properly covered by a substantial and tight case. Projecting handles give motion to a cradle under the microscopes without disturbing the internal temperature of the case. A Geneva Steel meter bar of the international type forms the standard of length, and has been compared at the U. S. Coast Survey Office with the International Standard. There is also a Rogers speculum metal decimeter, a four-inch steel

scale, and a brass yard, used as subsidiary length standards. Tonnelot and Bodin thermometers, standardized at the Paris International Bureau, form the basis for temperatures. The room contains a Geneva graduating engine, and a four feet comparator for the study of leveling rods, while an iron standard rod, fifty feet long, inlaid on the floor of the main museum, is used as the standard for tapes and similar surveying measures of length. A Mendenhall half-second pendulum, constructed in this College, is mounted upon a pier for determinations of the force of gravity, directly ; and indirectly the form of the earth. This pendulum is a reproduction, from patterns loaned by the Coast Survey Office, of the instruments used for the above purposes by the International Association of Geodesists, and contains improvements suggested by the experience with older instruments.

6. **A Bridge Laboratory** for the study of stresses in many types of trusses, the determination of the effect of permanent and variable strains upon the nature and requirements of bridge designs and their details, etc. This laboratory contains a bridge truss model of 100 feet span, properly built to one-fourth scale ; several devices for accumulating or distributing localized or uniform loads ; many effective appliances for the study of tension, compression and flexure, including hydraulic and other forms of jacks, cathetometers, and various forms of micrometers. Also, a four hundred thousand pound testing machine, has a considerable range for the testing of full-sized bridge members, while other testing machines of smaller capacity may be used for researches in the various problems of rivets, joints, etc. It is expected that the laboratory feature of bridge study will become a specialized method of instruction, and so worked up that its work may be made separate and distinct from the elementary experiments made in the laboratories used for the general tests of materials of construction.

7. **A Bacteriological Laboratory** in which students may become acquainted with bacterial forms and such portions of the subject as bear upon sanitary engineering. The optical apparatus has been expressly manufactured for us by Richert of Vienna ; and, as the result of consultation with biologists, physicians, and sanitary engineers, the balance of the equipment for the special purposes of this laboratory has been made by Dr. Rhorbeck of Berlin. With these exceptions the equipment contains apparatus specially manufactured by the mechanics of the College.

8. **A Photographic Laboratory** for reproducing the appearance of tested specimens, for the purposes of the lecture room, as aid in topographical surveys, and for the distribution, to graduates and pur-

chasers, of reprints of the great collection of progress photographs of engineering structures owned by this College. A revolving transit camera has been added to the collection of photographic appliances, whose inventor, Mr. G. W. Parsons, has generously permitted its duplication by the mechanician of the College. This machine is capable of photographing with accuracy through an angle of 360° upon a flexible film 6 inches wide and 60 inches long.

9. **An Astronomical Laboratory and Training Observatory** contains an astronomical transit by Troughton and Sims, provided with two collimators; two sidereal clocks and a mean time clock; a four-and-a-half-inch Clark equatorial; two large altzimuths reading to seconds by levels and micrometers; and two three-and-three-eighths inch zenith telescopes by Fauth, but modified by the mechanician of the College, besides sextants, chronographs, chronometers, etc.

Students become here familiar with methods of observing, adjusting instruments, and reductions and computations for the determination of time, latitude, azimuth and longitude.

The building of the College of Civil Engineering contains the Offices and Observatory of the U. S. Weather Bureau, being the central office for the reception of climate and other data for the State of New York, and for the dissemination of weather forecasts to the region tributary to this centre.

The Museums of the College of Civil Engineering contain the following collections: 1. The Muret collection of models in descriptive geometry and stone cutting. 2. The De Lagrave general and special models in topography and geognosy. 3. The Schroeder models in descriptive geometry and stereotomy with over fifty brass and silk transformable models made in this College after the Oliver models. 4. The M. Grund collection of bridge, roofs, trusses and masonry structures, such as right, oblique and annular arches and domes, and several intricate problems in stone cutting, supplemented by similar models by Schroeder and other makers. 5. A model railroad bridge of one hundred feet span, one fourth of the natural size, and a numerous collection of models of track details. 6. The Digeon collection of movable dams, artificial harbors and working models in hydraulic engineering. 7. Working models of water wheels, turbines and other water engines. 8. Several large collections of European and American photographs of engineering works during the process of construction, and many other photographs, blue prints, models and diagrams. 9. An extensive collection of instruments of precision, such as Troughton and Sims astronomical transit; a universal instrument by the same makers, reading to single seconds; sextants, astronomical clocks, chronographs, a Negus chronometer, two equatorials

—the larger having an objective, by Alvan Clark, four-and-a-half inches in diameter, two large zenith telescopes of improved construction for latitude work, by the eye and photographic methods; spherometers and other instruments, like pier collimators, etc., necessary to complete and most efficient equipment of a training observatory. 10. A geodesic collection, consisting of a four meter comparator, built at this College of the University; a set of improved pendulums for gravimetric investigations; a secondary base line apparatus made under the direction of the Coast Survey; two new base line bars designed and constructed in the laboratories of this College, and all the portable astronomical and field instruments needed for extensive triangulations, including sounding machines, tachometers, deep water thermometers and heliotropes. 11. Among the usual field instruments, there is nearly every variety of engineers' transits, theodolites, levels, solar and other compasses, omnimeters and tachometers, with a large number of special instruments, such as planimeters, pantographs, elliptographs, arithmometers, computing machines, altazimuths, sextants, telemeters, and altimeters, hypsometers, and self-recording meteorological instruments of all descriptions. 12. A very complete set of all appliances and instruments for making reconnaissance in topographical, hydrographical and mining surveys, in addition to the instrumental equipment which is common to the museums and the twelve engineering laboratories of this College, as described above.

REQUIREMENTS FOR ADMISSION.

The following subjects are required for admission: English, History, [the student must offer one of the four following divisions in History: (a) American, including Civil Government, (b) English, (c) Mediæval and Modern European, (d) Ancient], Plane Geometry, Elementary Algebra. See pp. 33-37.

In addition to the above primary entrance subjects, the applicant must offer as below:—

1. In **Solid Geometry, Advanced Algebra, and in Plane and Spherical Trigonometry**, as much as is contained in the standard American and English text-books. See page 46.

2. In **Advanced French or Advanced German** as given on pages 37, 38, and 39.

NOTE:—For admission without examination the applicant must present a regent's diploma (page 50), or a certificate of graduation from an approved school (page 51); otherwise the certificate covering the requirements mentioned above in 1 and 2 must be supplemented by passing examinations showing that the applicant has done an amount

of work equivalent to a course of three years' duration in a single subject in preparatory schools of approved standing,* or he must present additional acceptable certificates showing that he has completed the courses covered by the above examinations. For the above amount of equivalent work, a free choice among the various subjects taught in the preparatory schools of approved standing, and not otherwise counted, will usually be accepted; but combinations of the following subjects, equivalent to three years' time under instruction, are recommended as most suitable for entrance to the courses in the College of Civil Engineering:

- (a) History, or additional English language and literature.
- (b) Additional modern languages or literature.
- (c) Freehand or linear drawing.
- (d) Physics, chemistry, botany, zoology, geology, descriptive astronomy, or additional physiology.
- (e) Latin or Greek.

This college admits as *Special Students* only graduates of other institutions pursuing advanced work, when the applicants are not candidates for a degree. See page 52.

[For details as to subjects and methods of admission see pages 33-73. For admission to the Freshmen class communications should be addressed to the Registrar. See pages 33-52.]

For admission to advanced standing from other colleges and universities and as specials, communications should be addressed to the Director of the College of Civil Engineering. See pages 53, 54.

For admission to graduate work, communications should be addressed to the Dean of the University Faculty. See pages 64-72.]

A FOUR-YEAR COURSE LEADING TO THE DEGREE OF CIVIL ENGINEER.

<i>Freshman Year.</i>	No. Course.	1st Term.	2d Term
Analytics	2	4	-
Differential Calculus	2	1	2
Integral Calculus	2	-	3
Botany	3	3	-
Chemistry or Linear and Freehand Drawing, Lettering and Topography	1 or 1, 2, 6	6	-
Linear and Freehand Drawing, Lettering and Topography or Chemistry	1, 2, 6 or 1	-	6
Engineering Construction	58	3	3
Land Surveying	10	-	3

In addition to the above the required Drill and Gymnasium must be taken.

* For students from the State of New York, this requirement is equivalent to 12 counts on the Regents' scale.

<i>Sophomore Year.</i>	No Course.	1st Term.	2d Term.
Physics	I	4	4
Geology	I, 30	2	2
Geology	10	1	1
Mechanics	20	5	5
Engineering Laboratory	22	2	1
Descriptive Geometry	8	3	2
Lettering, Tinting and Shading	4	1	1
City and Mine Surveying	11	-	2
<i>Junior Year.</i>	No. Course.	1st Term.	2d Term.
Political Economy	51	3	3
Railroad Engineering	60	4	3
Structural Design	71	4	4
Hydraulics	23	5	-
Hydraulic Engineering	30	-	2
Sanitary Engineering	52	-	2
Hydraulic Laboratory	40	-	1
Civil Construction and Cement Laboratory	51	2	1/2
Geodetic and Topographic Surveys	15	-	3
<i>Senior Year.</i>	No. Course.	1st Term.	2d Term.
Stereotomy and the Masonry Arch	72	3	-
Spherical and Practical Astronomy	12	4	-
Geodesy	13	2	2
Cartography	16	1	1
Geodetic Laboratory	14	-	1
*Elective	—	3	3
*Elective Laboratory	—	1	3
Engineering Problems	59	-	2
Engineering Jurisprudence	83	-	1
Field Construction	75	-	1
Thesis	81	1	2

A Six-Year Course Leading to the Two Degrees A.B. and C.E.

Juniors and seniors in good standing in the Academic Department are allowed, with the permission of the Faculty of Arts and Sciences and with the consent of the Faculty concerned in each case, to elect studies in other Colleges, which shall count towards graduation in the Academic Department, but the sum total of hours so elected must not

*All electives must be chosen by the student at the beginning of the year with the previous approval of the Director. The College reserves the right to withdraw any elective course which is not chosen by a sufficient number of students. The first series of electives includes courses 17, 24, 31, 54, 61, 73, 74, and 80, while the elective laboratory includes courses 18, 32, 41, 42, 43, 55, 56, and 57. Students in this College desiring to take work in the Dynamo Laboratory (Physics, 4) are first required to take certain preparatory experiments in the Junior Laboratory (Physics, 3), for which a credit of 2 hours will be given, after which they will be permitted to register in Physics 4 for any number of hours that may be desired. The work in Physics 3 consists of the same class of electrical experiments as is required in electrical engineering.

exceed the number required for one year's work in the respective colleges, nor exceed nine hours per week in any term.

In accordance with this provision the following suggestion is given for a six-year course leading to the degrees of A.B. and C.E. Subjects in italics are those common to the courses for both degrees.

<i>Freshman Year.</i>	No. Course.	1st Term.	2d Term.
<i>Analytical Geometry</i>	2	4	—
<i>Differential Calculus</i>	2	1	2
<i>Integral Calculus</i>	2	—	3
<i>Botany</i>	3	3	—
<i>Chemistry or Drawing</i>	—	6	—
<i>Drawing or Chemistry</i>	—	—	6
Elective in Arts and Sciences..... (Maximum)	—	4	7
<i>Drill</i>	—	2	2

<i>Sophomore Year.</i>	No. Course.	1st Term.	2d Term.
<i>Physics</i>	1	4	4
<i>Geology</i>	I, 30	2	2
<i>Geology</i>	10	1	1
<i>Descriptive Geometry</i>	C.E., 8	3	2
Elective in Arts and Sciences..... (Maximum)	—	8	9

<i>Junior Year.</i>	No. Course.	1st Term.	2d Term.
<i>Political Economy</i>	51	3	3
Engineering Construction	58	3	3
Land Surveying	10	—	3
Lettering, Tinting and Shading.....	4	1	1
Elective in Arts and Sciences..... (Maximum)	—	11	8

<i>Senior Year.</i>	No. Course.	1st Term.	2d Term.
Mechanics	20	5	5
Engineering Laboratory	22	2	1
City and Mine Surveying.....	11	—	2
Elective in Arts and Sciences	—	11	10

The completion of the above courses will lead to the degree of A.B.

<i>5th Year.</i>	No. Course.	1st Term.	2d Term.
Railroad Engineering	60	4	3
Structural Design	71	4	4
Hydraulics	23	5	—
Hydraulic Engineering.....	30	—	2
Sanitary Engineering	52	—	2
Hydraulic Laboratory	40	—	1
Cement Laboratory	51	—	½
Topographic Surveys.....	15	—	3
Elective	—	5	2½

<i>6th Year.</i>	No. Course.	1st Term.	2d Term.
Stereotomy and the Masonry Arch. -----	72 -----	3 -----	- -----
Spherical and Practical Astronomy -----	12 -----	4 -----	- -----
Geodesy -----	13 -----	2 -----	2 -----
Cartography -----	16 -----	1 -----	1 -----
Geodetic Laboratory -----	14 -----	- -----	1 -----
Elective -----	— -----	3 -----	3 -----
Elective Laboratory -----	— -----	1 -----	3 -----
Engineering Problems -----	— -----	- -----	2 -----
Engineering Jurisprudence -----	83 -----	- -----	1 -----
Field Construction -----	75 -----	- -----	1 -----
Thesis -----	81 -----	1 -----	2 -----

The completion of the above additional courses will lead to the degree of C.E.

Students desiring to take both degrees of A.B. and C.E., are recommended to complete the plans of their courses with the advice of the Deans of the Faculties concerned.

The student must satisfy the entrance to the Course in Arts (see page 80), provided he wishes to register in the above six-year course leading to the degree of Bachelor of Arts and Civil Engineering.

Courses of Instruction.

The number following the names of instructors refer to the rooms in Lincoln Hall.

Drawing.

1. **Linear and Freehand Drawing.** Elementary exercises to develop facility in the use of the instruments. Selected geometrical problems. Cross-sectioning. Shading with the right line pen and the bow pen. Isometric drawings. Tracing. Sketching from models. Six hours per week. Courses 1, 2 and 6 will be given in each half-year. First half-year. M., 10:30-1; T., 11-1, 2-5; W., 10:30-1; Th., 11-1; F., 9-1, 2-4. Second half-year. M., W., F., 9-1; W., 2-5; S., 8-11. Mr. PARSON, 23.

2. **Lettering.** The form and proportions of standard letters. Details of construction. Methods of spacing. Laying out titles. Drawing, six hours per week. Mr. PARSON, 23.

4. **Lettering, Tinting and Shading.** Freehand lettering for working drawings, and for general office work. Rendering in water color, sepia, and charcoal. Drawing three hours per week throughout the year. M., Th., 2-5. Mr. PARSON, 23.

6. **Pen and Colored Topography.** Topographical signs. Hill shading by different methods. Representation of surface forms by contours, and in color, pencil and charcoal. Topographic maps. Copying, enlarging, and reducing maps. Drawing, six hours per week. Mr. PARSON, 23.

8. **Descriptive Geometry.** For students in Civil Engineering. A study of the representation of lines, planes, surfaces, and solids, and of their relations; tangencies, intersections and developments; warped surfaces; shades, shadows, and perspective. The text-books are MacCord's Descriptive Geometry and Hill's Shades, Shadows, and Perspective. The original problems are intended to be illustrations and applications of the principles given in the text-books. Lectures, two hours per week throughout the year. T., Th., 8. Assistant Professor OGDEN, —. Original problems, three exercises of one hour each per week. M., W., F., 8. Assistant Professor OGDEN, 23; Mr. —, 31; Mr. —, 42.

9. **Descriptive Geometry.** For students in Mechanical and Electrical Engineering and in Architecture. Lectures, one hour per week throughout the year. Th., F., 9. Assistant Professor OGDEN, —. Original problems, three exercises of one hour each per week. M., W., S., 9; M., W., F., 10, 11, 12, Mr. —, 31. M., W., S., 9; M., W., F., 11, 12; T., Th., S., 10, 11, Mr. —, 42.

Surveying, Astronomy, and Geodesy.

10. **Land Surveying.** An elementary study of surveying methods and instruments. The recitations cover the first ten chapters of Raymond's Plane Surveying, and are supplemented by lectures. The field work affords practice in the use of the chain and tape, in making farm surveys with the compass and transit, and in leveling. The field practice is preceded by eight exercises devoted to the individual study of each instrument. Second half-year. Lectures and recitations, two hours per week. T., Th., 9, 11, Assistant Professor MCCAUSTLAND, 43, 10. M., T., W., Th., 12, Mr KAY, 43. Examination of surveying instruments, two hours per week. M., T., 2-4. Assistant Professor MCCAUSTLAND. W., F., 9-11, Mr. KAY. Field work, six hours per week. T., Th., 2-5; M., W., F., 2-4. Assistant Professor MCCAUSTLAND, Mr. KAY, Mr. —, and Mr. —.

11. **City and Mine Surveying.** Accurate methods of measuring distances and angles; grading and contouring; plane-table practice; street grading; city surveys and monuments; mining survey methods. Reference books: Raymond's Plane Surveying, and Johnson's Theory and Practice of Surveying. Second half-year. Recitations, one hour per week. M., W., F., 11. Assistant Professor MCCAUSTLAND, 10, 46. Field work, eight hours per week for the latter half of the second half-year. S., 8-12, 1-5. Assistant Professor MCCAUSTLAND, Mr. MURPHY, and Mr. —.

12. **Spherical and Practical Astronomy.** The lectures and recitations cover the description and theory of the adjustments and

methods of use of the field and observatory instruments of the college, including transits, zenith telescopes, altazimuths, and sextants, together with the auxiliary apparatus needed, such as clocks, chronographs, collimators, etc. Observations and computations are made to determine time, latitude, longitude and azimuth, by different methods. Loomis' Practical Astronomy is used as a text and Doolittle and Chauvenet as reference books. Lectures and recitations, five hours per week until the Thanksgiving recess. Daily except S., 12. Director FUERTES, 32. Night observations and computations, twice a week. Professor FUERTES, Assistant Professor OGDEN, and Assistant Professor McCAUSTLAND.

13. **Geodesy.** Historic development. Construction and use of instruments with special reference to the elimination of instrumental errors. Field work of the triangulation, including reconnaissance, signals, methods of observing, etc. Precise leveling. Methods of sounding. Figure of the earth, with the development of the formulas required in the reduction of surveys, "L.M.Z." work, map projections and the location of geodetic lines. Development of the method of least squares, with application to survey problems, to the adjustment of a triangulation, and to astronomical work. Mimeograph notes are employed. Recitations and lectures, five hours per week, for six weeks in each half-year. Daily except S., 8, 12. Professor CRANDALL, 44, 32.

14. **Geodetic Laboratory.** Determination of instrumental errors and constants, and of observation errors. The following are examples of the problems given: Determination of the error of the zero point of a compass; graduation errors of a precise leveling rod, with a diagram for corrections according to the French system; the temperature at which the 50 foot tape standard has its normal length; comparison of results for azimuth by the solar compass and by direct observations, etc. Second half-year. Two and one-half hours per week. M., T., 2-4½. Professor CRANDALL and Assistant Professor OGDEN.

15. **Geodetic and Topographic Surveys.** The work will be conducted from headquarters in the field, in continuation of a survey of the Fall Creek watershed, begun in 1898. A triangulation is extended over the area as a tertiary system connected with the primary and secondary stations of the New York Survey. Latitude and azimuth observations are taken at one of the stations. A line of precise levels, referred to mean sea level by the Erie Canal bench marks and those of the U. S. Geological Survey, is carried along the valley. Transit stadia lines, connected with the triangulation stations, form the basis for the topography. The maps are plotted to a scale of 400

feet to an inch from the co-ordinates of the stadia lines, adjusted to the triangulation, and 10-foot contours are drawn. Second half-year. Field work, computation and drawing, twelve hours per day for three weeks. Director FUERTES and Professors CRANDALL and JACOBY, Assistant Professors OGDEN and MOTT.

16. **Cartography.** Computations and reductions of the astronomical and geodetic data obtained on the Fall Creek survey in June, 1901, together with a map of the triangulation and topography, using 20-foot contours. First half-year. Computations and drawing, two hours per week. F., 8-11. Professor CRANDALL and Mr. KAY, 26. Second half-year. Three hours per week. S., 8-11. Professor CRANDALL, and Assistant Professor MCCAUSTLAND, 26.

17. **Advanced Geodesy and Astronomy.** A special course of reading as may be arranged: *e. g.*, Helmert's Higher Geodesy, Chauvenet's Astronomy. Three hours per week throughout the year. Director FUERTES and Professor CRANDALL.

18. **Geodetic and Astronomical Laboratory.** The laboratories and observatory are well equipped for the study of standards of length, dividing engines, micrometer microscopes, standard thermometers, pendulum observations, investigations of instruments, and astronomical observations with portable instruments. Seven and one-half hours per week, Christmas recess until end of year. W., Th., 2-5 $\frac{3}{4}$. Professors CRANDALL, 9, 24.

Applied Mechanics and Hydraulics.

20. **Mechanics of Engineering.** A study of the principles, and applications to engineering, of the mechanics of solids; as relating to the mutual actions, motions, pressures, strength, stiffness, and resilience of the members of structures and machines. Original problems form a prominent feature. Statics of a material point and of rigid bodies. Centers of gravity. Chains and cords. Dynamics (kinetics) of a material point. Impact. Virtual velocities. Centrifugal and centripetal forces. Pendulums. Moments of inertia of plane figures and of rigid bodies. Dynamics (kinetics) of rigid bodies. Work. Power. Energy. Fly-wheels. Friction. Graphical statics of mechanism. Dynamometers. General theorem of work and energy applied to machines. Stresses and strains. Tension. Shearing. Compression. Torsion. Flexure. Elastic curves. Safe loads. Columns. Text-books: Church's Mechanics of Engineering, and Notes and Examples in Mechanics. (At the end of the year nearly three weeks are devoted by students in Sibley College courses to topics in Hydrostatics and Hydraulics.) Lectures and recitations, daily except S., throughout

the year. 9, 10, Professor CHURCH, 34; 9, 10, Assistant Professor MOTT, 32; 8, 9, 11, Mr. —, 10, 45; 8, 11, Mr. JOHANNSEN, 32; 8, 8, 10, 11, Mr. MURPHY, 43; 8, 10, 11, Mr. —, 45.

21. **Mechanics.** (Resistance and elasticity of materials. For students in Architecture.) Tension, compression, and shearing. Riveted joints. Cantilevers and simple beams. Restrained beams. Safe loads. Elastic curves. Deflections. Beams of uniform strength. Columns. Combined stresses. Temperature stresses. Horizontal shear in beams. Text-book: Merriman's *Mechanics of Materials*. First half-year. Lectures and recitations, three hours per week. M., W., F., 9. Assistant Professor MCCAUSTLAND, 46.

22. **Engineering Laboratory.** Use of engineers' computing devices, viz.: the common slide rule, the Fuller spiral slide rule, Thacher calculating instrument, and Goodchild chart. Use of the planimeter, adjustments and use of the cathetometer. Experiments involving the parallelogram of forces (funicular polygons.) Determination of specific gravity with the Jolly balance. Centers of gravity of plates and prismoids (models.) Efficiency of the inclined plane. Systems of levers. Harmonic motion of masses, etc. Experiments in testing materials. Use of the 50,000-lb. Olsen machine in tensile tests of bars of iron and steel. The Thurston torsion machine; determination of its constants and tests of specimens. Flexure of steel bars; deflections and modulus of elasticity. Elongation of steel wires with observations by cathetometer. Breaking tests of wooden columns. Moments of inertia of beam sections by graphic and analytical methods. Use of the Kew magnetometer. First half-year. Five hours per week. (Seven hours in January). Professor CHURCH. T., Th., 2-4½. Mr. JOHANNSEN, 8, 14, 15. M., W., 2-4½. Mr. —, 8, 14, 15. F., 2-4½, S., 9-11½. Mr. MURPHY, 8, 14, 15. Second half-year. Seven hours per week for six weeks. M., T., 2-5½, Mr. JOHANNSEN. W., Th., 2-5½, Mr. —. F., 2-5½, S., 9-12½, Mr. MURPHY.

23. **Hydraulics.** (With topics in hydrostatics and pneumatics.) Fluids at rest. Hydrostatic pressure. Manometers. Strength of pipes. Pressure of water against walls and dams. Earth pressure. Immersion and flotation. Compressed air motors. Air compressors. Gas engines. Barometric leveling. Steady flow of liquids through pipes and orifices, and over weirs. Fluid friction. Losses of head. Time of emptying vessels. Steady flow of water in open channels. Kutter's formula. Steady flow of gases through pipes and orifices. Impulse and resistance of fluids. The Pelton water motor. Back-water. Overshot, breast, and undershot water-wheels. Theorem for flow in a revolving pipe. Turbines and reaction wheels. Theory of

turbine testing. Heat and the steam engine. Text-books: Church's *Mechanics of Engineering*; and *Hydraulic Motors*. Ripper's *Steam*. First half-year. Lectures and recitations, daily except S., 12. Professor CHURCH, 34. 12, Assistant Professor MOTT, 43.

24. **Advanced Mechanics.** Continuous beams. Curved beams. Special cases of flexure. Problems in the mathematical theory of elasticity. Thick hollow cylinders and spheres. Plates. Castigliano's Theorem of least work. Elastic potential and its derivatives. Numerous special problems in the mechanics of fluids. Special theories of hydraulic motors. Centrifugal pumps. Hydraulic brakes. Accumulators. Pressure engines, etc. Recitations. Three hours per week throughout the year. M., W., F., 11, Professor CHURCH.

Hydraulic Engineering.

30. **Hydraulic Engineering.** Rivers and harbors. Internal navigation; development, economics. Water courses; regimen; freshets, river beds. Littoral cordon. Uniform velocity. Current deviations. Locomotion in canals. Gaugings. River improvements; dredgings; dykes; dams. Harbors. Tides. Waves. Second half-year. Lectures, four hours per week, for the second half of the term. M., T., W., Th., 12. Professor FUERTES, 32.

31. **Hydraulic Constructions.** The study of modern hydraulic constructions: Dams, reservoirs, canals, levees, wharves, docks, etc. Structures relating to water power and irrigation. River and harbor works. Lectures with collateral reading and reports, three hours per week throughout the year. T., Th., S., 11. Assistant Professor MOTT, 34.

32. **Water Works.** The design, construction, operation and management of municipal water supply systems. Lectures and recitations, four hours per week for twelve weeks, beginning after Thanksgiving recess. M., T., W., Th., 12. Professor G. S. WILLIAMS, 46.

[This course may be substituted for an equivalent portion of course 41.]

Civil Constructions. See *Municipal and Sanitary Engineering*.

Experimental Hydraulics.

40. **Hydraulic Laboratory.** Testing of water motors. Experiments on the flow of water over weirs, and through orifices and pipes. Rating of current meters. Second half-year. Two and one-half hours per week. M., T., 2½-5. S., 8-1. Professors CHURCH and G. S. WILLIAMS, and Assistant Professor MOTT, 3.

41. **Experimental Hydraulics.** Tests of water meters, including the Venturi, and meters of the disc, rotary and piston types. Deter-

mination of losses of head due to valves, elbows, etc., in pipes. Current water meter guagings of flow in open channels. Tests of water motors of various types, turbines, reaction wheels, etc. Determination of coefficients of fluid friction in pipes. Tests of hydraulic rams, and other pumping devices. Special forms of weirs. Tests of flow in open channels; effect of form of section and of roughness of sides and bottom. Christmas recess until end of second half-year. W., Th., 2-5 $\frac{3}{4}$ Professors CHURCH and G. S. WILLIAMS, 3.

42. **Experimental Hydraulic Motors and Pumps.** The determination of efficiency, horse power, and capacity of hydraulic machinery. First half-year. Ten hours per week during the first half of the term. Hours to be arranged. Professor G. S. WILLIAMS.

43. **Advanced Experimental Hydraulics.** Advanced work on a large scale upon the flow and measurement of water. Second half-year. Work limited to the open season. Professor G. S. WILLIAMS.

Municipal and Sanitary Engineering.

51. **Civil Constructions.** A preliminary study of engineering construction. The recitations are on Part I of Baker's Masonry Construction. The lectures describe the methods of construction in masonry, wood, steel and iron, and in various hydraulic constructions. In addition to the subjects treated in the text-book, the object of the course is to introduce the student to the various fields of engineering in preparation for later detailed and elective study. The laboratory work consists in making and testing cement briquets under different conditions. First half-year. Recitations, two hours per week. M., 10; F., 8; W., F., 10. Assistant Professor MCCAUSTLAND, 46. Second term. Cement laboratory, two and a half hours per week for six weeks. M., T., 2-4 $\frac{1}{2}$. Mr. KAY, 4.

52. **Sanitary Engineering.** Sanitary Science. Origin and growth of the science. Causes and effects of polluted air and soil. Quality of water supplies and methods of removing contamination. House plumbing. Data required for a discussion of sewage plans, and of their application. Sewage disposal. Second half-year. Lectures, four hours per week, during the first half of the term. M., T., W., Th., 12. Professor FUERTES, 32.

54. **Design of Sewerage Works.** This course gives a detailed view of the field of sewerage design and construction, and of sewage disposal. Twenty-four lectures are devoted to sewage disposal, describing the most modern plants of Europe and of this country with the principles involved and a comparison of their relative efficacy of treatment. Twenty-two lectures relate to the question of design, con-

sidering the rainfall, run-off and all matters involved in the separate system. Fourteen lectures treat of construction, with details of man-holes, siphons, gate screens, and all topics relating to foundations, piers, brick, concrete or other construction. The rest of the course deals with the general questions relating to municipal engineering. Lectures, three hours per week throughout the year. M., W., F., II. Assistant Professor OGDEN, 44.

55. **Sanitary Laboratory.** This course offers a practical demonstration of some of the topics considered in courses 52 and 54. Reports are required on sand analyses, on coefficients of friction of water in sand, on the examination of plumbing installations, and on the study of ventilating plants. Preparation of culture media and of cultures of typical bacteria. Measurements of velocities and grades in the city sewers, and a study of their inter-relation with sizes of pipe and depths of flow. Seven and one-half hours per week from Christmas recess until end of second half-year. W., Th., 2-5 $\frac{3}{4}$. Assistant Professor OGDEN, 2.

56. **Cement Laboratory.** Determination of specific gravity, fineness, soundness, expansion, voids, activity, time of set, color and strength of cements. Study of sands. Studies of proportions and kinds of materials to be used in monolithic and other structures where cement is employed. Seven and one-half hours per week from Christmas recess until end of second half-year. W., Th., 2-5 $\frac{3}{4}$. Mr. KAY, 4.

57. **Testing Materials.** Attention is given to road and paving materials, to masonry and building stones, to joints and full-sized sections in iron and steel, and to inspection, cold bending, drifting, and other tests. Marten's Testing of Materials, and Johnson's Materials of Construction are used for reference. Considerable time is given to reading from current literature, and to writing abstracts and reports. Seven and one-hours per week from Christmas recess until end of second half-year. W., Th., 2-5 $\frac{3}{4}$. Assistant Professor MCCAUSTLAND and Mr. JOHANNSEN, 10, 15.

58. **Engineering Construction.** A historical and preliminary study of engineering construction. The course is given by lectures and is intended to introduce the first-year students to the various fields of engineering and the materials of construction as a preparation for later detailed required and elective study. The metallurgy and manufacture of iron and steel is also considered. The course includes the location, construction and maintenance of roads. Three hours per week throughout the year. First half-year. T., 9, Th., 10, S., II. Second half-year. T., Th., 10, S., II. Assistant Professor OGDEN, 10.

59. **Engineering Problems.** Second half-year. Computations and drawing. Six hours per week. M., W., 8-11. Director FUERTES and Professors CHURCH, CRANDALL, G. S. WILLIAMS, and JACOBY, Assistant Professors OGDEN, MOTT, and MCCAUSTLAND, 26.

Railroad Engineering.

60. **Railroad Engineering.** The field work includes the laying out of curves, turnouts, etc., and the staking out of structures, in addition to making the reconnaissance, preliminary and location surveys for about five miles of railway in the Inlet Valley near West Danby. The work is cross-sectioned and the positions of the structures determined. The drawing includes a map and a profile of the located line and a plan for one or more of the structures. The earthwork is computed from the cross-sections, and complete estimates are made of quantities and costs, including all structures. The recitations and lectures take up the field problems, the computation of earthwork, the cost of earthwork, sub-grade and track structures, track work, and the economics of railroad location and operation. Searle's Field Engineering ; Crandall's Transition Curve, Earthwork Tables, and Mimeograph Notes on Railroad Engineering ; and Wellington's Economic Theory of Railway Location, form the basis of the work. First half-year. Recitations, lectures, field work and drawing, ten hours per week. T., Th., 9-12 ; S., 8-6. Professor CRANDALL and Mr. KAY, 43, 45, 26, 23. Second half-year. Lectures and recitations, three hours per week. M., W., 10, F., 12 ; T., Th., S., 11. Professor CRANDALL, 44. Drawing six hours per week for six weeks. T., Th., 9-12. Professor CRANDALL, and Mr. KAY, 26, 23.

61. **Advanced Railroad Engineering.** This course is mainly along the line of operation and maintenance. The subjects treated are : Trackwork and accessory structures ; improvement in gradients and alinement ; sorting yards ; terminals ; block signaling and interlocking ; street and electric roads ; rapid transit ; and railroad management. Reading, lectures, and recitations, three hours per week throughout the year. M., W., F., 11. Professor CRANDALL, 46.

Bridge Engineering.

71. **Structural Design.** Structural Details. The lectures treat of the forms and strength of joints and fastenings used in heavy framing ; of the design and construction of beams, columns, roof trusses, and other wooden or combination structures, including some cast and wrought-iron details ; and of the results of timber tests and the determination of safe unit stresses. The recitations cover the graphic an-

alysis of simple beams and roof trusses in Chapters I and II of Merriman and Jacoby's *Roofs and Bridges*, Part II. The computations and drawing include complete detail designs and working drawings of two joints to resist large tensile stresses, of a deepened beam, and of a wooden roof truss for given specifications. First term for eleven weeks. Lectures and recitations two hours per week. T., Th., 8. Professor JACOBY, 34. Computation and drawing, six hours per week. M., W., 8-11. Professor JACOBY, 26. M., W., 2-5. Mr. JOHANNSEN, 26.

Bridge Stresses. Analytic and graphic methods. Principal modern forms of simple trusses. Dead, live, snow and wind loads. Counter bracing. Uniform panel loads. Excess panel loads. Text-book: Merriman and Jacoby's *Roofs and Bridges*, Parts I and II. First half-year. Recitations and lectures, four hours per week for four weeks. M., W., F., S., 8, 9. Professor JACOBY, 34, 43. M., W., F., S., 10. Mr. JOHANNSEN, 45. Bridge Stresses, continued. Locomotive Wheel Loads. Construction and use of load and moment diagrams. Multiple systems. Long span trusses. Plate girders. Evolution of bridge trusses. Classification. Solution of assigned problems. Second half-year. Recitations and lectures, four hours per week for six weeks. Professor JACOBY, 34, 43, 45. Mr. JOHANNSEN.

Bridge Design. Lectures and recitations on the design of plate girders, riveted and pin bridges. Details. Economic proportions. Complete computations for the design of a steel railroad bridge of short span. Text-book: Merriman and Jacoby's *Roofs and Bridges*, Part III. Second half-year. (For eight weeks). Lectures and recitations, one hour per week. W., 9. Professor JACOBY, 43. Mr. JOHANNSEN, 46. Computations and drawing, nine hours per week. T., Th., F., 8-11. Professor JACOBY, 26. M., 2-5. T., Th., 9-12. Mr. JOHANNSEN, 23, 26.

72. **Stereotomy and the Masonry Arch.** Two problems in stereotomy, all templet dimensions to be checked by computation; a review or the complete design of a right arch, either of masonry or of steel-concrete construction, including stability of arch and foundations, architectural features, falsework, bill of materials and cost. Mimeograph notes are used as the basis for the stereotomy and right arch. First half-year. Drawing and computations, six hours per week. T., Th., S., 9-11. Professor JACOBY and Assistant Professor MCCAUSTLAND, 26.

73. **Bridge Engineering.** Determination of the loading and stresses in continuous girders and trusses, draw-bridges, cantilever bridges, suspension bridges, and metallic arches. The metallic arches

include arched ribs and trussed arches of three, two and no hinges, respectively, both for roofs and bridges. Analytic and graphic methods. Study of the designs of typical examples of these classes of structures. Text-book : Merriman and Jacoby's Roofs and Bridges, Part IV. Recitations, three hours per week throughout the year. T., Th., S., II. Professor JACOBY, 46.

74. **Masonry and Foundations.** Cofferdams, cribs, sheet piling, metal cylinder piers, pumping and dredging, the foundation, and the location and design of piers. Text-book for the preceding topics : Fowler's Cofferdam Process for Piers. Piles and pile driving. Pneumatic caissons. Open caissons. Caisson sinking. Deep and difficult foundations. Foundations of buildings ; Pile, caisson, steel, concrete. Underpinning. Examination of selected modern examples described and illustrated in the Engineering periodicals and transactions. Building stone. Recitations and written reports, three hours per week throughout the year. M., W., F., II. Professor JACOBY, 34.

[75. **Field Construction.** Second half-year. Lectures, one hour per week. Hours to be arranged.]

Civil Constructions. See Municipal and Sanitary Engineering.

Testing Materials. See Municipal and Sanitary Engineering.

Mining.

80. **Mining.** Mine surveying. Geological surveying. Prospecting and location of mines. Exploitation and valuation of mines. Mining Law. Boring and drilling. Breaking ground. Shaft sinking, drifting and tunneling. Methods of working. Ventilation. Drainage and pumping. Lighting. Haulage. Mine machinery, hydraulic, compressed air and electric. Blasting and explosive materials. Drills and drilling. Cutters and conveyors. Timbering.

Anthracite and Bituminous Coal Mining. Pillar and room and long-wall methods and modifications. Preparation of coal for market. Breakers, washers, briquetting.

Placer and Hydraulic Mining. Iron, gold, silver, lead, copper, zinc and tin ore mining. Ore dressing machinery, crushers, stamps, amalgamators, vanners, gigs, concentrators, etc.

During the second term visits are made to various mines in New York and Pennsylvania and laboratory practice is given in the use and adjustment of drills, concentrators, air compressors, etc.

Students are given problems in design of mine plant and mining engineering under the various subjects treated at the time.

The library contains all the best mining literature and is used extensively in the preparation of reports and for class work.

Lectures and recitations three hours per week throughout the year.
M., W., F., 11. Mr. KAY, 10.

Jurisprudence.

83. **Engineering Jurisprudence.** Law of contracts: Essential elements of contracts. Limiting law. Bids and bidder. Engineers' employment. Performance of service. Dismissal. Extra work. Ownership of corporeal and incorporeal property rights. Liability of the Engineer when his functions are judicial or discretionary, or when a public officer. Employment and compensation as expert. Consultation, preparation and behavior in court. F., S., 12. Professor FUERTES, 32.

Thesis and Graduate Courses.

81. **Thesis.** First and Second half-year. The latest date for announcing the subject (which is to be approved by the Director of the College) is December 1, and the latest date for presenting the thesis is June 1. Monthly reports of progress are required.

82. **Special Courses.** All of the elective courses are suitable for graduate and advanced students, and may be taken by them in the regular classes. Other special courses will be arranged to suit the requirements of graduate students. These courses are intended to be pursued under the immediate direction of the professor in charge, the student being usually free from the restrictions of the class room and working either independently or in conjunction with others taking the same course.

DEGREES.

First Degree.

The degree of *Civil Engineer, C.E.*, is conferred upon such candidates as may successfully complete the four year undergraduate course (see pages 342 and 343) and present a satisfactory thesis, upon the recommendation of the faculty of the *College of Civil Engineering* to the *Board of Trustees*.

Graduate Courses and Advanced Degrees.

Graduate courses may be pursued by resident and non-resident graduates under the regulations mentioned on pages 64-72. Such courses are also open to graduates of any institution having an equivalent curriculum, when such graduates are accepted as candidates by the

Faculty of this College. All graduate students are under the jurisdiction of the University Faculty.

The degrees of Master of Civil Engineering (M.C.E.), and Doctor of Philosophy (Ph.D.), are conferred after the conditions are fulfilled which are detailed on pages 72, 73.

For fellowships and scholarships, see pages 58-64.

PRIZES.

The **Fuertes Medals**, founded by Professor E. A. Fuertes and consisting of two gold medals, each of the value of one-half the amount of the income provided by the endowment fund will be awarded under the following conditions :

One of these medals will be awarded annually by the University Faculty to that student of the College of Civil Engineering who may be found, at the time of graduation, to have maintained the highest degree of scholarship in the courses of his college, provided he has been in attendance in the University for at least two years ; and the other medal will be awarded annually by the Faculty to that graduate of the College of Civil Engineering who may write a meritorious paper upon some engineering subject tending to advance the scientific or practical interests of the profession of the civil engineer. It is desired that papers be presented on or before April 15th. If a paper is submitted in printed form, it will not be received if it has been printed earlier than the next preceding April 15th.

Neither medal shall be awarded unless it appears to the Faculty of the College of Civil Engineering that there is a candidate of sufficient merit to entitle him to such distinction. Candidates will be nominated to the University Faculty by the College of Civil Engineering annually.

When no medal is awarded, the money thus left unexpended shall be added to the principal of the Fuertes fund ; or it may, at the discretion of the Board of Trustees, be given to aid needy and meritorious students of any college or department of the University.

SIBLEY COLLEGE

OF MECHANICAL ENGINEERING AND THE MECHANIC ARTS.

FACULTY.

JACOB GOULD SCHURMAN, A.M., D.Sc., LL.D., President.

ROBERT HENRY THURSTON, LL.D., Dr. Eng'g., A.M., Director of the College, Dean of the Faculty, and Professor of Mechanical Engineering.

JOHN LEWIS MORRIS, A.M., C.E., Sibley Professor of Practical Mechanics and Machine Construction.

ROLLA CLINTON CARPENTER, M.S., C.E., M.M.E., Professor of Experimental Engineering.

HARRIS JOSEPH RYAN, M.E., Professor of Electrical Engineering.

WILLIAM FREDERICK DURAND, Ph.D., Professor of Marine Engineering, and Principal of the Graduate School of Marine Engineering and Naval Architecture.

JOHN HENRY BARR, M.S., M.M.E., Professor of Machine Design.

HERBERT WADE HIBBARD, A.B., A.M., M.E., Professor of Mechanical Engineering of Railways and Principal of the Graduate School of Railway Mechanical Engineering.

EDWIN CHASE CLEAVES, B.S., Assistant Professor of Freehand and Mechanical Drawing.

GEORGE ROBERT McDERMOTT, Assistant Professor of Naval Architecture.

CLARENCE EDWIN COOLIDGE, Ph.B., Assistant Professor of Machine Design.

HENRY HUTCHINSON NORRIS, M.E., Assistant Professor of Electrical Engineering.

HERMAN DIEDERICHS, M.E., Assistant Professor of Experimental Engineering.

HIRAM SAMUEL GUTSELL, B.P., A.M., Instructor in Industrial Drawing and Art.

JOHN S. REID, Instructor in Mechanical Drawing and Design.

VICTOR TYSON WILSON, Instructor in Industrial Drawing and Art.

DAVID REID, Instructor in Mechanical Drawing and Design.

CHARLES WELLINGTON FURLONG, Instructor in Industrial Drawing and Art.

EDGAR HARPER WOOD, M.E., Instructor in Drawing.

HERBERT FISHER MOORE, B.S., M.E., Instructor in Machine Design.

WILLIAM CHARLES BAKER, B.S.A., Instructor in Drawing.

ARCHIE BAXTER GOULD, Instructor in Experimental Engineering.

SANFORD ALEXANDER MOSS, M.S., Instructor in Machine Design.

RICHARD GUSTAVUS DUKES, M.E., Instructor in Experimental Engineering.

ROBERT LEE SHIPMAN, B.E., M.E., Instructor in Experimental Engineering.

LOUIS ALLEN HARDING, B.S., Instructor in Machine Design.

ALDEN KITTREDGE DAWSON, Instructor in Drawing.

HARRY LOUIS HEPBURN, M.E., Instructor in Experimental Engineering.

GEORGE STANLEY MACOMBER, M.E., Instructor in Electrical Engineering.

THOMAS MOONEY GARDNER, M.M.E., Instructor in Mechanical Engineering.

RALPH GOLDSMITH YOUNG, M.E., Assistant in Experimental Engineering.

JAMES WISEMAN, Foreman of Machine Shop, and Instructor in Machine Construction.

WILLIAM HENRY WOOD, Foreman of Woodshop.

JAMES EUGENE VANDERHOEF, Foreman in Foundry.

WILLIAM FREDERICK HEAD, Foreman in Forging.

GEORGE CONGER POLLAY, Assistant in Woodshop.

ROBERT VANDERHOEF, Assistant in Foundry.

FRANK STARKINS, Assistant in Machine Shop.

EDWARD MORTIMORE AVERY, Assistant in Machine Shop.

ARTHUR HENRY SWEET, Mechanician in Sibley College.

RAYNOR EGBERT SEAMAN, Assistant in Woodshop.

Fellows—1901-1902.

JOHN WALTER PRINCE, M.E.

L D CRAIN, B.M.E.

NON-RESIDENT LECTURERS, 1901-1902.

PATRICK B. DELANY, Electrician, of Orange, N. J., Rapid Telegraphy.

WALTER M. MCFARLAND, ex-U. S. N., of Pittsburg, Pa., The Progress of Economy in Marine Engineering.

CARL E MYERS, Aeronaut, of Frankfort, N. Y., The Art of Ballooning.

WILLIAM A. ANTHONY, Ph.B., of New York, Electric Railways.

A. E. KENNELLY, Ph.D., Electrical Engineer of Philadelphia, Submarine Cables.

F. A. HALSEY, M.E., of New York, The Premium Plan of Rewarding Labor.

WILLIAM KENT, M.E., of New York, Steam Boiler Economy.

ROBERT W. HUNT, M.E., of Chicago. Iron Making in Sweden.

CHARLES KIRSCHOFF, Ph.D., of New York, The Commercial Side of Engineering.

JOHN W. LANGLEY, Ph.D., of Cleveland, Ohio, The Electrolytic Production of Aluminum.

DEPARTMENT OF LIGHT AND POWER.

JOHN LEWIS MORRIS, A.M., C.E., Head of Department.

HARRIS JOSEPH RYAN, M.E., Consulting Engineer.

HENRY HUTCHINSON NORRIS, M.E., Electrician.

RICHARD HISCOCK, Chief Engineer and Assistant in Steam Engineering.

HORACE MARSHALL, Engineer of Light and Power Station.

ALONZO WHITLOCK, Lineman.

ALBERT TUCKER, First Assistant Engineer.

JOHN WILLIAM BRUCE, Second Assistant Engineer.

TRACEY HISCOCK, Assistant in Charge of Boilers.

The Sibley College of Mechanical Engineering and the Mechanic Arts, as its name implies, is organized as a technical and professional college in Cornell University. Its courses are planned and conducted with a view, primarily, to the promotion of the fundamental ideas of the law establishing that institution and the most cherished plans of its Founders—the advantage of the “industrial classes,” through training in the industrial arts and professions, as supplementary to so much of academic education as its students may have found it practicable to secure. Before preparing for or entering upon such courses of instruction as are here offered, it is presumed that the student has

secured as complete a general education as time and means permit, and that he is ready to give all his thought and energy to business. For him, these courses constitute the first step in his business career and it may be expected that they will be so regarded, both by him and by his instructors. The methods of the college will be, as far as practicable, those of the business establishment or engineer's office, and admission and discharge will be governed as far as possible by business rules. Men of ambition and holding to business principles and methods will be given every assistance in their endeavors to obtain a professional training ; others will be directed into other departments of study or into other lines of business.

Candidates for admission are reminded that these courses are intended solely for the student proposing to enter the professional work into which these lines of study lead, and that it is assumed that his general academic education has been completed to the full extent of his available time and means. He is advised, in all cases, to secure, before entering Sibley College, a good academic education, including, if practicable, a liberal college course. His success in the practice of his profession will be found to depend more and more, in the future, and always in large degree, upon the position which he may be able to assume among men of education and culture. The courses here offered are not intended to give him more than a technical preparation for the special professional work of his business life. Even the entire devotion of four years to this specific and limited purpose will be found none too much, and the courses are therefore organized to meet the demands, solely, of engineering as a profession. Education and culture should precede it ; notwithstanding the fact that technical studies must always constitute a very effective line of education of the faculties and of the mind. Failures are as commonly due to immaturity as to lack of scholarship.

The Sibley College of Mechanical Engineering and the Mechanic Arts receives its name from the late Hiram Sibley, of Rochester, who between the years of 1870 and 1887, gave one hundred and eighty thousand dollars towards its equipment and endowment. Mr. Hiram W. Sibley has added above one hundred and thirty thousand dollars for later constructions. It now includes eight departments : Mechanical Engineering, Experimental Engineering, Electrical Engineering, Machine Design, Mechanic Arts or Shop Work, Industrial Drawing and Art, Graduate Schools of Marine Engineering and Naval Architecture, and of Railway Mechanical Engineering.

Departments.

1. **Department of Mechanical Engineering.**—The work of this department is conducted in connection with the several other departments to be presently described. The full course of instruction consists of the study, by text-book, or lectures, of the materials used in mechanical engineering; the valuable qualities of these materials being exhibited in the mechanical laboratory by the use of the various kinds of testing machines. The theory of strength of materials is here applied, and the effects of modifying conditions—such as variation of temperature, frequency and period of strain, method of application of stress are illustrated. This course of study is accompanied by instruction in the science of pure mechanical kinematics, which traces motions of connected parts, without reference to the causes of such motion, or to the work done, or the energy transmitted. The study is conducted largely in drawing rooms where the successive positions of moving parts can be laid down on paper. It is illustrated in some directions by the set of kinematics models known as the Reuleaux models, a complete collection of which is found in the museum of Sibley College.

The study of machine design succeeds that of pure mechanism, just described, and is also largely conducted in the drawing rooms.

The closing work of the course consists of the study, by text-book and lectures, of the theory of complete machines, as the steam-engine and other motors. The last term of the regular four-year course is devoted largely to the preparation of a graduating thesis in which the student is expected to exhibit something of the working power and the knowledge gained during his course.

Students are allowed, in their senior year, to begin to specialize somewhat, taking, for example, work in steam, in marine, in railway, or in electrical engineering, with specialists.

2. **Department of Experimental Engineering, or Mechanical Laboratory Instruction.**—The work in this department comprises a systematic course of instruction intended not only to give the student skill in the use of apparatus of exact measurement, but to teach him also the best methods of research. Its courses of instruction include the theory and use of machines for testing the strength and determining other valuable properties, of the materials of construction, of lubricants, and of fuels, etc., the processes of belt-testing, and of power measurement, and the standard system of gas and steam-engine and of steam-boiler test-trials. All students take part in this work and, when sufficiently expert, in commercial work of this kind

at the University, and sometimes extensively in the large cities throughout the state and elsewhere.

3. **Department of Electrical Engineering.**—The student at the end of the third year of the course in Mechanical Engineering may, if he chooses, substitute the special work in electrical engineering for the prescribed work of the regular course. The special work of the fourth year comprises the study, under the direction of the Professor of Electrical Engineering, of station design and construction of the prime movers, the design and construction of electrical machinery, the study of the problems involved in the distribution of electric light and the electrical transmission of power, besides practice in every variety of measurement, computation and testing, as applied to the construction and maintenance of electric lighting, power plants, telephone and telegraph lines and cables, and to the general purposes of investigation. A large amount of work in the laboratories of the Department of Physics is also given with special reference to needs of the practical electrician.

Graduates in the course of Electrical Engineering, are given the degree of Mechanical Engineer, as in the regular course, with a statement in the diploma that the student has elected the special work offered in this department.

Students entering the undergraduate courses for the purposes of the electrician, rather than those of the electrical engineer, should take the course leading to the degree of A.B., and should take its electives in physics. No student deficient in talent for either mathematics, physics, or the mechanic arts should attempt electrical engineering.

4. **Department of Mechanic Arts.**—The aim of the instruction in this, the department of practical mechanics and machine construction, is to make the student, as far as time will permit, acquainted with the most approved methods of construction of machinery. The courses are as follows :

Wood-working, Turning and Pattern-making. This course begins with a series of exercises in wood-working, each of which is intended to give the student familiarity with a certain application of a certain tool ; and the course of exercises as a whole, is expected to enable the student to perform any ordinary operations familiar to the carpenter, the joiner and the pattern maker. Time permitting, these prescribed exercises are followed by practice in making members of structures, joints, small complete structures, patterns, their core-boxes, and other constructions in wood. Particular attention is paid to the details of pattern-making.

Forging, Moulding and Foundry-work. These courses are expected not only to give the student a knowledge of the methods of

the blacksmith and the moulder, but to give him that manual skill in the handling of tools which will permit him to enter the machine shop and there quickly to acquire familiarity and skill in the manipulation of the metals, and in the management of both hand and machine tools.

Iron-working. The instruction in the machine shop, as in the foundry and the forge, is intended to be carried on in substantially the same manner as in the wood-working course, beginning with a series of graded exercises, which will give the student familiarity with the tools of the craft, and with the operations for the performance of which they are particularly designed, and concluding by practice in the construction of parts of machinery, and time permitting, in the building of complete machines which may have a market value.

5. Department of Industrial Drawing and Art, (excluding Machine Design). Freehand Drawing and Art: the instruction begins with freehand drawing, which is taught by means of lectures and general exercises from the blackboard, from flat copies, and from models. The work embraces a thorough training of the hand and eye in outline drawing, elementary perspective, model and object drawing, drawing from casts and sketching from nature. The course in freehand drawing may be followed by instruction in decorative art, in designing for textiles and ceramics, in modeling, and in other advanced studies introductory to the study of fine art.

Mechanical drawing: The course begins with freehand drawing, and in the latter part of this work considerable time is expected to be given to the sketching of parts of machines and of trains of mechanism, and, later, of working machines. The use of drawing instruments is next taught, and after the student has acquired some knowledge of descriptive geometry and the allied branches, the methods of work in the drawing rooms of workshops and manufacturing establishments are learned. Line drawing, tracing and "blue printing," the conventional section-lining and colors, geometrical construction, projections and other important details of the draughtsman's work are practiced until the student has acquired proficiency.

Industrial Art. Instruction in industrial and fine art, continuing through four years, is arranged for students having a talent for such work, and desiring to devote their time mainly to this subject. Modeling and landscape drawing and painting occupy the spring term. No degree is conferred, but certificates of proficiency may be given at the end of the course. Occasional general and public lectures on the history of art and the work of great artists are given.

6. Department of Machine Design.—The advanced instruction in the Department of Machine Design is developed directly out of the

preceding courses and includes the tracing of curves and cams, the study of kinematics on the drawing board, tracing the motion of detail mechanism, and the kinematic relations of connected parts. This part of the work is accompanied by lecture room instruction and the study of the text book, the instructors in the drawing-rooms being assisted by the lecture room instructor, who is a specialist in his branch. The concluding part of the course embraces a similar method of teaching machine design, the lecture room and drawing-room work being correlated in the same manner as in kinematics or mechanics. The course concludes, when time allows, by the designing of complete machines, as the steam engine or other motor, or some important special type of machine. Students often make original designs, and not infrequently put on paper plans relating to their own inventions.

Besides the preceding undergraduate courses, graduate courses are arranged for students in mechanical or electrical engineering who desire further instruction and advanced work in engineering.

7. **The Graduate School of Marine Engineering and Naval Architecture**, which was established by the Board of Trustees in 1890, has for its object to provide courses of instruction and opportunities for research in such special branches of engineering as relate to the design, building, powering, and propulsion of vessels of any and all types. Such courses naturally fall under two heads :

(a) Marine Engineering. (b) Naval Architecture.

These two sub-divisions are closely inter-related, and of the courses of study offered, many are common to both. Outside of these each branch is specialized in its own direction, the naval architect being more especially interested with the design and construction of the ship, and the marine engineer with the design, construction and maintenance of the motive power.

As a foundation for the work in Marine Engineering the student follows for the first three years, with only slight change, the regular Sibley College course in Mechanical Engineering. During the fourth year special work in Marine Engineering and Shipbuilding is introduced, occupying about one-half of the time for this year. The remainder of the time is occupied with a portion of the regular senior work in the courses in Mechanical Engineering.

The study of Naval Architecture and Shipbuilding being somewhat further removed from the regular course in Mechanical Engineering, the special work of the course is necessarily somewhat wider in extent. As a foundation for this course the student follows for the first two years with no change the regular Sibley College course in Mechanical Engineering. During the Junior year special work in Naval Archi-

ture and Shipbuilding is introduced to the extent of about one-third the time for the year. This is followed in the Senior year with further work in the same lines to the extent of about one-half the time of the year. The remainder of the time in each year is occupied with studies in the regular course in Mechanical Engineering.

The undergraduate course, as above outlined, is intended to acquaint the student, in as thorough a manner as the time will permit, with the general principles involved in the science of Marine Construction and with the development and actual condition of the art as it is represented by the widest range of present-day practice. The student is thus fitted to take up intelligently the practical study of his profession as found in the routine office work connected with marine design. With the start thus obtained and the broad training in fundamental principles which the undergraduate course seeks to give, the attainments of the student in this field will be limited only by his industry, continuity of purpose, and the special direction in which his efforts are expended.

The purpose of the work offered in the graduate courses is to give opportunity for advanced study and research along special lines of work, at the same time broadening, rounding out and strengthening the work of the undergraduate course.

The methods of work in the graduate year are to a large extent individual and vary with the subject involved. They include directed courses of reading and study, special conferences with the professor, or courses of lectures dealing with the topics under examination, together with special research and investigation in such manner as may be most suitable to the subject in hand.

8. **The Graduate School of Railway Mechanical Engineering** was authorized by the Board of Trustees, June, 1896, and was organized in February, 1898. Its purpose is to concentrate and systematize the work in the mechanical engineering of railway machinery previously constituting a subordinate part of the existing courses, and to offer special instruction to students who have completed a general course in technical institutions of high rank, and, furthermore, to members of the engineering profession desiring special knowledge in this field. For all such, in addition to instruction in this department of engineering of immediate practical value, courses of work are also available in other associated departments of the College and of the University, in such form and in such amount as will be best adapted to their necessities.

The courses in the school have special relation to the designing, manufacture, service in operation, repairing, and the test trials of

locomotives and other rolling stock and their equipment; and with the problems connected with the other kinds of machinery employed in railway operation. They are particularly adapted to the needs of the young engineer seeking to find his way into the mechanical departments of railways and into the positions, ultimately, of superintendents of shops and of motive power. These courses are also suitable for those who desire to become locomotive or car builders, as managers eventually of so-called "contract shops"; and for those whose interests lean towards the railway supply business, as the mechanical engineer, superintendent of works, or traveling representatives of firms furnishing equipment, supplies and tools for locomotives, cars, and shops.

In addition to the courses offered in Sibley College, as purely professional, there will be found in the scheme of the special courses leading to advanced degrees, opportunities for pursuing work in economics, in law, and in allied professional and scientific departments, in all that great variety characteristic of the University.

The School so arranges its work, also, as to connect closely with the undergraduate work of Sibley College. Students in the undergraduate courses may begin to specialize in their sophomore year by electing problems relating to locomotive details in course D 5, Mechanical Drawing. In the Junior year the Railway Seminary becomes available. Juniors who are ahead of their course and have the proper preparation and time, may still further specialize by elections from the senior courses in the Railway School. In the senior railway year, about half the student's time is devoted to railway subjects. The graduate year carries the specialized instruction to far greater thoroughness, handling the various problems with the strictly engineering completeness of the actual railway motive power department. Railway seniors, who have the available time, may elect some of this advanced graduate work. In general, with the above additions, the railway course is identical with the regular course in mechanical engineering for the first three years.

Graduates of engineering schools who have had the equivalent of the senior year in the regular course, can take a special graduate year, made up of the senior railway subjects and such electives from the graduate subjects as may be desired.

Particular attention is called to the opportunity offered for practical experience in railway and locomotive shops during the summer vacation. From 1899 there have been about thirty shops open each summer to the students for this three months of work, at wages more than covering expenses of which from sixty to eighty students of all classes

have annually availed themselves, some for three successive seasons. The importance of this work, as preparatory to the courses of the Railway School, for developing character and self reliance, and for a better standing at the later entrance into permanent positions after graduation, cannot be overestimated. It should be noted that this summer work or its equivalent is required before entrance to the principal railway course.

Inspection trips, accompanied by the Principal of the School as field lecturer, are made to important railway and manufacturing centers during the year, with a long tour covering the spring recess, at reduced rates.

[Circulars of Special Schools will be sent on application.]

Opportunities for Chemical Engineering.

Excellent opportunities are opening in increasing numbers for men trained as mechanical engineers and familiar with the processes and methods of industrial chemistry. Students interested in this specialty may profitably supplement the work in mechanical engineering by the various courses in analytical and industrial chemistry, as specified under Chemistry in the Academic Department. The elective time of the regular course in mechanical engineering may be given to these subjects, and, in special cases, permission may be obtained to substitute work in applied chemistry for a certain part of the work of the regular course. See Chemistry pp. 161 to 169.

Special Students.—Special students are sometimes admitted who are expected to follow as closely as possible a course of instruction planned with reference to their needs and approved by the Director of the College. This instruction does not lead to a degree and is only intended for students who are unable to pursue a complete college course, or who desire special instruction in advanced and graduate work.

Non-Resident Lecturers, etc.—Supplementing the regular course of instruction, lectures are delivered from time to time by the most distinguished men and the great specialists of the profession. Extended "Inspection Tours" are made to the great cities and manufacturing establishments during the spring vacation, when sufficient numbers are enrolled.

Persons desiring more information in regard to any subject connected with Sibley College should address "The Director of Sibley College."

BUILDINGS AND EQUIPMENT OF SIBLEY COLLEGE.

The buildings of **Sibley College** occupy a ground enclosed between East and Central Avenues, at the north end of the Campus, leased from the University for the purposes of the College, under an agreement with the late Hiram Sibley.

The main building of **Sibley College** is three hundred and seventy feet long, fifty feet in width, and three stories in height. It contains museums, the reading-room, drawing-rooms, lecture-rooms, large and well-lighted auditorium, and the class-rooms and offices of the different professors. The workshops are placed in separate buildings and consist of a machine shop, a foundry, a blacksmith shop, and a wood-working shop, and include rooms devoted to the storage of tools. Besides these there is an additional building, one hundred and fifty feet by forty in dimensions, and two stories in height, occupied by the laboratories of the department of experimental engineering. At the bottom of Fall Creek Gorge is the house protecting the turbines which supply the power ordinarily required for driving the machinery of the College, and the electric apparatus for lighting the campus and the buildings, and, near it, a steam pumping station used as a reserve when the power of the hydraulic station is unequal to the demand for water supply. The large engine and dynamo room, containing all the engines and dynamos employed in lighting the University, is adjacent to the shops, and beside the boiler-room in which are placed the 200 H.P. boilers furnishing steam to these and the experimental engines.

The Collections of **Sibley College** are of exceptional extent, value, and interest. A principal room on the first floor of the main building is devoted to the purposes of a museum of illustrative apparatus, machinery, products of manufacturing, and collections exhibiting processes and methods, new inventions, forms of motors and other collections of value in the courses of technical instruction. In this museum is placed a large Reuleaux collection of models of kinematic movements. Besides these are the Schroeder and other models exhibiting parts of machinery, the construction of steam engines and other machines, and a large number of samples of machines constructed to illustrate special forms and methods of manufacture. Many of these machines and tools have been made in the University shops. The lecture rooms of **Sibley College**, each being devoted to a specified line of instruction and list of subjects, are each supplied with a collection of materials, drawings, models, and machines, especially adapted to the wants of the lecturer. The course of instruction in mechanical engineering is illustrated by a fine collection of

steam engines, gas and vapor engines, water-wheels and other motors, models and drawings of every standard or historical form of prime mover, or parts of machines, and of completed machinery.

The collections of the Department of Drawing and Art include a large variety of studies of natural and conventional forms, shaded and in outline, geometrical models, casts and illustrations of historical ornament, and remarkably fine collections of casts, of pattern and other art work.

A special museum building, 35 by 75 feet, has been erected for the School of Railway Mechanical Engineering, in which is an important and growing collection of railway appliances, either new, or showing failures in service, or tested in Sibley laboratories.

The workshops are supplied with every needed kind of machine or tool, including lathes, and hand and bench tools sufficient to meet the wants of two hundred and fifty students of the first year, in wood-working ; in the foundry and forge, all needed tools for a class of two hundred in the second year ; in the machine shop, machine tools from the best builders, and a great variety of special and hand tools, which are sufficient for a class of one hundred and fifty in the third year, and as many seniors and graduate students.

The Sibley College Mechanical Laboratories in charge of the department of experimental engineering contains the apparatus for demonstration and experimental research of Sibley College, in which instruction is given and investigation is conducted. They are supplied with the apparatus for testing materials and for experimental work in the determination of the power and efficiency of heat and hydraulic motors, and have facilities for operating and testing the steam and hydraulic power plant employed in driving the machinery of the establishment, boiler testing plant and instruments ; and with twenty machines of the various standard types for testing the strength of metals, including machines of 50, 100, and 150 tons capacity ; and one 60,000 and one 200,000 pound Emery machine, of extraordinary accuracy and delicacy. Sixteen steam engines, twelve air, oil, and gas engines, fourteen dynamometers, eight lubricant-testing machines, about fifty standard pressure gauges and an equally numerous collection of steam engine indicators, together with other apparatus and instruments of precision employed by the engineer in such researches as he is, in practice, called upon to make, are collected here. A large hydraulic " plant " is employed for experimental purposes and for research. All the motors of the University, and its boilers, amounting to 1000 horse-power, are available for test trials. The steam engines are set up, with the heavy lighting dynamos, adjacent to the boilers ;

among them a 200 H.P. "experimental engine," and several of smaller power, including 150 H.P. steam-turbine with dynamo attached, and a 20 H.P. quadruple expansion experimental engine and steam boiler, designed and built by students, and arranged to use with steam at 500 pounds pressure, exhibiting an efficiency without precedent at its date.

The laboratories have a total floor space exceeding 25,000 square feet and are divided into several departments for instruction and investigation. The department of steam engineering possesses one triple expansion Corliss engine, one triple expansion slide valve engine of 60 horse power, one quadruple expansion engine and numerous examples of simple and compound engines and pumps; one Parsons steam turbine of 200 horse power and one De Laval turbine of 25 horse power capacity, it also contains two Babcock and Wilcox water tube boilers fitted with superheating apparatus, one Heine water tube boiler, one Roberts water tube boiler, one special water tube boiler for 1000 pounds steam pressure and several examples of shell boilers; it also contains several surface condensers, heaters, traps and other accessories of a steam power plant; it also contains all apparatus necessary for the complete tests of steam engines and other motors, including about eighty indicators, and a large collection of gauges, thermometers, reducing motions, etc. The department of internal combustion motors includes a very complete collection of hot air engines, gas and oil engines of various types, which are sufficient to illustrate all the principal improvements in this art which have been made since the earliest use of a successful gas engine; altogether, the department has thirteen working motors of this type, with all the facilities required for testing. The department of refrigeration and air compression includes one complete refrigerating plant of small size with all apparatus for testing, several air compressors of both the single and two-stage type; several fans and blowers with apparatus for testing; one complete set of air brake apparatus, a rock drill, and a number of compressed air tools, also a meter for the measurement of compressed air. The department of lubrication and friction contains a complete assortment of apparatus for the measurement of the friction, and the testing of lubricants, including eight oil testing machines; and apparatus for the measurement of viscosity, and other physical properties of oils. It also contains a large collection of transmission and absorption dynamometers for the measurement of power. The department of hydraulic machinery possesses a number of hydraulic motors, pumps, hydraulic rams, and apparatus for testing the same; it also contains a number of small weirs, nozzles, and other apparatus for

measuring the flow of water. The department for testing strength of materials, is well equipped for this purpose, containing one Emery testing machine of extraordinary accuracy and delicacy of 200,000 pounds capacity, and some twenty other machines ranging in capacity from 300,000 pounds to 50,000 pounds and adapted for testing by transverse, tension, compression and torsion. The department of engineering chemistry possesses apparatus for making the approximate analysis and determining the heating value of coals; for analyzing flue gases and products of combustion; for the manufacture of small samples of Portland cement, and for testing the strength and other properties of cement.

The Laboratories of Electrical Engineering, including the electrical apparatus of the Departments of Electrical Engineering and Experimental Engineering of Sibley College, and also that available in the Departments of Physics and Chemistry, comprehend many special collections of apparatus and equipment. This equipment is adapted to the giving of experimental lectures, to laboratory practice, to complete plant testing, to standardization and to original investigation. In addition to the usual complement of apparatus for demonstration, the lecture equipment includes an air-insulated, high-pressure transformer with necessary regulators for subjecting insulators and insulating material to alternating pressures up to 80,000 volts. This may be supplemented by additional transformers for raising the pressure still higher. A 30,000 volt inductorium provides current for wireless telegraphy. Large cathode ray tubes, supplied from a special multiple plate, power driven static machine, are used for the demonstration of alternating current phenomena. All the standard equipment, as well as many pieces of specially designed apparatus are employed to show to the classes the operation of the principal laws applied in electrical engineering. Exhibits of apparatus, such as street railway car controllers, rail sections, insulating and line material, etc., are provided in profusion. This list includes a complete outfit for exhibiting in actual operation the multiple unit system of electric car control. The laboratory apparatus comprises a full complement of alternating and direct current machinery of all kinds. Recent additions include a two-phase generator of excellent design, single and polyphase induction motors, a rotary convertor and transformers, switchboards and auxiliaries necessary for exercises in polyphase practice. There are, in addition, many single phase machines suitable for operation as generators or as synchronous motors. A large variety of direct current dynamos and motors suitably mounted for testing, cover the field of direct current machinery. Arc lamps, a weld-

ing machine, photometers and many other special devices are included in the equipment. A De Laval steam turbine, geared to a double current generator, a direct-connected marine set and circuit-breakers, switches, water rheostats, and other auxiliaries are in use for plant test experiments. The plant testing is done largely outside of the College buildings, and for this purpose a large variety of ammeters, voltmeters, wattmeters, and other instruments are maintained in adjustment at a high standard of accuracy. These instruments have capacity great enough for testing the largest power plants. Special facilities are provided for the standardization of all electrical apparatus. Board of Trade and Reichanstalt standards of resistance with large current carrying capacity, potentiometers and galvanometers, and reference standards of electro-motive force are among the facilities provided for this purpose. The College possesses a Parsons steam turbo-alternator of 150 kilowatt capacity, provided with all the apparatus necessary for complete study and investigation of this class of machinery. A number of lighting alternators, and direct current power and lighting generators are available for the same purpose. A remarkable set of generators recently installed produces a pressure of 14,000 volts direct current by connecting in series, and most carefully insulating twenty-four 550-volt dynamos. The pressure thus available opens up a wide field of investigation. In addition to the apparatus at the University, the students may observe in operation a modern three-phase power transmission in the local power and lighting service. Large direct connected generators, rotaries, constant current regulators and induction motors, as well as the lighting and railway system are convenient for inspection.

Scholarship and Prizes.

Sibley Prizes in Mechanic Arts.—Under the gift of the late Hon. Hiram Sibley, made in 1884, the sum of one hundred dollars will be annually awarded to those students in the Sibley College who shall, in the opinion of the Faculty of that institution, show the greatest merit in Sibley College work.

The Frank William Padgham Scholarship will be assigned to the best competing candidate in the scholarship examinations in the studies required for entrance to the regular course in Mechanical Engineering, who shall have had his preparatory education in the public schools of Syracuse, New York. For particulars see pp. 59 and 60.

REQUIREMENTS FOR ADMISSION.

The following subjects are required for admission : English, History [the student must offer one of the four following divisions in History : (a) American including Civil Government ; (b) Mediæval and Modern European ; (c) English ; (d) Ancient] ; Plane Geometry, Elementary Algebra. See pages 33-36.

In addition to the above primary entrance subjects, the applicant must offer as below.

1. In *Solid Geometry, Advanced Algebra*, and in *Plane and Spherical Trigonometry*, as much as is contained in the standard American and English text-books. See page 46.

2. In *Advanced French and Advanced German* (German preferred) as given on pages 38 and 39.

3. The applicant must have presented a Regents' Diploma (page 50) or a certificate (page 51) of graduation from an approved school. Otherwise he must, in addition to the requirements mentioned in 1 and 2, pass examination or present acceptable certificates representative of an amount of work equivalent to three years' time in a single subject in preparatory schools of approved standing.*

For the above work a free choice among the various subjects taught in the preparatory schools of approved standing, and not otherwise counted, will usually be accepted ; at the same time, combinations of the following subjects are recommended as most suitable for entrance to the courses in Sibley College : *The Alternate Modern Language, Free-Hand Drawing, Physics, Chemistry.*

The candidate is advised not to limit his preparation to the above formal requirements, but to secure before entering upon his professional course, the most comprehensive general and liberal education which his circumstances will allow.

[*For details as to subjects and methods of admission see pages 33-73.*

For admission to the freshmen class, communications should be addressed to the Registrar. See pages 35-52.

For admission to advanced standing from other colleges and Universities, and as specials, communications should be addressed to the Director or the Secretary of Sibley College. See pages 52 and 53.

For admission to graduate work and candidacy for advanced degrees, communications should be addressed to the Dean of the University Faculty. See pages 69-73.

* This additional requirement is equivalent to 12 counts on the Regents' scale in the State of New York.

COURSES IN MECHANICAL ENGINEERING LEADING TO THE DEGREE OF MECHANICAL ENGINEER.

Regular Course.

The letters and figures relate to the departments and courses in Sibley College as described on pp. 380 and 386.

<i>Freshman Year.</i>	No. Course.	1st Term.	2d Term.
German or French	1 or 2	3	3
Analytic Geometry	2	4	—
Differential Calculus	2	1	2
Integral Calculus	2	—	3
Chemistry or Drawing	1	6	—
Drawing or Chemistry	2 or 1	—	6
Shopwork	1	3	3

In addition to the above the required Drill must be taken.

<i>Sophomore Year.</i>	No. Course.	1st Term.	2d Term.
Mechanics of Engineering	20	5	5
Descriptive Geometry	8	2	2
Physics	1	4	4
Chemistry or Drawing	6 or 5	5	—
Drawing or Chemistry	5 or 6a	—	5
Shopwork	5	3	3

<i>Junior Year.</i>	No. Course.	1st Term.	2d Term.
Steam Machinery	M.E. 11	—	4
Electrical Machinery	E.E. 11	4	—
Drawing and Design	M.D. 10	2	2
Kinematics and Kinetics	M.D. 11a	3	—
General Machine Design	M.D. 12	—	3
Materials of Engineering	X.E. 10	2	—
Physical Laboratory	Physics 3	2	2
Mechanical Laboratory	X.E. 11	3	3
Shopwork	M.A. 10	3	3

<i>Senior Year.</i>	No. Course.	1st Term.	2d Term.
Steam Engines and other Motors	M.E. 20	5	2
Physical Laboratory	Physics 5	3	—
Mechanical Laboratory	X.E. 20	2	1
Mechanical Laboratory	X.E. 20a	1	—
Engine Design (or 22)	M.D. 20	4	—
Designing (or 23)	M.D. 21	2	3
Thesis: Designing and Drawing, Mechanical Laboratory Investigations, Shopwork, time divided optionally, but subject to approval of the Director		—	8
Elective		2	3-5

Course in Electrical Engineering.

The freshman, sophomore, and junior years are identical with the course in Mechanical Engineering; in the senior year, laboratory work is increased, and advanced electrical engineering work introduced.

<i>Junior Year.</i>	No. Course.	1st Term.	2d Term.
Steam Machinery	M. E. 11	4	—
Electrical Machinery	E. E. 10	—	4
Drawing and Design	M. D. 10	2	2
Kinematics and Kinetics	M. D. 11a	3	—
General Machine Design	M. D. 12	—	3
Materials of Engineering	X. E. 10	2	—
Physical Laboratory	Physics 3	2	2
Mechanical Laboratory	X. E. 11	3	3
Shopwork	M. A. 10	3	3

<i>Senior Year,</i>	No. Course.	1st Term.	2d Term.
Physics, Laboratory work and Lectures	4 8	4 1	4 1
Steam Engine and other Motors	M. E. 20	5	2
Mechanical Laboratory	X. E. 20	2	1
Mechanical Laboratory	X. E. 20a	1	—
Electrical Engineering	E. E. 20	5	—
Electrical Engineering	E. E. 21	—	3
Electrical Machinery	E. E. 24	2	—
Thesis, including laboratory, drawing and shop		—	8

Courses in Marine Engineering and Naval Architecture.

The freshman and sophomore years are identical with the course in Mechanical Engineering. In the junior year slight changes are made in order to begin introductory courses in Naval Architecture and Shipbuilding. In the senior year a still larger proportion of marine work is introduced as shown below. Special circulars relating to this work will be sent on application.

Course for Marine Engineers.

<i>Junior Year.</i>	No. Course.	1st Term.	2d Term.
Steam Machinery	M. E. 11	—	4
Electrical Machinery	E. E. 11	4	—
General Machine Design	M. D. 12	—	3
Kinematics and Kinetics	M. D. 11a	3	—
Materials of Engineering	X. E. 10	2	—
Physical Laboratory	Physics 3	2	2
Mechanical Laboratory	X. E. 11	3	3
Shopwork	M. A. 10	3	3
<i>Naval Architecture</i>	M. C. 10	3	3

<i>Senior Year.</i>	No. Course.	1st Term.	2d Term.
<i>Naval Architecture</i>	M.C. 20	----- -	----- 3
<i>Shipbuilding</i>	M.C. 11	----- -	----- 3
<i>Marine Engineering</i>	M.C. 22	----- 5	----- 3
Steam Engines and other Motors	M.E. 20	----- 5	----- 2
Physical Laboratory	Physics 5	----- 3	----- -
Mechanical Laboratory	X.E. 20	----- 2	----- 1
Mechanical Laboratory	X.E. 20a	----- 1	----- -
<i>Thesis</i>		----- -	----- 8

Course for Naval Architects.

<i>Junior Year.</i>	No. Course.	1st Term.	2d Term.
Steam Machinery	M.E. 11	----- -	----- 4
General Machine Design	M.D. 12	----- -	----- 3
Kinematics and Kinetics	M.D. 11a	----- 3	----- -
Materials of Engineering	X.E. 10	----- 2	----- -
Mechanical Laboratory	X.E. 11	----- 3	----- 3
<i>Naval Architecture</i>	M.C. 10	----- 3	----- 3
<i>Shipbuilding</i>	M.C. 11	----- 3	----- 3
Shopwork	M.A. 10	----- 3	----- 3

<i>Senior Year.</i>	No. Course.	1st Term.	2d Term.
Steam Engines and other Motors	M.E. 20	----- 5	----- 2
Physical Laboratory	Physics 3	----- 2	----- 2
Electrical Machinery	E.E. 11	----- 4	----- -
<i>Naval Architecture</i>	M.C. 20	----- 4	----- 3
<i>Ship Construction and Design</i>	M.C. 21	----- 5	----- 2
<i>Thesis</i>		----- -	----- 8

Courses in Railway Mechanical Engineering.

The freshman, sophomore, and junior years are identical with the regular course in mechanical engineering, though locomotive details may be elected in Mechanical Drawing, D. 5, by sophomores and the Railway Club, R. 22, by juniors. The senior year of the Graduate School of Railway Mechanical Engineering is arranged to take the place of the senior year in the regular course. The graduate year is arranged for those who have taken the senior railway year.

For graduate students who have not taken any of the railway subjects of the senior railway year, but have had the equivalent of M.E. 20, X.E. 20, X.E. 20a, Physics 5, and R. 10, a special graduate year is provided, consisting of R. 20, R. 21, R. 22, two hours of R. 30, E.E. 32, and sufficient electives to make a total of fifteen hours per week.

The senior railway courses may be elected separately by seniors in other departments or by juniors who may have the proper preparation and time.

Further information will be sent on application to the Principal of the Graduate School of Railway Mechanical Engineering.

<i>Senior Year.</i>		No. Course.	1st Term.	2d Term.
<i>Railway Machinery</i>	R. 20	-----	4	----- 4
<i>Designing</i>	R. 21	-----	3	----- (1)
<i>Locomotive Testing (elective in place of R. 21, 1 hour)</i>	X.E. 21	-----	(1)	----- -
<i>Railway Club</i>	R. 22	-----	1	----- 1
<i>Electric Railways</i>	E.E. 32	-----	1	----- 1
Steam Engines and other Motors	M.E. 20	-----	5	----- 2
Mechanical Laboratory	X.E. 20	-----	2	----- 1
Mechanical Laboratory	X.E. 20a	-----	1	----- -
Physical Laboratory	Physics 5	-----	1	----- 2
<i>Thesis</i>		-----	-	----- 8
<i>Graduate Year.</i>		No. Course.	1st Term.	2d Term.
<i>Advanced Railway Mech. Eng.</i>	R. 30	-----	5	----- 5
<i>Plant Designing</i>	R. 31	-----	3	----- 3
<i>Railway Club</i>	R. 22	-----	1	----- 1
Elective		-----	6	----- 6

A Six Year Course Leading to the Two Degrees A.B. and M.E.

Juniors and seniors in good standing in the Academic Department are allowed, with the permission of the Faculty of Arts and Sciences, and with the consent of the Faculty concerned in each case, to elect studies in other Colleges which shall count toward graduation in the Academic Department. but the sum total of hours elected cannot exceed the number required for one year's work in such Colleges, nor exceed nine hours per week in any term.

In accordance with this provision the following suggestion is given for a six year course leading to the degrees of A.B. and M.E. Subjects in italics are those common to the courses for both degrees. With this end in view Descriptive Geometry may be taken in the sophomore year of the course for A.B.

<i>Freshman Year.</i>		No. Course.	1st Term.	2d Term.
<i>Analytic Geometry</i>	2	-----	4	----- -
<i>Differential Calculus</i>	2	-----	1	----- 2
<i>Integral Calculus</i>	2	-----	-	----- 3
<i>French or German</i>	1 or 2	-----	3	----- 3
<i>Chemistry or Drawing</i>		-----	6	-----
<i>Drawing or Chemistry</i>		-----		----- 6
Elective in Arts and Sciences	(Maximum)	-----	4	----- 4
Drill		-----	2	----- 2
Gymnasium	6	-----	1	----- 1
<i>Sophomore Year.</i>		No. Course.	1st Term.	2d Term.
<i>Physics</i>	1	-----	4	----- 4
<i>Chemistry</i>	6	-----	6	-----
Descriptive Geometry	C.E. 8	-----	2	----- 2
Elective in Arts and Sciences	(Maximum)	-----	6	----- 12

<i>Junior Year.</i>	No. Course.	1st Term.	2d Term.
Mechanics.....	C.E. 20	5	5
Shopwork.....		3	3
Physics.....	3 & 5	4	4
Elective in Arts and Sciences.....	(Maximum)	6	6

<i>Senior Year.</i>	No. Course.	1st Term.	2d Term.
Drawing.....	D. 2	3	2
Shopwork.....		3	3
Steam Machinery.....	M.E. 11		4
Electrical Machinery.....	E.E. 10	4	
Elective in Arts and Sciences.....	(Maximum)	9	10

The completion of the above courses will lead to the degree of A.B.

<i>5th Year.</i>	No. Course.	1st Term.	2d Term.
Kinematics and Kinetics.....	M.D. 11a	3	
General Machine Design.....	M.D. 12		3
Drawing and Design.....	M.D. 10	2	2
Materials of Engineering.....	X.E. 10	2	
Mechanical Laboratory.....	X.E. 11	3	3
Shopwork.....		3	3
Elective.....		5	4

<i>6th Year.</i>	No. Course.	1st Term.	2d Term.
Steam Engines and other Motors.....	M.E. 20	5	2
Mechanical Laboratory.....	X.E. 20	2	1
Mechanical Laboratory.....	X.E. 20a	1	
Designing, M.D., 20, 21 or 22, 23.....		6	3
Thesis.....			8
Elective.....		5	5

The completion of the above additional courses will lead to the degree of M.E.

For those taking the course in electrical engineering, or who may wish to specialize in the undergraduate course of the graduate schools, the arrangement of a six year course for both degrees would be slightly different, as indicated by the details of these various courses of study.

Courses of Instruction.

The courses in each department are numbered in accordance with the following plan :

Numbers	1 to 4 inclusive	denote	Freshman	subjects
"	5 to 9	"	"	Sophomore
"	10 to 19	"	"	Junior
"	20 to 29	"	"	Senior
"	30 to 35	"	"	Graduate

Three hours in the shops or drawing rooms count as one hour in the schedule.

Unless otherwise noted the courses run continuously throughout the year.

THESIS.

The thesis is intended to represent the results of some special study or investigation, either theoretical or experimental, or preferably both. It is furthermore intended to enable the student to show the results of his training as an engineer, and his capacity for the intelligent study of special or original problems.

The subject of the thesis must be submitted for the approval of the Director of the College not later than the Christmas recess, and the thesis in complete form must be handed in not later than the 15th of May following. In special cases, and upon the recommendation of the professor having immediate oversight of the work, the time limit for the submission of the completed thesis may be extended.

Department of Mechanical Engineering. [M.E.]

10. **Steam Machinery.** First term for Electrical Engineers. Second term for all others. Requires course 1 Physics, and 20 C.E. Juniors. Recitations. Credit, 4 hours. Mr. GARDNER.

20. **Steam Engines and other Motors.** Thermodynamics and the theory of steam and other heat engines. Lectures. Five hours per week from the beginning of the year to the Easter recess, Credit, 5 hours first term, 2 hours second term. Daily except S., 11. Professor THURSTON.

21. **Applied Theory of Steam and other Engines.** Elective. Finance of Design and Operation. Two hours per week from the Easter recess to the close of the year. Credit, 1 hour second term. T., Th., 11. Professor THURSTON.

30. **Advanced Work in Special Courses and Graduate Work in Mechanical Engineering.** As may be assigned by Professor THURSTON.

31. **Finance of Engineering and Economics of Manufacturing Establishments.** Elective. Three hours per week from the Easter recess to the close of the year. Credit, 2 hours second term. M., W., F., 11. Professor THURSTON.

Department of Experimental Engineering. [X.E.]

10. **Materials of Engineering.** Juniors. Two hours. First term. Lectures. M., W., 10. Professor CARPENTER and Assistant Professor DIEDERICHS.

11. **Mechanical Laboratory.** Three hours. Credit made up as follows: one hour for lecture or recitation, one hour for three hour laboratory period, and one hour for written report. Juniors. Strength

of materials, tension, transverse testing, compression, torsion, impact testing, strength of large specimens, and special research; calibrating dynamometers, steam gauges, weirs, and meters; oil testing, flue gas analysis, calorimetry, thermometer calibration, valve setting and indicator practice; test of durability of lubricants, efficiency tests, water motors, centrifugal pumps, gas engines, injectors, steam pumps, and indicator practice. One hour of class-room work. Daily 2-5. Professor CARPENTER, Assistant Professor DIEDERICHS, and Messrs. GOULD, DUKES, SHIPMAN, HEPBURN, and YOUNG.

20. **Mechanical Laboratory.** Two hours. Credit made up as follows; One hour for three hour laboratory period and one hour for written report. Course runs from the beginning of the year to the Easter recess. Credit, 2 hours first term, one hour second term. Seniors. Lectures and recitations. Efficiency tests, steam boilers, steam engines, turbine water-wheels, air compressor, hot air engines, blowing fans, transmission of power by belting and gearing. Test of steam engine and application of Hirn's analysis, power required to drive machine tools, test of a steam-heating plant, test of power plants not at the University. Efficiency test of injectors, refrigerating machinery, electric power stations. Daily 2-5. Professor CARPENTER, Assistant Professor DIEDERICHS, and Messrs. GOULD, DUKES, SHIPMAN, HEPBURN, and YOUNG.

20 a. **Recitations on Laboratory Practice and Problems.** Seniors. One hour per week for the same period as course 20.

21. **Elementary Problems in Consulting Practice.** Power Plant Installation. Engine Handling. Seniors. Lectures. M., T., 5-6. Mechanical Laboratory practice and research. Locomotive testing and engine handling. Daily 2-5. Professor CARPENTER, Assistant Professor DIEDERICHS and Mr. GOULD.

30. **Special Research; Commercial Tests.** Graduates and advanced students. Professor CARPENTER.

Department of Electrical Engineering. [E.E.]

10. **Electrical Machinery.** Juniors in Electrical Engineering. Four hours, second term. Recitations in three sections as follows, M., 8, W., 8, Th., 11, F., 8; M., 9, T., 11, Th., 12, F., 9; M., 11, W., 11, Th., 10, F., 11. Assistant Professor NORRIS and Mr. MACOMBER.

11. **Electrical Machinery.** Juniors in Mechanical Engineering, Marine Engineering, and seniors in Naval Architecture. Four hours, first term. Lectures. M., W., Th., F., 8. Assistant Professor NORRIS and Mr. MACOMBER.

20. **Electrical Engineering.** Requires course E.E. 10, C.E. 20, and Junior Physics. Seniors. Five hours, first term. Lectures. M., T., W., Th., S., 12. Professor RYAN and Mr. MACOMBER.

21. **Designing and Drawing.** Seniors. Three hours, second term. M., T., W., Th., F., 8-11, Professor RYAN and Mr. MACOMBER.

22. **History of the Development of Electrical Engineering.** Seniors and graduates. One hour, second term. Lectures. T., 12. Professor RYAN.

23. **Finance of the Production and Utilization of Electrical Energy.** Seniors and graduates. One hour, second term. Lectures. Th., 12. Professor RYAN.

24. **Electrical Machinery.** Seniors. Continuation of course 10, which is required for admission. Two hours, first term. Recitations. M., W., Th., F., 10. Assistant Professor NORRIS and Mr. MACOMBER.

30. **Electrical Engineering.** Study of University equipment, local plants, etc. Seniors and graduates. Two hours, second term. Lectures. S., 8. Inspection sections as arranged. Assistant Professor NORRIS and Mr. MACOMBER.

31. **Electrical Engineering.** Graduates. Special work. Professor Ryan.

32. **Electric Railways.** Advanced work. Required of seniors in railway mechanical engineering. Seniors and graduates. One hour, first and second terms. Lectures. S., 9. Assistant Professor NORRIS.

33. **Electrical Engineering.** Methods for practical tests of materials and equipment. Required of students electing "plant test" theses. One hour, first term. Lectures. S., 8. Professor RYAN.

Department of Mechanic Arts. [M.A.]

1. **Shopwork.** Woodworking: use of tools; carpentry; joinery; turning; pattern-making.

5. **Shopwork.** Blacksmithing; use of tools, forging, welding, tool-dressing, etc.

10. **Shopwork.** Foundry work; moulding, casting, mixing metals, brass work, etc.

20. **Shopwork.** Machinist work; use of hand and machine tools; working to form and to gauge; finishing; construction: assemblage; erection.

Each of the above courses three hours. Daily as assigned, 8-11, 11-2, 2-5. Professor MORRIS, Messrs. WISEMAN, WOOD, VANDERHOEF, POLLAY, VANDERHOEF, STARKINS, HEAD, and LOOMIS.

Department of Industrial Drawing and Art. [D.]

1. Freehand Drawing. (a) Freshmen in Sibley College. Six hours per week for one term. Daily, 8-11, 2-5 as assigned. For other students, three hours per week for the year. T., Th., 2-5; S., 8-11. (b) Advanced work comprising charcoal drawing, pen and ink drawing, decoration, modelling, water-colors, etc.; hours as assigned. Assistant Professor CLEAVES, Messrs. GUTSELL, WILSON, BAKER, WOOD, and DAWSON.

20 History of Art. Lectures on Painting, Sculpture, and the Industrial Arts in mediæval and modern times. T., Th., 12. Mr. GUTSELL.

Department of Machine Design. [M.D.]

5. Mechanical Drawing. Sophomores. Five hours per week for one term. Daily, 2-5 as assigned. Assistant Professor COOLIDGE, Messrs. J. S. and D. REID.

10. Drawing and Designing. Requires course 8 C.E., and should be taken in connection with courses M.D. 11a and 12. Juniors. Drawing (two hours credit). M., W., F., 11-1; T., Th., S., 9-11; or T., Th., S., 11-1. Messrs. MOORE and HARDING.

11a. Kinematics and Kinetics. Requires 20 C.E. Juniors. Three recitations per week, first term. Graphical methods of machine design, mechanics of machinery, problems in transmission of motion and energy, strength of machine members, etc. Recitations. M., W., F., 8, 9, 11; M., W., 12, F., 10; T., Th., S., 10, 11, 12. Messrs. MOORE and HARDING.

12. Machine Design. Requires course M.D. 11a. Juniors. Three hours, second term. Lectures, M., W., F., 10. Professor BARR.

20. Steam Engine Design. Requires courses 11a, 12 and M.E. 10. Seniors. Four hours, first term. Lectures, T., W., Th., F., 10. Professor BARR.

Note.—Seniors in mechanical engineering have an option of courses 20 and 21, or 22 and 23.

21. Designing and Drawing. Requires courses 11a, 12 and M.E. 10. Seniors. Credit, 2 hours first term, 3 hours second term. Designing of engines, boilers, steam plants, etc., and intended to accompany course 20. Drawing, T., W., Th., 2-5. Professor BARR and Mr. MOSS.

22. Machinery and Millwork. Requires courses 10, 11a and 12. Seniors. Three hours, first term. Lectures, M., W., F., 12. Assistant Professor COOLIDGE.

See note under course 20.

23. **Designing and Drawing.** Requires courses 10, 11a and 12. Seniors. Three hours first term, three hours second term. Designing of machine tools, transmission and hoisting machinery, etc.; intended to accompany course 22. Drawing daily except S., 8-11. Assistant Professor COOLIDGE and Mr. MOSS.

24. **Gas Engine Design.** Requires courses 11a, 12 and M.E. 10. Elective for seniors. Two hours per week first term. Lectures, T., Th., 9. Mr. MOSS.

25. **Mining Machinery.** Requires courses 11a, 12 and M.E. 10. Elective for seniors. Two hours per week first term. Lectures, M., W., 9. Professor BARR.

30. **Advanced Designing.** Requires courses 20 and 21; 22 and 23; 24; or 25. Professor BARR, Assistant Professor COOLIDGE and Mr. MOSS.

NOTE.—Students who have not taken courses 20 and 21 or 22 and 23 in first term will not be registered for the courses in the second term.

School of Marine Construction. [M.C.]

10. **Naval Architecture.** Elementary theory of a floating body. Computation of various geometrical quantities. Lectures and exercises in computation. Three hours per week. Professor DURAND.

11. **Shipbuilding and Design.** Methods of ship construction. Laying down and fairing lines. Drawing general arrangement plans and various structural elements. Three hours, lectures and drawing. Assistant Professor MCDERMOTT.

20. **Naval Architecture.** More advanced theory of a floating-body with applications to special problems. Strength of ships. Resistance, propulsion, and powering. Lectures and exercises in computations. Credit, 4 hours first term. Lectures, T., Th., 9. Credit, 3 hours second term. Lectures T., Th., and S., 9. Professor DURAND.

21. **Shipbuilding and Design.** Scantlings of vessel construction according to rules of Registration Bureaus, etc. Drawing of scantling sections. Discussion of the design of vessels of various services, including selection of suitable forms, speed and power, stability, trim, strength of completed structure, etc., embodying also the application of the subjects considered in courses 10 and 20. Three hours. Lectures, M., W., F., 9. Assistant Professor MCDERMOTT.

22. **Marine Machinery.** Descriptive study of marine boilers, engines, and auxiliary machinery. Design of characteristics and of structural details. Operation and care when under way. Lectures and drawing. Five hours. Lectures, M., W., F., 10. Professor DURAND.

30. **Naval Architecture.** Advanced work. As assigned. Professor DURAND.

31. **Ship Design.** Advanced work. As assigned. Assistant Professor MCDERMOTT.

32. **Marine Machinery.** Advanced work. As assigned. Professor DURAND.

33. **Seminary.** One hour. Professor DURAND and Assistant Professor MCDERMOTT.

34. **Specifications, Contracts, Estimates.** As assigned. Assistant Professor MCDERMOTT.

35. **Marine Auxiliaries.** As assigned. Professor DURAND and Assistant Professor MCDERMOTT.

School of Railway Mechanical Engineering. [R].

10. **Locomotive Shopwork.** One summer's work in a railway locomotive repair shop, or a locomotive "contract" building shop, or their equivalent, is required for entrance to course 20. While not yet required for the other railway courses, it is very strongly recommended and desired. The three summer vacations may, with great advantage, be spent in a railway shop, "contract" shop, and drafting room. These are situated in all sections of the country. Wages are paid to the inexperienced, up to \$1.50 per day. Three and a half months can usually be obtained, though three will fulfill the requirement. Arrangements can be made through Professor HIBBARD.

20. **Railway Machinery.** Requires course 10. The designing, manufacture, service in operation, and repairing of locomotives, tenders and cars. Lectures, reading and shop visits. Seniors and graduates. Credit, 4 hours each term. M., T., Th., S., 10. Professor HIBBARD.

21. **Designing.** Three hours (nine hours in drafting room) per week from the beginning of the year to the Easter recess. Credit, 3 hours first term, 1 hour second term. The 1 hour may be replaced by Locomotive Testing. Daily, 8 to 1, as may be arranged. Professor HIBBARD.

22. **Railway Club.** Discussion upon previously assigned railway journals. Special papers and reports. Forming of the individual Card Index. Juniors, seniors and graduates. One hour. W., 8, Professor HIBBARD.

30. **Advanced Railway Mechanical Engineering.** Lectures. directed reading, investigations, and Seminary discussions in amplification of course 20, taking up Shop and Round House arrangement, equipment and methods, Drafting Room Management, Compound

Locomotives, Freight Car Design, Railway Testing and Test Department, Motive power supplies, Organization, methods and records of Motive Power Department, Discipline and Management of Men, Wage Systems, Foreign Railway Engineering, Outlines of Railway Operation. Seniors 2d term, and graduates. Five hours or as assigned. Professor HIBBARD.

31. **Plant Designing.** Rolling Equipment, Round Houses and Shops. Advanced work. Seniors 2d term, and graduates. Three hours or as assigned, Professor HIBBARD.

Locomotive Testing. Elective in place of R. 21, 1 hour first term. X.E. 21. Professor HIBBARD and Mr. -----.

Locomotive Drafting. Those expecting to enter the Railway School should make request for locomotive details in Mechanical Drawing course D. 5. Sophomores. Five hours credit per week for one term. Assistant Professor COOLIDGE and Messrs. J. S. and D. REID.

Suggested Electives: Political Economy; elementary, transportation, labor, wages, corporations. Law; contracts and agency, carriers, injuries. Advanced railway quantitative analysis; anti-friction metals, iron and steel, boiler coverings, feed water and compounds, coal and its sulphur, waste, oils, paints and varnishes for wood and for steel. M.E. 21, 31. Experimental Engineering; 21, 30 in railway rolling stock, motive power equipment and supplies. E.E. 23. 31, 33. M.D. 22, 20. C.E.; Advanced Railroad Engineering, Structural Details, Masonry Foundations.

THE UNIVERSITY LIBRARY.

LIBRARY COUNCIL.

For the purpose of making recommendations to the Board of Trustees in regard to the business administration of the Library, there has been established a Library Council consisting of the President of the University (who is *ex officio* chairman); the Librarian; one Trustee elected by the Board; and four Professors elected by the University Faculty. The Council at present is constituted as follows:

JACOB GOULD SCHURMAN, President, of the University.

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PHILENA REBECCA SHELDON, A.B., Assistant in Accession Department.

ELIZABETH SAGE INGERSOLL, Assistant in Order Department.

HERMAN RALPH MEAD, Ph.B., Assistant in Reference Library.

EDITH ANNA ELLIS, B.L., Assistant in Circulation Department.

GEORGE LINCOLN BURR, A.B., Librarian of the President White Library.

ALEXANDER HUGH ROSS FRASER, LL.B., Librarian of the Law Library.

* Term of office expires 1903.

EDGAR DELOS SEBRING, Assistant in the Law Library.
 RICHARD KILLEN MCGONEGAL, Assistant in the Law Library.
 HARRY VERNON CLEMENTS, Assistant in Law Library.
 JULIA WHITON MACK, A.B., Librarian in charge of Architectural
 Library.

The University Library comprises the General Library of the University, the seven Seminary Libraries, the Law Library, the Flower Veterinary Library, and the Library of the State College of Forestry. The total number of bound volumes in the University Library is now two hundred and sixty-one thousand three hundred and seventy-one distributed as follows :

General Library.....	223,976
Seminary Libraries.....	3,880
Law Library.....	30,674
Flower Veterinary Library.....	1,940
Forestry Library.....	901
	261,371

The General Library of the University, the Seminary Libraries, and the Forestry Library are all grouped under one roof in the Library Building, while the Law Library has separate quarters in Boardman Hall and the Flower Veterinary Library in the State Veterinary College.

The University Library Building, the gift of the late Hon. Henry W. Sage, stands at the southwest corner of the quadrangle formed by the principal University buildings. It is built of light grey Ohio sandstone, and its construction is fireproof throughout. It is heated by steam from the central heating station, is provided with a thorough system of artificial ventilation, and fully equipped with incandescent electric lights. The extreme dimensions of the building are one hundred and seventy by one hundred and fifty-three feet, and it has a storage capacity of four hundred and seventy-five thousand octavo volumes. The general outlines of the ground plan are somewhat in the form of a cross, the book-stacks occupying the southern and western arms, the reading room and periodical room, the eastern, the White Historical library, the seminary rooms, and the offices of administration, the northern. The abundantly lighted and handsomely furnished reading room contains ample accommodations for two hundred and twenty readers, and the open book-cases around its walls provide shelf-room for a carefully selected reference library of eight thousand volumes. In the basement, beneath the reading room, is a lecture room, with seating capacity for nine hundred and eighty auditors. In the tower are placed the great bell of the University,

the gift of Mrs. Mary White, the chime of bells, the gift of Mrs. Jennie McGraw Fiske, and the University clock.

The income of an endowment fund of three hundred thousand dollars, the gift of the late Hon. Henry W. Sage, devoted to the purchase of books and periodicals, provides for a large and constant increase of the General Library, the average annual additions being now about twelve thousand volumes. The number of periodicals, transactions, and other serials, historical, literary, scientific and technical, currently received, is over two thousand, and of many of these complete sets are on the shelves.

Among the more important special collections which from time to time have been incorporated in the General Library, may be mentioned: THE ANTHON LIBRARY, of nearly seven thousand volumes, consisting of the collection made by the late Professor Charles Anthon, of Columbia College, in the ancient classical languages and literatures, besides works in history and general literature; THE BOPP LIBRARY, of about twenty-five hundred volumes, relating to the oriental languages and literatures, and comparative philology, being the collection of the late Professor Franz Bopp, of the University of Berlin; THE GOLDWIN SMITH LIBRARY, of thirty-five hundred volumes, comprising chiefly historical works and editions of the English and ancient classics, presented to the University in 1869 by Professor Goldwin Smith, and increased during later years by the continued liberality of the donor; THE PUBLICATIONS of the Patent Office of Great Britain, about three thousand volumes, of great importance to the student in technology and to scientific investigators; THE WHITE ARCHITECTURAL LIBRARY, a collection of over twelve hundred volumes relating to architecture and kindred branches of science, given by ex-President White; THE KELLEY MATHEMATICAL LIBRARY, comprising eighteen hundred volumes and seven hundred tracts, presented by the late Hon. William Kelley, of Rhinebeck; THE CORNELL AGRICULTURAL LIBRARY, bought by the late Hon. Ezra Cornell, chiefly in 1868; THE SPARKS LIBRARY, being the library of Jared Sparks, late president of Harvard University, consisting of upwards of five thousand volumes and four thousand pamphlets, relating chiefly to the history of America; THE MAY COLLECTION, relating to the history of slavery, and anti-slavery, the nucleus of which was formed by the gift of the library of the late Rev. Samuel J. May, of Syracuse; THE SCHUYLER COLLECTION of folk-lore, Russian history and literature, presented by the late Hon. Eugene Schuyler in 1884; THE RHÆTO-ROMANIC COLLECTION, containing about one thousand volumes, presented by Willard Fiske in 1891; THE PRESIDENT WHITE HISTORICAL LIBRARY, of about twenty thousand volumes (including

bound collections of pamphlets) and some three thousand unbound pamphlets, the gift of ex-president White, received in 1891, especially rich in the primary sources of history, and containing notable collections on the period of the Reformation, on the English and French Revolutions, on the American Civil War, and on the history of superstition; THE ZARNCKE LIBRARY, containing about thirteen thousand volumes and pamphlets, especially rich in Germanic philology and literature, including large collections on Lessing, Goethe, and Christian Reuter, purchased and presented in 1893 by William H. Sage; THE DANTE COLLECTION, containing at present over six thousand volumes, presented in 1893-9 by Willard Fiske; THE HERBERT H. SMITH COLLECTION of books relating to South America, purchased in 1896; a valuable collection of books on French and Italian society in the 16th and 17th centuries, presented by Professor T. F. Crane in 1896; THE FLOWER VETERINARY LIBRARY, the gift of ex-Governor Flower to Cornell University, for the use of the State Veterinary College, in 1897; THE EISENLOHR LIBRARY, containing about one thousand volumes on Egyptology and Assyriology, purchased and presented in 1902 by A. Abraham.

The library is primarily a reference library, but officers of the University have the privilege of taking books from the library for home use, and this privilege, to a limited extent, is granted to graduate students, candidates for advanced degrees. Books may also be taken for home use by students after twelve o'clock on days preceding holidays, when the library is closed, to be returned at the re-opening of the library. The library is open on week days, during term time, from 8 A. M. till 11 P. M., except on Saturdays, when it is closed at 5 P. M. In vacation it is open on week days from 9 A. M. till 5 P. M.

All students of the University have free access to the shelves of the Reference Library of eight thousand volumes in the main reading room, but apply at the delivery desk for other works they may desire. This Reference Library comprises encyclopædias, dictionaries, and standard works in all departments of study, together with books designated by professors for collateral reading in the various courses of instruction. In the same room, and accessible to all readers, is the card catalogue of the general library, including also the books in the seminary libraries. The catalogue is one of authors and subjects, arranged under one alphabet on the dictionary plan. Cards of admission to the shelves in the stack-rooms, and to the White Historical Library, will be issued by the librarian to graduate students for purposes of consultation and research, and also to undergraduate students, engaged in advanced work, upon the recommendation of the professor in charge of the work.

Since its incorporation with the general library in 1891, the valuable historical collections of the **PRESIDENT WHITE LIBRARY** are displayed in a spacious room, in the north wing of the Library Building communicating directly with the historical seminary rooms. The White Library is open only to officers of the University, members of the seminaries, and others holding cards of admission. The **SEMINARY ROOMS** in the Library Building contain the seminary libraries proper, supplemented by collections of works and periodicals from the general library deposited in these rooms for use in Seminary work. Books so deposited in the seminary rooms are available for the use of students in the general reading room, except when in actual use in the seminaries. The books forming the seminary libraries proper are subject to such regulations as may be made for each seminary room by the professor in charge, to whom application for admission to the room must be made. In several of the scientific and technical departments similar collections of reference books have been formed, access to which may be obtained upon application to the department concerned.

The **Law Library** occupies the third floor of Boardman Hall. It includes the well known library of the late Nathaniel C. Moak, which was presented in 1893, by Mrs. A. M. Boardman and Mrs. Ellen D. Williams, as a memorial to Judge Douglass Boardman, the first Dean of the College of Law. In reports of the Federal Courts reports of the several American state jurisdictions, and in English, Scotch, Irish, and Canadian reports, the law library is practically complete to date. The other English-speaking countries are largely represented. The library also possesses a full complement of text-books and statutes, and complete sets of all the leading law periodicals in English, thus offering facilities for scholarly research second to none in the country.

BIBLIOGRAPHY.

The following courses are offered for 1902-03 :

1. **Introductory Course to the Use of the Library**, including classification and arrangement of materials, principles of cataloguing, making bibliographies and preparation of materials for printing. First half-year. M., 4 p. m. Open to all students. Assistant Librarian AUSTEN.

2. **General Bibliography**. The materials and form of books in ancient times ; books in the middle ages, block books, early printed books, illustrated by examples of manuscripts and incunabula ; book-illustration, book-bindings ; form-notation ; systems of classification and cataloguing ; general bibliographical aids. Second half-year. Lectures. T., 12. Mr. HARRIS.

THE SAGE CHAPEL AND BARNES HALL.

By the terms of the charter of the University persons of any religious denomination or of no religious denomination are equally eligible to all offices and appointments; but it is expressly ordered that "at no time shall a majority of the Board of Trustees be of any one religious sect or of no religious sect." Religious services, provided for by the Dean Sage Preachership Endowment, are conducted in Sage Chapel by eminent clergymen selected in the spirit of the charter, from the various religious denominations. These services are supplemented by the Christian Association, a voluntary organization of students and professors formed for their own religious culture, and the promotion of Christian living in the University. It has a permanent secretary and a carefully selected biblical library. Bible study courses are carried on throughout the year. A committee of the Association, in attendance at Barnes Hall during the first week of each year, assists new students in the matter of rooms, board, examination schedule, etc.

The Sage Chapel was given to the University in 1873 by the Hon. Henry W. Sage. In 1884 the University and estate of Jennie McGraw Fiske joined in erecting, upon the north of the original chapel, the Memorial Chapel, in memory of Ezra Cornell, John McGraw, and Jennie McGraw-Fiske, whose remains there repose. In 1898 the University reconstructed the auditorium, or chapel proper, doubling the seating capacity, previously four hundred, and added the Memorial Apse, in memory of the original donor, the late Henry W. Sage, and as a repository of his remains and those of his wife, Susan Linn Sage, at whose suggestion the original gift was made.

The Sage Chapel proper, or auditorium, is in the Gothic style, built of red brick, with elaborately carved stone trimmings. There are two north and two south gables, each containing a rose window of ten feet diameter, with stone tracery. In the west gable, which, with half the nave, is all remaining of the old chapel, is a wheel window. The arched window formerly in the east end of the nave is now in the Memorial Apse. The place of the old tower, south transept, and east half of the nave is now included in two parallel transepts, covering a space 64 x 66 feet.

The Memorial Chapel, built in the Gothic style of the second or decorated period has exterior walls of red brick with stone trimmings,

and interior walls of Ohio stone and yellow brick. It contains rich memorial windows by Clayton and Bell of London, designed to commemorate the connection of Mr. Cornell, Mr. McGraw, and Mrs. Jennie McGraw-Fiske with the University and to associate their names with other great benefactors of education in older times. Directly beneath the north window is a recumbent figure of Ezra Cornell, in white marble, of heroic size, by William W. Story, of Rome; near the entrance a smaller recumbent figure, that of Mrs. Andrew D. White, also in white marble, by Ezekiel, of Rome.

The Memorial Apse is a semi-octagon, opening into the auditorium by a massive cut stone arch. The interior walls from window sills upward are of stone. The oaken ribs of the ceiling are carried on stone columns with carved capitals, supported by corbels. Below the line of the windows the wall of the Apse is covered with a scheme of Venetian mosaic, the work of Messrs. J. & R. Lamb, of New York, which forms the most extensive scheme of figure mosaic yet attempted in this country. Processions of the sciences flanked by figures of young manhood and of beauty, and of the arts flanked by young womanhood and truth, lead up through beauty and truth respectively to a cowed, seated figure of philosophy in the central space, who lifts his eyes from the completed scroll of human wisdom to the mysteries of the Cross, symbolized on the ceiling, where it is surrounded by angels and archangels. The heroic figures of the ceiling are carried against a dark blue background. In the lower portion, the figures, which are all life-size, stand before a green hedge, with their faces displayed against a sky of gold.

Barnes Hall, the gift of the late Alfred S. Barnes, Esq., of New York, is the home of the Christian Association. This building is one hundred and twenty feet by eighty feet in dimensions, and three stories in height. The material is brick, with trimmings of Ohio stone, brown stone, and granite. On the north, the main entrance is marked by a graceful tower rising to a height of one hundred feet. The building contains a secretary's room, assembly-room, library, reading room, and all other needed accommodations for the work of the Association, in addition to a spacious auditorium, which occupies a large part of the second floor. Besides the auditorium, there is a smaller class-room on this floor, the two being separated by a screen which in case of need is easily removed, thus throwing the entire second floor into one hall, and furnishing seating room for one thousand persons. The rooms are open daily from 8 A. M. to 8 P. M. to all students.

THE CORNELL INFIRMARY.

In 1897 the mansion of the late Hon. Henry W. Sage was presented to the University to be known and used as the Cornell Infirmary, by his sons, Dean Sage and William H. Sage, who in the following year refitted the building for use and endowed it with \$100,000 that it might at no time be an item of expense to the University. These facts are duly recorded in the tablet placed in the hall of the Infirmary under a portrait of Mr. Sage by Eastman Johnson, the inscription reading "This house built by Henry Williams Sage and occupied by him for seventeen years was at his death in 1897 endowed and given to Cornell University for a students' infirmary, by his sons, Dean and William Henry Sage."

This building is at all times available as a home for students suffering from any except contagious diseases. Room, nursing, and food as prescribed are all furnished to such students in the general ward for \$1.00 per day, with an extra price for special rooms and special nursing. During the three years the Infirmary has been in operation several hundreds of students have been cared for, suffering from troubles varying from a severe cold to the last stages of Bright's disease. In the course of the year 1900-1901 over 300 students were admitted.

The building is a structure of Medina brownstone, 96 x 88 feet, including verandas and porches, and three stories in height besides basement and a high attic. Through the first floor from south to north runs a wide hall having on the right a sitting room for young women, dining room, pantry, and kitchen, and on the left the library, used as a sitting room for young men, the Matron's office, bathroom, lavatory, telephone closet, and Matron's room. The height of these rooms is 12½ feet in the clear. On the second floor are six large rooms for the sick, two large bath rooms, a small nurses' kitchen, linen closets, a large room for surgical work, with an instrument room containing sink, cold and hot water, and a slop closet not connected with the bath rooms. The rooms on this floor are eleven feet high in the clear. The third floor contains the smoking room, three large rooms for patients, two nurses' rooms, two servants' rooms, a bath room, nurses' kitchen, and slop closet. These rooms are 10½ feet in the clear. There is a balcony opening from one third-story sick-room, upon which a bed can be rolled. The basement contains a laundry, servants' bath room, and the heating apparatus. The house is supplied throughout with gas and electric lighting, and heated by a system of hot water.

SUMMER SESSION.

JULY 6TH TO AUGUST 15TH, 1903.

FACULTY.

- JACOB GOULD SCHURMAN, A.M., D.Sc., LL.D., President.
- CHARLES DE GARMO, Ph.D., Dean of the Faculty, Professor of the Science and Art of Education.
- JOHN LEWIS MORRIS, A.M., B.E., Sibley Professor of Practical Mechanics and Machine Construction.
- HIRAM CORSON, A.M., LL.D., Professor of English Literature.
- WATERMAN THOMAS HEWETT, A.B., Ph.D., Professor of the German Language and Literature.
- JAMES MORGAN HART, A.M., J.U.D., L.H.D., Professor of Rhetoric and English Philology.
- LUCIEN AUGUSTUS WAIT, A.B., Professor of Mathematics.
- GEORGE WILLIAM JONES, A.M., Professor of Mathematics.
- JAMES EDWIN CREIGHTON, A.B., Ph.D., Sage Professor of Logic and Metaphysics.
- EDWARD BRADFORD TITCHENER, M.A., Ph.D., Sage Professor of Psychology.
- GEORGE FRANCIS ATKINSON, Ph.B., Professor of Botany.
- RALPH STOCKMAN TARR, B.S., Professor of Dynamic Geology and Physical Geography.
- GEORGE PRENTICE BRISTOL, A.M., Professor of Greek.
- PIERRE AUGUSTINE FISH, D.Sc., D.V.M., Professor of Physiology.
- ALBERT PERRY BRIGHAM, A.M., (Professor of Geology and Natural History, Colgate University, Hamilton, N. Y.) Dynamic Geology and the Geography of the United States.
- CHARLES ALEXANDER McMURRY, Ph.D., (Director of Practice Department, Northern Illinois Normal School, DeKalb, Ill.), Home and Grammar Grade Geography.
- JOHN CAREW ROLFE, Ph.D., (Professor of Latin, University of Pennsylvania,) Latin.
- Professor of History.
- GEORGE SYLVANUS MOLER, A.B., B.M., E., Assistant Professor of Physics.

HENRY NEELY OGDEN, C.E., Assistant Professor of Civil Engineering.

CHARLES LOVE DURHAM, M.A., Ph.D., Assistant Professor of Latin.

———. ———., Assistant Professor of German.

ISAAC MADISON BENTLEY, B.S., Ph.D., Assistant Professor of Psychology.

HENRY AUGUSTUS SILL, Ph.D., Assistant Professor of History.

CLAUDE WILLIAM LE ROY FILKINS, M.C.E., (Professor of Civil Engineering, Colorado School of Mines, Golden, Col.), Mechanics.

CHARLES NELSON COLE, Ph.D., (Professor of Latin, Oberlin College, Oberlin, O.), Latin.

PHILIP EMERSON, (Principal of Cobbett School, Lynn, Mass.), Commercial Geography.

GUY MONTROSE WHIPPLE, Ph.D., Lecturer in the Science and Art of Education.

HIRAM SAMUEL GUTSELL, B.P., A.M., Instructor in Drawing and Industrial Art.

HOMER JAMES HOTCHKISS, A.M., M.M.E., Instructor in Physics.

JOHN SIMPSON REID, Instructor in Mechanical Drawing and Designing.

JOHN SANDFORD SHEARER, Ph.D., Instructor in Physics.

JOHN IRWIN HUTCHINSON, Ph.D., Instructor in Mathematics.

BLIN SILL CUSHMAN, B.S., Instructor in Chemistry.

THEODORE WHITTELYSEY, A.B., Ph.D., Instructor in Chemistry.

OSKAR AUGUSTUS JOHANNSEN, B.S., A.M., Instructor in Civil Engineering.

OTHON GOEPP GUERLAC, Licencié ès lettres, Instructor in Romance Languages.

BENTON SULLIVAN MONROE, A.M., Ph.D., Instructor in English.

ROBERT CLARKSON BROOKS, A.B., Instructor in Political Economy.

HENRY ROSE JESSEL, B.S., Ph.D., Instructor in Chemistry.

ERNEST BLAKER, Ph.D., Instructor in Physics.

WILLIAM BENJAMIN FITE, Ph.D., Instructor in Mathematics.

HENRY FREEMAN STECKER, Ph.D., Instructor in Mathematics.

HUGH DANIEL REED, B.S., Instructor in Vertebrate Zoology.

FRANK CARNEY, A.B., (Assistant Principal of High School, Ithaca, N. Y.), Physical Geography and Geology.

RAY HUGHES WHITBECK, A.B., (Supervisor in New Jersey State Normal School, Trenton, N. J.), Physical Geography and Geography Methods.

JAMES WISEMAN, Foreman of the Machine Shop.

WILLIAM HENRY WOOD, Foreman of the Wood Shop.

WILLIAM FREDERICK HEAD, Foreman in Forging.

JAMES EUGENE VANDERHOEF, Foreman of Foundry.

MARGARET CLAY FERGUSON, Ph.D., (Instructor in Botany in Wellesley College), Botany.

MARGARET EVERITT SCHALLENBERGER, Ph.D., Assistant in Psychology.

JOHN WALLACE BAIRD, Ph.D., Assistant in Psychology.

CALVIN HENRY KAUFFMAN, A.B., Assistant in Botany.

WESLEY BRADFIELD, A.B., Assistant in Botany.

GEORGE CHARLTON MATSON, B.S., Assistant in Geology and Physical Geography.

FRANK SMITH MILLS, A.B., Assistant in Physical Geography and Geology.

OSCAR PERCY JOHNSTON, Ph.B., Assistant in Physiology.

DAVID FLETCHER HOY, B.S., M.S., Registrar.

GENERAL STATEMENT

The principal object of the Summer Session is to furnish instruction to teachers in high schools and academies; but provision is at the same time made for the instruction of college professors, university students, and others who are qualified to join the classes. No entrance examinations are required for the Summer Session.

Instruction is offered in all subjects which are embraced in the high school curriculum, including manual training. Some courses suitable for graduate students are also provided.

Applications for admission to the graduate department of the University, and to candidacy for advanced degrees, are to be addressed primarily to the Dean of the University Faculty. Full details should be forwarded of the candidate's previous course of study, the degree desired, and the special preparation already had in the major and minor subjects to be pursued.

The applicant would naturally communicate also with the professors in whose departments he intends to study, as they must ultimately approve of his application.

Applicants who are duly admitted to candidacy for advanced degrees under the regular rules of the University Faculty, may receive

such credit in time for graduate work done in the Summer Session, as may be determined by the appropriate committees of the University Faculty.

This credit in time is to cover only the actual period of residence and attendance, and is not to exceed one University year's allowance for the total amount of work so accomplished during various sessions.

CALENDAR—1903.

July 6—Registration.

July 7—Instruction begins.

August 15—Term ends.

TUITION.

The single tuition fee for the entire Summer Session, whether one course or more be taken, is \$25, and must be paid at the office of the Treasurer within ten days after registration day. No student is admitted without the payment of this fee.

ADDITIONAL FEES FOR LABORATORY WORK.

In chemistry, a fee is charged for material actually consumed, and the student must make such deposit with the Treasurer as the Instructor may prescribe.

In physics, botany, and physiology, the fee is at the rate of \$1 for every five hours per week per term (or part thereof) of work in the laboratory; the entire fee to be paid to the Treasurer at the beginning of the term.

In shopwork the fee is \$10 to be paid to the Treasurer at the beginning of the term.

BOARD AND ROOMS.

The cost of living in Ithaca, including board, room and lights, varies from \$5 to \$8 per week. Accommodations may be secured as follows:

1. At Sage College; cost \$4 per week for table board, and from \$1 to \$2.50 per week for room, according to location. Ladies, also gentlemen accompanied by their wives, may find accommodation here, and a few rooms are reserved for single gentlemen. Every application for a room to be reserved must be accompanied by a deposit of \$5, otherwise the application is not registered. The amount of this deposit is deducted from the rent if the room assigned be occupied by the applicant; it is refunded if the applicant give formal notice to the manager on or before June 15th that it is desired to withdraw the application altogether.

Those desiring to secure rooms at Sage College or the Cottage should address the Manager, Mr. George Franklin Foote. (See page 57.)

2. At private houses in the city ; costs \$5 to \$8 per week.
3. Accommodations along the shores of Cayuga Lake may also be secured either by boarding at the hotel at Glenwood or by renting a furnished cottage for the summer.

. CREDIT FOR WORK.

Regularly matriculated students of the University may receive credit to the extent of seven university hours for work done during the Summer Session.

Students of the Summer Session not matriculated in the University may receive certificates of attendance and satisfactory work done.

SPECIAL RAILROAD RATES.

A special railroad rate on "certificate" plan was granted students for the Summer Sessions of 1901 and 1902. An application will be made at the proper time for a similar reduction for 1903. Apply to Registrar, Cornell University, for fuller information after May 15, 1903.

COURSES OF INSTRUCTION.

GREEK.

A. The Greek Language.

The following topics are treated : The physiological basis of speech. The elements of phonetics. The analysis and synthesis of sounds in English and in Greek. The pronunciation of ancient Greek in theory and in practice. The problems of accent. The development of the Greek alphabets, as means of expressing sounds. Selected portions of the grammar dealing with inflexion and word-formation. The relation of Greek to Latin and to English. The Greek elements in English.

This course is intended to give teachers and students of Greek a firmer grasp of the language as *speech*. Further as it includes the study of the nature of language in general, and of the relations between Greek, Latin and English, it will be of value for teachers of any one of these. The lectures are accompanied by practical exercises in the study of anatomical preparations for the physiology of speech, of selected inscriptions showing the development of the alphabets, and of groups of words to illustrate the principles of etymology. Daily ex. S., 8, *White*, 3 *B*. Professor BRISTOL.

B. Homer's Iliad.

Conferences and discussions with teachers on the work of the High School in this field. Consideration will be given in particular to these points: the language, the metre, the principles of interpretation, the aim and method of translating, the English translations from Chapman to the present time. The most helpful editions of the poems and other auxiliary works will be examined, with special attention to recent school editions. S., 8-10, *White 3 A*. Professor BRISTOL.

C. Lyric Poetry. Reading of selections from Hiller-Crusius's *Anthologia Lyrica*. Discussion of literary questions, and of the aspects of Greek social life thus presented. M., T., Th., F., 9. *White 3 B*. Professor BRISTOL.

Prospective students are advised to procure a copy of this text before coming to Ithaca. It is published by Teubner, Leipzig, and may be had of G. E. Stechert, 9 E. 16th St., New York, or of any importer of German books.

LATIN.

Office of the Department, Morrill 14, daily, 9-11 a. m.

A. Grammar Course. (a) *Pronunciation.* Evidences in support of the Roman method. Sources of knowledge. Testimony of the Roman grammarians. Evidence from philological investigation.

(b) *Hidden Quantity.* Should we pronounce *fĕstus* or *fēstus*? *mĭssus* or *mīssus*? *cĭnctus* or *cīnctus*, etc.? Methods of determining the quantity of hidden vowels.

(c) *Orthography.* What should be the standard in spelling? Should we write *volnus* or *vulnus*, *aequos*, *aequus*, or *aecus*; *optumus* or *optimus*; *adsequor* or *assequor*; *inrideo* or *irrideo*, etc.?

(d) *Syntax of the Subjunctive.* The subjunctive in independent sentences. Origin of the different varieties of the subjunctive appearing in subordinate clauses. Development of the thesis that all subordinate uses of the subjunctive are an outgrowth of originally independent sentences.

(e) *Syntax of the Cases.* Fundamental force of the several cases. Explanation of the different uses that have developed from each of them.

(f) *Discussion of the purposes and methods of Preparatory Study in Latin*, as follows: Why is Latin of value to the secondary student? The elementary work. What author should be read first? Reading at sight. Unseen translation. Theory of Latin versification. What was ictus? How to read poetry. Latin composition. How to teach it.

This course will be conducted mainly by lectures. Daily ex. S., 9. *Morrill 3*. Professor ROLFE.

B. Reading Course. Translation of select Odes, Epodes, Satires, and Epistles of Horace, with attention to Horace's lyric metres. Lectures on Horace and his place in literature. Daily ex. S., 10. *Morrill 3*. Professor ROLFE.

C. Virgil. This course is intended primarily for those teachers in preparatory and high schools that desire an accurate knowledge of the various subjects that pertain to Virgil in general and the teaching of the Aeneid in particular. A course of introductory lectures will be given, and the extensive Virgilian collection in the University Library will be examined and discussed in the lecture room. Portions of the Aeneid will be studied carefully with reference to all the points that should be emphasized in elementary instruction. In connection with this, the various English text books on Virgil will be examined and a critical discussion of their notes and commentaries will be made. Daily ex. S., 11. *Morrill 3*. Assistant Professor DURHAM.

D. Cicero. The syntax of the case and mood constructions in the four orations against Catiline. Introductory lectures on the origin and the development of the constructions, and detailed discussion of the material in the Catilinarian orations. Daily ex. S., 12. *Morrill 3*. Assistant Professor DURHAM.

E. Roman Antiquities. (a) Topography and Archaeological Remains of the city of Rome. (b) Private Antiquities, including a systematic consideration of the constitution of the Roman family, status of women, marriage, children, education, slavery, the Roman house and its furniture, food, dress, baths, games and amusements, books, trade, travel, religion, death, burial, etc. Lectures, copiously illustrated by lantern views, photographs, and material in the Museum of Casts. (c) The Political and Legal Antiquities of the Romans. Lectures. Daily ex. S., 8. *Morrill 3*. Professor COLE.

GERMAN.

A. Course for Teachers. Introduction to German philology and historical grammar. This course will be based upon Behagel's *Die deutsche Sprache*, second edition (1902), and *Geschichte der deutschen Sprache* in Paul's *Grundriss*, second edition (1898).

Recent theories and methods of instruction in the modern languages will be discussed.

The teacher's equipment will be considered, including representative works in linguistic study, histories of literature, biographies, dic-

tionaries, grammars, annotated texts and maps. Moot points in pronunciation and syntax will be explained. T., Th., 8. *Morrill 13*. Professor ———.

B. **Reading, interpretation and lectures upon the classical drama of Goethe, Schiller and Lessing.** M., W., F., 8. *Morrill 13*. Professor ———.

C. **The rapid reading with comment of the advanced requirements for admission in German.** Freytag's *Verlorene Handschrift*, Lessing's *Minna von Barnhelm* and Uhland's *Poems*. Sight translation will be practiced on certain days of the week, and there will be special credit for reading done outside the class upon which examination is passed. Daily ex. S., 9. *Morrill 13*. Professor ———.

D. **Lectures in German upon German literature, art and life.** This course will require special reading on the part of the students, with reports and examinations upon assigned topics. Daily ex. S., 10. *Morrill 5*. Professor ———.

E. **Practical Exercises in German Conversation and Composition.** The course will be conducted entirely in German, in order to familiarize the student with the spoken language. a. Advanced course. M., W., F., 11. b. Elementary course. T., Th., S., 11. *Morrill 5*. Professor ———.

ROMANCE LANGUAGES.

A. **French conversation and composition, conducted in French.** The course which is intended for students having had at least two years of French, consists of daily drill work in conversation and composition, of frequent themes, short talks by the students on French literature, and a rapid course in French history. M., T., W., Th., F., 9. *White 2*. Mr. GUERLAC.

B. **The social, political, and literary life of France in the Nineteenth Century.** Lectures in French. T., Th., 11. *White 2*. Mr. GUERLAC.

C. **Readings from modern French drama.** A rapid reading course of French comedies with comments and explanations in French. M., W., F., 11. *White 2*. Mr. GUERLAC.

ENGLISH LITERATURE.

A. **English Literature.** Lectures, with readings, on English Poetry of the 19th century. M., W., F., 9. *Barnes Hall*. Professor CORSON.

B. **English Literature.** Lectures, with readings, on Shakespeare and Milton. T., Th., S., 9. *Barnes Hall*. Professor CORSON.

ENGLISH COMPOSITION.

A. English Composition. Daily, ex. S., 8. *Barnes Hall.* Professor HART and Instructor MONROE.

This course, in the main an abridgement of the regular No. 9, Teachers' Rhetoric, is designed to meet the needs of high-school teachers of English who wish to accomplish the best results in the school room. Certain of the books prescribed for the entrance examination will be studied with care, partly for their significance in culture, chiefly for their availability as models or material for school papers. The general principles of Narration, Description, and Exposition, also of Sentence-Structure and Paragraphing, will be taught by means of daily themes; Composition-Outlining, by means of semi-weekly papers.

Hart's *Essentials of Prose Composition* will be in constant use; intending members are urgently advised, therefore, to acquaint themselves with the general features of the book before the opening of the session.

This course is not open to undergraduates.

B. Conferences. In addition to the regular exercises at 8 o'clock, there will be personal conferences, at hours to be announced at the opening of the session. In these private conferences the professor or instructor will criticize the papers submitted to him and make suggestions for future study.

PHILOSOPHY.

A. The History of Philosophy in the Eighteenth and Nineteenth Centuries. Daily 8. *White 9.* Professor CREIGHTON.

In this course it is proposed to deal topically rather than biographically with the development of philosophical ideas during the last two centuries. The principles and conceptions underlying the rationalistic thought of the 18th century will be analyzed and explained, and their practical consequences traced in the resulting theories of knowledge and of morality, and in the fields of politics and literature. The growth and development of modern historical and evolutionary modes of thought will then occupy attention, and the course will conclude with an outline of the standpoint and attitude of philosophy at the present day.

B. Logic. Daily 9. *White 9.* Professor CREIGHTON.

This class will cover the same ground as the elementary course in logic that is given during the regular session of the University. It will include the more essential and practical parts of Deductive Logic, the logic of the Inductive Methods, and an outline of the modern theories of the nature of Judgment and the Evolution of Thought.

PSYCHOLOGY.

A. Elementary Course in Psychology. 1. Lectures and exercises. M., W., F., 9. Text-book: Titchener's *Primer of Psychology*. Professor TITCHENER and Dr. SCHALLENBERGER.

If only the lectures and examination are taken, this course counts as 3 hours; if the prescribed exercises are performed, it counts as 5 hours.

2. Laboratory Practice. M., W., F., 2-5, with prescribed work on literature and record books. Text-book: Titchener's *Experimental Psychology*. Assistant Professor BENTLEY, Dr. BAIRD, and Dr. SCHALLENBERGER. This course counts as 5 hours.

B. Advanced Course in Psychology. 1. The psychology of the simpler mental complexes. Lectures and prescribed reading. T., Th., 9. Assistant Professor BENTLEY and Dr. BAIRD. This course counts as 3 hours.

2. Experimental problems: advanced laboratory work. Hours to be arranged. Professor TITCHENER and Dr. BAIRD.

All lecture courses will be given in the Laboratory Lecture Room, Morrill Hall. Advanced students who intend to take Course B 2, and those who desire to combine Courses A and B, are requested to correspond as early as possible with Professor Titchener.

SCIENCE AND ART OF EDUCATION.

A. The Philosophy of Education. Lectures, discussions, and readings. Daily ex. S., 10. *White 10*. Professor DEGARMO.

This course will present the general theory of education, the emphasis being placed upon the social side. It will discuss the following topics: The theory of interest as applied to education, the doctrine of formal discipline, the high school curriculum, general and special didactics, the management and training of the young.

B. History of Education. Lectures, discussions, and prescribed reading. Daily ex. Sat., 11. *White 10*. Professor DEGARMO.

This course will embrace the following topics: 1. The history of humanism from the Renaissance to the present. 2. Individualism and Democracy in Education, beginning with Rousseau. 3. System in Education, beginning with Herbart.

C. Educational Aspects of Psychology. Two lectures and three laboratory periods weekly. Lectures, M., W., 11. *White 9*; laboratory, T., Th., F., 11-1. *White 7B*. Dr. WHIPPLE.

Such topics as fatigue, attention and distraction, memory, apperception and ideational type will be considered in the lectures. The

laboratory work will be partially directed upon the same topics, but special attention will also be paid to mental tests,—the manner of conducting them and their value. Students may omit the laboratory and take only the lectures. It is recommended that James' *Psychology, Briefer Course*, Stout's *Manual of Psychology*, or Titchener's *Primer of Psychology* be read before the beginning of the work, and that students should have taken, or be taking, Psychology A 1 and A 2.

D. Mental Development. Lectures and prescribed reading. Daily ex. S., 8. *White 9*. Dr. WHIPPLE.

A survey of the more important periods in the development of the individual, with special emphasis upon childhood and adolescence. A general knowledge of psychology is advisable.

HISTORY.

A. American History. (To be announced in the special circular.)

B. American History. (To be announced in the special circular.)

C. Roman History from Tiberius Gracchus to Augustus. Course for teachers. Discussions of methods, of sources, and of literature, with practical exercises. Daily ex. S., 9, *Morrill 11*. Assistant Professor SILL.

D. Greek Historiography. Lectures on the ancient Greek historians and modern writers in the field of Greek history. Daily ex. S., 10, *Morrill 11*. Assistant Professor SILL.

CIVICS, POLITICAL AND SOCIAL SCIENCE.

A. Economic History of the United States. Beginning with a survey of economic conditions in continental Europe and England during the fifteenth and sixteenth centuries, it will be the aim of this course to discuss in a series of lectures the industrial development of the American colonies and the United States, from their settlement to the resumption of specie payments in 1879. For those desiring full credit, collateral reading will be assigned on the more important topics discussed in the lectures, and also on the period between 1879 and the present, which is hardly ripe for historical treatment. Special attention will be given to the relation between the economic and political aspects of the history of the United States. Five hours a week, daily except Saturday, 8, *Morrill 12*. Mr. BROOKS.

B. Political Institutions. A study of certain typical governmental arrangements in Germany, France, Switzerland, and England, with discussions as to their applicability in whole or in part to American conditions. From this point of view, the three class election sys-

tem of Prussia, the referendum and initiative in Switzerland, centralization in France, the cabinet system in England, etc., will be presented. Special attention will be given to questions arising in the teaching of civil government and constitutional history in secondary schools, and to the value of the comparative method in dealing with these subjects. Collateral reading will be assigned for those desiring full credit for the course. Five hours a week, daily except Saturday, 9, *Morrill 12*. Mr. BROOKS.

MATHEMATICS.

A. **Elementary and Advanced Algebra.** An advanced course on the elementary principles of algebra. Daily ex. Sat., 8. *White 21*. Professor JONES.

B. **Plane and Solid Geometry.** A review in which about one-third of the time is devoted to plane geometry and the rest to solid geometry. Daily ex. S., 10. *White 17*. Dr. FITE.

C. **Higher Algebra.** An advanced course including the theory of imaginaries and the theory of equations. Lectures. Daily ex. Sat., 10. *White 21*. Professor JONES.

D. **Trigonometry.** An elementary course covering parts of Jones' Drill book in Trigonometry. Daily ex. S., 9. *White 21*. Professor JONES.

E. **Analytic Geometry.** An elementary course covering parts of Tanner and Allen's Analytic Geometry. Daily ex. Sat., 8. *White 22*. Professor WAIT.

F. **Analytic Geometry.** An advanced course based on Salmon's Conic Sections. M., W., F., 10. *White 22*. Professor WAIT.

G. **Differential Calculus.** An elementary course covering parts of McMahon and Snyder's Differential Calculus. Daily ex. Sat., 9. *White 22*. Professor WAIT.

H. **Integral Calculus.** An elementary course covering parts of Murray's Integral Calculus. Two sections. Daily ex. Sat., 8, 11. *White 17*. Dr. HUTCHINSON.

I. **Differential Calculus.** An advanced course, based on Todhunter's and Williamson's Differential Calculus. T., Th., 10. *White 22*. Professor WAIT.

J. **Integral Calculus.** Lectures, accompanied by mimeographed notes. A short drill on the integration of various forms will be followed by a discussion of the conditions and criteria for integrability of any given function. Definite integrals, and methods for their evaluation. The gamma function. Curvilinear and multiple integrals. Daily ex. Sat., 9. *White 17*. Dr. HUTCHINSON.

K. Differential Equations. An elementary course covering parts of Murray's Differential Equations. Daily ex. Sat., 8. *White 18A*. Dr. STECKER.

L. Calculus of Variations. Consideration of the general theory with applications to classic problems. M., W., F., 9, *White 18A*. Dr. STECKER.

M. Theory of Functions of a Complex Variable. The elements of the theories of Cauchy, Riemann and Weierstrass. T., Th., S., 9. *White 18A*. Dr. STECKER.

N. Introduction to the Theory of Groups. T., Th., S., 11. *White 18A*. Dr. FITE.

PHYSICS.

A. Lectures in General Physics. Five lectures per week. A course of lectures and demonstrations in General Physics corresponding to those given in courses 1 and 2 during the University year. It may be taken by regular University students with corresponding hours of credit. (Page 150.) Suitable also for those with no previous work in Physics. Subjects for 1903 Mechanics, Heat and Magnetism. Daily ex. S., 12. Dr. SHEARER.

B. Laboratory Work in General Physics. The laboratory for this course alone is equipped with apparatus for nearly one hundred different experiments. There are enough experiments to choose from so that the greater portion of the work may be taken in any particular division of the subject, if desired, since *individual* instruction is given.

Regular University students who desire credit may take, as far as time permits, the same work given in course 2b (page 150) during the university year, and receive corresponding credit if course 2a (page 150), or its equivalent, has been passed.

Summer School students not desiring credit on University courses may arrange for work to meet their individual needs. Daily ex. Sat., 9-12. Mr. HOTCHKISS.

BB. Lectures and Class-room Discussions. Lectures will be given relating to laboratory methods and apparatus, determination and use of data, graphic methods, interpretation of results, etc. Opportunity will be given for the discussion of topics of interest to teachers and students of physics. The course is primarily for those taking course B, but is open to others. T., Th., 12. Mr. HOTCHKISS.

C. Physical Laboratory Work. This course is the regular laboratory work required of engineering students during the junior year, but may be modified to meet the requirements of teachers and others

who have an equivalent of B. [See page 151, course 3.] It presupposes a knowledge of elementary physics and is entirely individual. The course may be taken by regular University students with hours of credit corresponding to the same work during the regular year. Daily ex. S., 9-12. Dr. BLAKER.

D. **Advanced Laboratory in General Physics.** Intended for those who have completed routine laboratory courses and desire special work. May be taken as preparation for research work by students able to work largely independent of direct instruction. Students contemplating this course may secure further details by correspondence. Daily ex. Sat., 8-12. Dr. SHEARER.

E. **Advanced Laboratory Work in Electrical Measurements.** Tests and calibration of electrical instruments. Experimental study of dynamo machines, including tests of efficiency. Alternating and polyphase currents. Photometric and electrical tests of electric lamps. (Equivalent to work in course 4, Register, page 151.) Daily ex. S., 8-12. One University hour of credit is given for each 30 hours of completed laboratory work. Students intending to secure University credit for this work must complete course C (regular course 3) before starting this course. Others must satisfy the department that they are competent to undertake work of this nature. Assistant Professor MOLER.

CHEMISTRY.

A. **General Inorganic Chemistry.** Lectures, recitations and laboratory work. The lectures, which are fully illustrated by experiments and by specimens from the chemical museum, are devoted to a discussion of the facts and theories of chemistry, and in connection therewith careful attention is given to the writing of chemical equations, and the solving of chemical problems. The laboratory work furnishes an opportunity for gaining a practical knowledge of the chemical compounds and reactions discussed in the lectures. Daily ex. S., 8-12. Dr. JESSEL.

C. **Qualitative Analysis.** Elementary course for those who have had an equivalent of course A. A study in the laboratory and the class-room of the methods of separation and detection of the principal bases and mineral acids, together with the reactions involved, followed by the analysis of mixed substances, the composition of which is unknown to the student. Recitations, M., W., F., 11. Laboratory, daily ex. S., 1.30 to 4.30. Dr. WHITTELYSEY.

D. **Qualitative Analysis.** A more advanced course for those who have already had an equivalent of course C. This course will include :

1. Experimental lectures on the analytical reactions that involve oxidation and reduction, with a discussion of the expression of such reactions in the form of equations.

2. A study in the laboratory and the class-room of the methods of detection of each of the important acids in the presence of the others, together with the reactions involved, followed by the analysis of more complex mixtures than are included in course C.

3. A comparative study in the laboratory of different methods of separation of the bases, etc. 1 and 2 may be taken together if desired. 3 is open only to those who have had the equivalent of 2. Lectures and recitations. T., Th., 11. Laboratory, daily ex. S., 1.30 to 4.30. Dr. WHITTELEY.

E. Quantitative Analysis. Elementary. An introduction to quantitative methods and the chemistry upon which these methods are based. Lectures, explanatory of the methods used, are first given: each student then performs simple analyses which involve the use of the apparatus ordinarily employed in analytical work. Two lectures, and ten hours in the laboratory per week. Mr. CUSHMAN.

Advanced work (see course F) may be taken by students who complete this course before the close of the session.

F. Quantitative Analysis. Advanced special methods of Quantitative Analysis, both gravimetric and volumetric, such as are of sanitary and technical importance. Laboratory hours elective. Mr. CUSHMAN.

BOTANY.

General Announcement. Courses A, B, C, D, E and F are especially designed to suggest topics and methods for teaching Botany in the high schools and in the grades. These courses are offered to those who have not had work in these subjects, and for teachers who wish to review them. Course D is recommended to teachers who have had the preliminary work in A and B, for the purpose of furnishing a more independent basis for their work in instruction, or to those who desire to prepare for research. Students in course D can do independent work on Friday and on Saturday if desired. No scheduled work is offered for Saturday, but the laboratory is open to all students, and it is recommended that the day be used for excursions or for the purpose of finishing up the work of the week, either in the care of material, finishing of notes and illustrations, or in the reference library.

Because of the short period of time given to the summer session, students will find it to their advantage to arrange to devote all their time to Botany, where circumstances will permit.

INTRODUCTORY COURSES.

(*These courses are open to all students.*)

A. **Elementary Plant Morphology.** A comparative study of the form and reproduction of representative species in all the great groups of plants. (Algae, Fungi, Liverworts, Mosses, Ferns, Gymnosperms, Angiosperms). Lectures, M., 9. Laboratory practice, M., W., F., 2-5. Professor ATKINSON and Mr. KAUFFMAN.

B. **Elementary Plant Physiology.** A study of the general principles underlying the processes of nutrition, growth, etc. Lectures, T., 9. Laboratory practice, T., Th., 11-1. Professor ATKINSON and Mr. KAUFFMAN.

C. **Mycology.** Studies of the fleshy fungi, with special reference to methods of distinguishing the commoner edible and poisonous species, and the genera of the basidiomycetes. The following periods are suggested, but can be changed upon consultation. M., W., F., 2-5; T., Th., forenoon. On the first few days a lecture will be given at 8 o'clock, and thereafter at such times as is convenient and as material collected suggests. For those who wish to devote all their time to this subject, work will be arranged for Monday and Wednesday forenoons and independent work on Friday and Saturday. Students who have taken this course in former summers can continue the same subject, or take work in the parasitic fungi, devoting the entire week to the work if desirable. Lectures, laboratory practice, and field excursions. Professor ATKINSON and Mr. BRADFIELD.

NATURE STUDY COURSES.

(Either of these courses can be taken independently of any of the Introductory work; open to all students).

D. **The Plant in relation to its environment.** The lectures will deal with the plant as a living organism in its relation to environment, and an attempt will be made to outline the *principles of plant ecology*. Lectures only. W., F., 9. Professor ATKINSON.

E. **First Studies on Plant Life.** Lectures, studies, observations, and simple experiments, to illustrate and interpret plant life. Emphasis will be laid on the form of the plant and its parts and on the work of the plant in order to interpret the more obvious characters and activities, the relation to environment, etc. The work is intended to outline courses of instruction of an elementary kind for teachers of Nature Study. M., W., F., 11-1; T., Th., 2-5. Instructor ———.

F. **Excursions.** A few excursions for field work will be arranged by appointment on Saturdays, either for the forenoon, or more extended ones all day.

ADVANCED COURSES.

G. Methods of Research. *Morphology and Embryology.* Lectures, M., W., 11-12. Laboratory practice, M., T., W., Th. The lectures will deal with the morphology and development of the bryophytes, pteridophytes, gymnosperms and angiosperms. In the laboratory work studies in the structure of the organs of reproduction will be made the basis for acquiring familiarity with methods in fixing tissues, infiltrating with paraffine, sectioning, staining, etc. During the afternoon the laboratory work is to be carried on independently.
Dr. FERGUSON.

H. Research Work. (a) Those already familiar with the preliminary methods may begin some piece of investigation in morphology or embryology. (b) *Methods of Research in Mycology.* Those who are sufficiently familiar with the fungi may take up some line of research work. (c) Research in Plant Physiology. Professor ATKINSON, Dr. FERGUSON, Mr. BRADFIELD and Mr. KAUFFMAN.

For description of the botanical laboratory, conservatory, the general equipment, etc., see p. 169. A small fee will be charged for the use of apparatus, material, etc., in the laboratory courses and students are expected to bear their share of the expense of the excursions.

Students who are prepared to take up graduate work can do so upon application.

GEOLOGY AND GEOGRAPHY.

The object of this school of geology and geography is two-fold; first, to give instruction on subject matter and method in geology and physical geography for teachers in the high schools, normal schools, and colleges, and secondly, to offer, in connection with these courses, others on method for geography teachers in the grades. For the latter purposes the courses in dynamic geology and physical geography are intended to give the necessary physiographic basis upon which the modern scientific teaching of geography is founded. The work embraces lectures, conferences, field work, laboratory work, and supplementary reading. The laboratory is equipped with an excellent teaching collection of maps, specimens, and models, besides fully 5,000 lantern slides on geological and geographical subjects. Much attention is given to field work, short excursions being frequently made to places near the University where there are clear illustrations of geologic, physiographic, and industrial features. There are also longer voluntary excursions each week to more distant points, as the anthracite coal mines at Wilkes-Barre, Niagara Falls, the shore of Lake Ontario, Watkins Glen, and other places of special interest. The long voluntary excursions are made on Saturday.

A (1). **Physical Geography of the Lands.** A course upon modern physical geography or physiography of the lands. In the lectures special stress is placed, where possible, upon the questions of the origin and life history of land forms and their influence on life. The lectures are fully illustrated by lantern views. For laboratory and field work see Courses A (2) and A (3). *Geological Lecture Room*, M., T., W., and Th., 10. Professor TARR.

A (2). **Laboratory Course in Physical Geography.** A practical course to illustrate the methods and materials available for laboratory and field work in high schools. Much attention is given to the possibilities open to the teacher in schools having limited laboratory equipment. Among the specific topics treated are the following: methods of determining latitude and longitude; the interpretation of topographic maps; study of topographic maps illustrating type land forms; the use of photographs; the use and interpretation of models; meteorological instruments and weather maps. Where desired by a teacher, personal suggestions will be made regarding the local field work he may carry on with his classes. *Geological Laboratory*, T. and Th., 3-5. Assistant Principal CARNEY and Mr. MILLS.

A (3). **Field Course in Physical Geography.** One afternoon each week is devoted to the study of physiographic phenomena in the field, and two Saturdays are given to all day excursions. In this field work a study is made of river valley forms, both young and mature; waterfalls; lakes; and typical glacial deposits, including moraines, drumlins, kames, eskers, and overwash plains. An excursion to Niagara is also offered in connection with this course, but attendance upon it is voluntary. The excursion to the anthracite coal fields (Course B (3)) is also open to students in this class. Monday afternoon. Professor TARR, Assistant Principal CARNEY, Mr. WHITBECK, and Mr. MILLS.

B (1). **Dynamic Geology.** A lecture course on the principles of dynamic geology, including such topics as weathering, rivers, lakes, glaciers, oceans, nature and origin of rocks, mountain formation, volcanoes, earthquakes, etc. Also the application of the principles of dynamic geology to an interpretation of the past history of the earth. Each phase of the subject is fully illustrated by lantern views. For laboratory and field work, see Courses B (2) and B (3). *Geological Lecture Room*, M., T., Th., F., 9. Professor BRIGHAM.

B (2). **Laboratory Course in Geology.** This course is intended to furnish an opportunity for the study of such geological phenomena as are capable of illustration by specimens, maps, and models. The topics included are the common rock-forming minerals; characteris-

tics, origin, mode of occurrence, and classification of common rocks ; the study of hand specimens, illustrating such geological phenomena as weathering, joint planes, concretions, mineral veins, metamorphism, etc. ; the meaning and interpretation of geological maps and models. *Geological Laboratory*, T. and Th., 3-5. Mr. MATSON.

B (3). **Field Course in Geology.** One afternoon each week, and two Saturdays are devoted to excursions in the neighborhood of Ithaca, studying such phenomena as stratification, folding, faulting, joint planes, erosion, deposition, etc. A voluntary excursion to the anthracite coal fields of Pennsylvania is also offered, and students of this course are permitted to go on the Niagara excursion (Course A (3). Wednesday afternoon. Professor BRIGHAM, Assistant Principal CARNEY ; Mr. MATSON, and Mr. MILLS.

C. **The Geography of the United States.** A lecture course treating of the physiographic features of the United States, with reference to the history and industrial development of the several sections of the country. The principal sub-topics are (1) the geological history of the continent ; (2) its climatic features ; (3) the physiography of the several groups of states with reference to early history, occupations of the people, location of cities, and general development. Designed especially for teachers and any others who desire to know the facts and methods of modern educational geography. Three lectures each week, with lantern illustrations. *Geological Lecture Room*, M., W., and F., 11. Professor BRIGHAM.

D. **The Geography of Europe.** A consideration of the physiographic features of Europe and their influence upon the history and industrial development of the several nations. The principal sub-topics are : (1) Physiography of the continent and its development ; (2) climate, from the standpoint of cause and effect ; (3) natural resources ; (4) influence of these various physiographic features upon race characteristics, early movements of people, development of navigation, modern national development, location of leading cities, both in the past and the present, etc. The lectures are illustrated by lantern slides, maps, and models. *Geological Lecture Room*, T. and Th., 11, and F., 10. Professor TARR.

E. **Home Geography.** The concrete elements of geography in the home neighborhood, as local surface features ; local commerce ; industries and occupations ; food, clothing and building materials ; local weather conditions and seasons ; and local government. Excursions with classes of children are discussed as to difficulties and advantages. List of typical excursions. Local geography, as related to the larger world beyond and to text-books, is also treated. Applica-

tion of field work in courses A (3) and B (3) to the teaching of Home Geography. *Geological Lecture Room*, M., T., W., and Th., 12. Professor MCMURRY.

F. Type Studies in Geography for Grammar Grades. The selection of important topics as types in geography. Illustrations of type studies on North America, Europe, and other lands. The principles of method, illustrated by such type studies. Relation of such studies to text-books in geography. The course of study in geography, and the value of earlier lessons to the interpretation of later lessons in the course. The method of oral treatment of some topics. Reviews and comparisons. *Geological Lecture Room*, T., 8, W., 9, F., 12. Professor MCMURRY.

G. (1) Commercial Geography. A general study of commercial geography, with special relation to the position held by the United States in the commercial struggle of the present time. After an introductory statement regarding the history of commerce and of industry, a study is made of the physical controls of commerce. The great commercial staples and the development of allied interests are then considered, followed by a treatment of the commerce and industry of the United States and the leading commercial nations and regions, with special reference to their relation as competitors to the United States. *Geological Lecture Room*, M., W., Th., F., 8. Principal EMERSON.

G. (2) Laboratory and Field Work in Commercial Geography. Two afternoons a week are devoted to laboratory and field study. In this work a study is made of the methods of teaching commercial geography and of studying commerce and industry; in the laboratory, by means of selected specimens and photographs illustrative of the world's great industries; out of doors, by excursions conducted through the factories and mills of Ithaca and vicinity. The voluntary excursions to Niagara and Wilkes-Barre, Courses A (3) and B (3), are open to students of this class. A study of the industrial aspects of these regions will be undertaken for the students in Course G (2). *Geological Laboratory*, T. and Th., 3-5. Principal EMERSON.

H. Class-Room Problems in Geography. Lectures and discussions pertaining to actual work in the school room; conduct of the recitation; the use of the text-book; supplementary reading; map modeling and map drawing; collection of materials for a geographical museum; a discussion of the correlation of geography with other subjects; how to develop and maintain interest in geography among pupils. *Geological Lecture Room*, T., Th., F., 2-3. Mr. WHITBECK.

I. Laboratory Methods for the Grades. Laboratory and field excursions designed to illustrate the use of laboratory methods in ge-

ography in the grades, and to show teachers what inexpensive materials are available; the use of relief maps, contour maps, U. S. Geological Survey folios, and government and state publications generally; the use of models, lantern slides, pictures, outline maps, etc.; the collection of illustrative materials; graded field excursions. *Geological Laboratory*, F., 3-5. Mr. WHITBECK.

J. Round Table Conference. On one evening each week the several instructors in the department will meet such students as desire to attend for the consideration of specific topics relating to geography teaching. These topics will be announced in advance. Attendance on this course is purely voluntary and cannot be counted for University credit; but it is expected that by a free interchange of views it will prove profitable to all students in the school.

K. Advanced Course in Dynamic Geology and Physiography. Students desiring to do advanced field and laboratory work in dynamic geology or physiography will be provided with facilities for such work under the supervision of the instructors. This work will vary with the needs of the individual students. The region in the neighborhood of Ithaca offers numerous interesting problems for advanced study. Professors TARR and BRIGHAM, with assistants.

PHYSIOLOGY.

A. The Physiology of Digestion and of the Blood. This course will also include a discussion of the Cell and Foods. M., T., W., 10 *Veterinary College*. Professor FISH.

B. The Physiology of Circulation, Respiration and Excretion. Th., F., S., 10. *Veterinary College*. Professor FISH.

C. The Physiology of the Muscular and Nervous Systems. M., W., F., 8. *Veterinary College*. Mr. JOHNSTON.

D. Laboratory Practice. This course is devoted mainly to Chemical Physiology. The various food-stuffs are examined and the action of the digestive ferments thereon. Milk, Bile and Blood are also studied including a spectroscopic examination of the latter. The work in this course is closely correlated with lecture course A. M., T., 2-5. *Veterinary College*. Professor FISH and Mr. JOHNSTON.

E. Experimental Physiology. This course deals mainly with a study of the physiology of Nerve and Muscle and the use of apparatus. Irritability, reflex action, work, fatigue, tetanus and the effect of temperature and drugs upon the tissues are also included. The work in this course is closely correlated with lecture course C. W., Th., 2-5. *Veterinary College*. Professor FISH and Mr. JOHNSTON.

The lectures are illustrated with lantern slides, charts, histological preparations, dissections and practical demonstrations relative to the subject under discussion.

The department possesses a good library of modern elementary and advanced text books on physiology and students are urged to make the fullest use of it in connection with the lecture and laboratory courses.

The laboratory is located on the second floor of the Veterinary College. It is well lighted and ventilated and equipped with new apparatus. The equipment includes kymographs, induction coils, sphygmographs, cardiographs, circulation schemas, tambours, centrifuges, microscopes, and other apparatus for complete and satisfactory work.

Those, who can, are advised to take all five courses. If this cannot be done, courses A and D or A and B may be selected. Courses C and E cannot be taken without the others or their equivalents.

VERTEBRATE ZOOLOGY.

Elementary Vertebrate Zoology. Lectures M., W. F., 9-10. *McGraw 6*. Laboratory work M., W., F., 10-1 and 2-4. Mr. REED.

The lectures will treat of the structure, development, systematic relationship, life-histories and habits of vertebrate animals and their relation to the environment. In the laboratory will be dissected and studied representative forms. One afternoon or, if time permits, one day each week will be spent in field work. Typical localities will be visited and the vertebrate fauna studied.

DESCRIPTIVE GEOMETRY.

A. Descriptive Geometry. This course is equivalent to courses 8 or 9, page 346. A study of the representation of lines, planes, surfaces, and solids; and of their inter-relation; tangents, intersections, and developments; warped surfaces; shades and shadows; perspective. The subject is presented by lectures, and the student is expected to establish the principles and methods presented by graphical solution of original problems, worked out in the drawing hours. Lectures, daily ex. S., 8. Drawing, daily ex. S., 9-12. *Lincoln Hall*. Assistant Professor OGDEN.

MECHANICS OF ENGINEERING.

A. Mechanics. This course is the equivalent of the first term of course 20, College of Civil Engineering. Admission to this course is restricted to those already having a fair knowledge of the subject. Students in Cornell University Engineering courses are not admitted to this course, unless they have taken the first term of course 20 in

University classes during the regular University year and received a mark of at least 41. Those taking it are not, in the main, permitted to take other work in the University. Problems form the basis of this work ; a rapid review of parts of Church's "Mechanics of Engineering" is also involved. A study of the principles and applications to engineering of the mechanics of solids. Statics. Centers of gravity. Chains and cords. Dynamics of a material point. Impact. Virtual velocities. Centripetal and centrifugal forces. Moments of inertia of plane figures. Elementary principles of work and energy. Stresses and strains. Tension. Shearing. Compression. Torsion. Elementary problems in flexure. Lectures, recitations and problems, daily, except Saturday, 9, 10, *Lincoln Hall 32*. Professor FILKINS and Mr. JOHANNSEN.

B. Mechanics. This course is the equivalent to the second term of course 20, College of Civil Engineering. The restrictions in this course are the same as in Mechanics A above. Advanced problems in flexure. Elastic curves. Safe loads. Continuous girders. Moments of inertia of solids. Dynamics of rigid bodies. General principles of work and energy. Power. Fly-wheels. Friction. Dynamometers. Belting. Graphic statics of mechanism. Elementary principles of hydraulics. Recitations, lectures, and problems, daily except Saturday, 10, 11. *Lincoln Hall 32*. Professor FILKINS and Mr. JOHANNSEN.

DRAWING AND ART.

A. Drawing. The use of the lead pencil, pen and ink, or charcoal. The grouping and lighting of models. Also blackboard and other methods available in nature study and primary work. Daily ex. S., 9-12. Mr. GUTSELL.

B. History of Art. Lectures. Painting, sculpture and allied arts in the Italian communities during the Mediaeval and Renaissance periods. The guilds, masters and apprentices. Municipal and ecclesiastical patronage and the influence of the nobility. Elements of decadence. The culmination of culture in the early 16th century, and a brief review of the decline. References and readings in the Library. Illustrated with lantern slides, prints and photographs. Daily ex. S., 11. Mr. GUTSELL.

C. Special arrangement may be made for work in water colors, pen and ink, or perspective, elementary or advanced, according to the needs of individual students. Daily ex. S., 9. Mr. GUTSELL.

D. Drawing from Nature. Work out of doors for advanced students. Afternoons. The instructor will be in attendance two afternoons. Mr. GUTSELL.

MECHANICAL DRAWING AND DESIGNING.

A. **Mechanical Drawing.** Use of instruments, geometrical problems, orthographic projection, inking and tinting, shading and shade lines, lettering, isometrical drawing, working drawings and conventions. *Sibley, 303.* Mr. J. S. REID.

B. **Elementary Designing.** Problems in machine drawing and designing. Three hours daily except Saturday. *Sibley 303.* Mr. J. S. REID.

C. **Kinematic Drawing and Machine Design,** including special course in locomotive design. Three hours daily except Saturday. *Sibley 303.* Mr. J. S. REID.

These courses can be arranged to suit individual needs ; they are especially suitable for teachers of manual training.

Course A is designed for beginners or those who desire to obtain a more perfect knowledge of approved methods in modern practice.

In course B the principles, methods, and conventions of course A are applied to the drawing and designing of general machine and engine details and small machines.

Many valuable samples and models of machines and details of machines and engines are used to illustrate the problems in this course.

Course C consists of problems in irregular curves, cams, gears, chamber wheels, chain wheels, linkages and original designing of complete machines and locomotive details.

MECHANIC ARTS : BASIS FOR MANUAL TRAINING.

A. **Shopwork.** Woodworking ; use of tools ; joinery ; turning ; pattern-making.

B. **Shopwork.** Blacksmithing ; use of tools ; forging, welding ; tool-dressing, etc.

C. **Shopwork.** Foundry work ; moulding, casting, mixing metals, brass work, etc.

D. **Shopwork.** Machinist work ; use of hand and machine tools ; working to form and to guage ; finishing ; construction ; assemblage ; erection.

Each of the above courses, four hours. Daily as assigned, 8-12, 1-5. By Professor MORRIS, (Messrs. WISEMAN, WOOD, VANDERHOEF, and HEAD, Foremen of shops). No assignment of less than four hours.

The foregoing courses are designed especially for the needs of teachers of manual training. Frequent consultations are provided for, and special attention is given to individual needs.

ASSOCIATE ALUMNI.

By the charter of the University the graduates are entitled to elect two of the Board of Trustees each year. At a meeting called for the purpose, and held on Wednesday, June 26, 1872, the day preceding the annual Commencement, representatives of all the classes that had graduated being present, the following organization was effected :

ARTICLES OF ASSOCIATION AS ADOPTED JUNE 26, 1872, AND AFTERWARDS AMENDED.

I. The Alumni of Cornell University hereby constitute themselves an association to be known by the name of the Associate Alumni of Cornell University.

II. The object of this association is declared to be to promote in every proper way the interest of the University, and to foster among the graduates a sentiment of regard for each other and attachment to their Alma Mater.

III. All graduates of this University, who, by their diplomas are entitled electors of the University, are members of this association. All members of the Faculty of this University are honorary members of this association.

IV. The officers of this association shall consist of (1) a president ; (2) vice-presidents to be elected as follows : one vice-president from the classes numbered from '69 to '74 inclusive, and one from each succeeding group of five classes, provided that when the last group shall number three classes, it shall thereafter be entitled to a vice-president ; (3) a corresponding secretary ; (4) a recording secretary ; (5) a treasurer.

V. This association shall meet annually on the day preceding Commencement, at such hour as the executive committee shall determine.

VI. Any proposition to alter or amend these articles of association must be made at a regular meeting and have the assent of two-thirds of the members present.

By an amendment to the charter of the University, passed May 15, 1883, permitting members of the Alumni, not present in person, to vote by written ballot at the annual election of Trustees, the Treasurer of the University is required to keep " a registry of the signature and address of each alumnus." It is therefore important that each alum-

nus keep the Treasurer of the University informed of his full address (in cities, street and number) and notify him immediately of any change.

The following ordinance was adopted by the Board of Trustees, October 24, 1888: All graduates of the first degree, in any of the departments of Cornell University, and all persons who have been admitted to any degree higher than the first in said University shall be alumni of said University, and as such be entitled to vote for Alumni trustees under and in pursuance of the provisions contained in Chapter 763 of the Laws of New York, passed in 1867.

Officers for 1902-1903.

President—Charles F. Wheelock, '73.

Vice-Presidents—R. G. H. Speed, '71; F. D. Crum, '77; A. K. Hiscock, '82; H. M. Lovell, '87; L. D. Baldwin, '92; Miss M. A. Clark, '97.

Corresponding Secretary—G. L. Burr, '81.

Recording Secretary—G. W. Harris, '73.

Treasurer—G. S. Tarbell, '91.

Executive Committee—C. F. Wheelock, G. L. Burr, G. W. Harris, G. S. Tarbell, *ex officio*, E. L. Nichols, '75, F. Irvine, '80.

Auditing Committee—I. P. Church, '73; C. H. Hull, '86; A. T. Kerr, '95.

Canvassing Board for Trustee Election—C. L. Crandall, '72, W. W. Rowlee, '88; remaining members to be appointed as directed in the By-Laws, after the nominations of candidates for alumni trustee have been announced.

Officers of Local Alumni Associations.

(As last reported.)

CENTRAL NEW YORK ASSOCIATION.

President—

Secretary—Percy Clisdell, '90, Corning, N. Y.

ITHACA ASSOCIATION.

Secretary—D. F. VanVleet, '77.

MINNESOTA ASSOCIATION.

President—W. E. Bramhall, '77.

Secretary—O. L. Taylor, '81, St. Paul, Minn.

NEBRASKA ASSOCIATION.

President—A. C. Wakely, '78, Omaha, Neb.

Secretary—J. W. Battin, '90, Omaha, Neb.

NEW ENGLAND CORNELL CLUB.

President—C. H. Thurber, '86.

Secretary—L. E. Ware, '92, 108 Austin St., Worcester, Mass.

CORNELL UNIVERSITY CLUB OF NEW YORK CITY.

President—C. J. Shearn, '90, 56 Wall St., New York City.

Secretary—E. C. Blair, '97, 80 Broadway, New York City.

NORTHEASTERN PENNSYLVANIA ASSOCIATION.

President—G. B. Davidson, '84, Scranton, Pa.

Secretary—F. L. Brown, '82, Scranton, Pa.

PHILADELPHIA ASSOCIATION.

President—F. S. Edmonds.

Secretary—H. V. Register, '92, Drexel Bldg., Philadelphia, Pa.

WASHINGTON ASSOCIATION.

President—J. B. Foraker, '69.

Secretary—H. H. Burroughs, '94, 513 7th St., Washington, D. C.

CORNELL ALUMNI ASSOCIATION OF BUFFALO.

President—Eugene Cary, '78.

Secretary—R. M. Codd, Jr., '97, Buffalo, N. Y.

ROCKY MOUNTAIN ASSOCIATION.

President—R. W. Corwin.

Secretary—A. S. Proctor, 1640 Arapahoe, Denver, Col.

CHICAGO ASSOCIATION.

President—D. F. Flannery, '76.

Secretary—C. M. Howe, 815 Grove St., Evanston, Ill.

PACIFIC NORTHWEST ASSOCIATION.

President—J. A. Rea, '69, Olympia, Wash.

Secretary—Frank D. Nash, '72, Tacoma, Wash.

EASTERN NEW YORK ASSOCIATION.

President—R. G. Scherer.

Secretary—R. J. LeBoeuf, '92, Municipal Gas Co. Bldg., Albany, N. Y.

ROCHESTER ASSOCIATION.

President—Ralph Gorsline.

Secretary—M. L. Stern, '95, 45 German Ins. Bldg., Rochester, N. Y.

ASSOCIATE ALUMNI.

SOUTHERN TIER ASSOCIATION.

President—John Bull, Jr., '85, 114 Lake St, Elmira, N. Y.

Secretary—D. N. Heller, '88, Elmira, N. Y.

CORNELL CLUB OF WESTERN PENNSYLVANIA.

President—R. W. McClellan, '81.

Secretary—B. M. Sawyer, '92, 237 S. Highland Ave., Pittsburg, Pa.

BINGHAMTON ASSOCIATION.

President—A. W. Clinton, '72.

Secretary—R. A. Gunnison, '96, Masonic Temple, Binghamton, N. Y.

CORNELL WOMEN GRADUATES' ASSOCIATION.

President—Mrs. Mary Relihan Brown, '93.

Secretary—Mrs. Carrie Myers Northup, '96.

Meetings at Ithaca annually on afternoon of Alumni Day.

TOLEDO ALUMNI ASSOCIATION.

President—W. J. Sherman, '77.

Secretary—W. A. Clarke, 16th and Jefferson Sts., Toledo, O.

SEATTLE ALUMNI ASSOCIATION.

President—F. J. Barnard.

Secretary—M. M. Odell, '97.

DETROIT ALUMNI ASSOCIATION.

President—M. T. Conklin, '72.

Secretary—E. E. Haskell, '79, Detroit, Mich.

NIAGARA FALLS ALUMNI ASSOCIATION.

President—Eugene Cary, '78.

Secretary—F. L. Lovelace, '80, Niagara Falls, N. Y.

THE CORNELL CLUB OF ST. LOUIS.

President—C. H. Anderson, '83.

Secretary—M. A. Seward, '97, 700 Carleton Bldg., St. Louis, Mo.

THE CORNELL UNIVERSITY ASSOCIATION OF DELAWARE.

President—G. R. Thompson, '75, Wilmington, Del.

Secretary—A. D. Warner, 1900, Wilmington, Del.

CORNELL ALUMNI ASSOCIATION OF THE PHILIPPINE ISLANDS.

President—A. G. Heppert, '93.

Secretary—Clara Donaldson, '01, Dept. of Education, Manila, P. I.

Alumni Bureau.

The Alumni Association voted at its meeting in June, 1890, to establish in the University an Alumni Bureau, and at the annual meeting in June, 1896, incorporated in the By-Laws of the Association the following provision: "There is established an Alumni Bureau for the promotion of the interests of graduates or other ex-students of the University in securing positions. The Alumni Bureau shall be under the general oversight of the executive committee of the Association and in the special charge of the Registrar of the University." In accordance with this resolution, a permanent Bureau has been constituted where names are registered with a record of the position desired and of the study and experience of those who wish situations. To render this organization in the highest degree efficient, it is desired that all interested should communicate as early in the year as possible to the Registrar of the University information of vacancies which may occur in public positions which graduates are prepared to fill. Former students can thus render a constant service to the University, and to successive classes as they graduate. A list of such situations is kept and is available for consultation by all students. Blank forms will be furnished on application to the Registrar.

In accordance with the vote of the Alumni Association, the annual report of the Alumni Trustees, containing a review of the year and such matters affecting the University as interest the Alumni, is sent to all members whose annual dues have been paid. Any alumnus who shall pay to the Treasurer ten dollars at one time is thereafter exempt from the payment of annual dues. Remittances may be made to the order of the Corresponding Secretary. The last report is now ready for distribution.

The Corresponding Secretary is required to keep a list of the addresses of graduates, and it is requested that he may be notified of changes in the address of any member.

Class Memorials.

(As reported.)

CLASS OF 1872 :—Seventy-two Elm Trees bordering President's Avenue and northern half of East Avenue.

CLASS OF 1873 :—Drinking Fountain in front of McGraw Hall.

CLASS OF 1878 :—The Class Pipe.

CLASS OF 1879 :—Bronze Tablet containing Bust of Bayard Taylor in Sage Chapel.

CLASS OF 1883 :—Portrait of Professor William Dexter Wilson, D.D., LL.D., in University Library.

CLASS OF 1884 :—Portrait of Professor Charles Chauncey Shackford, A.M., in University Library.

CLASS OF 1885 :—Statue of Augustus Caesar in the Museum of Casts.

CLASS OF 1886 :—The '86 Memorial Prize in Declamation. *See University Register, p. 62.*

CLASS OF 1890 :—Cornell Boat House.

CLASS OF 1891 :—The '91 Memorial Fund for Sick Students.

CLASS OF 1892 :—Witherbee Memorial Club House at Percy Field.

CLASS OF 1893 :—Interscholastic League Prizes in Athletics.

CLASS OF 1894 :—The '94 Memorial Prize in Debate. *See University Register, p. 63.*

CLASS OF 1895 :—The Henley Shell.

CLASS OF 1896 :—Gift toward the establishment of an Alumni Hall.

CLASS OF 1897 :—Gift toward the establishment of an Alumni Hall.

CLASS OF 1898 :—Gift toward the establishment of an Alumni Hall.

CLASS OF 1898 (College of Law) :—Carved oak seat in Boardman Hall.

CLASS OF 1899 :—Gift toward the establishment of an Alumni Hall.

CLASS OF 1900 :—Gift toward the establishment of an Alumni Hall.

CLASS OF 1901 :—Gift toward the establishment of an Alumni Hall.

CLASS OF 1902 :—Gift toward the establishment of an Athletic Field.

THIRTY-FOURTH ANNUAL COMMENCEMENT.

June 19, 1902.

DEGREES CONFERRED.

FIRST DEGREES.

Bachelors of Arts.

Arthur Soper Armstrong,	Fannie Lazelle Coons,
Sarah Lillian Baldwin,	Helen Wilhelmina Cooper,
Emma Nellie Barker,	Clement Kellogg Corbin,
Winifred Clare Benedict,	Marguerite Roshé Cordes,
Martha Crosby Bennett,	Florence Brewster Corse,
Ruth Bentley,	Melvin Herbert Coulston,
Josephine Edna Bessey,	Roy Horace Crihfield,
Julia Morum Bligh,	Hugh Dysart Cutler,
Robert Allen Bole,	Frederic Warren Darling,
John Henry Bosshart,	William Jonas DeLamater,
James Walter Bowen,	Bertha Deyo,
Edgar Stillman Bowman,	Elizabeth Almy Doughty,
Herman Hine Brinsmade,	Bertha Maria Downes,
James Cyrus Bristol,	Clarence Morton Doyle,
Douglass Kinnear Brown,	Frederic Gibbons Dunham,
Helen Louise Brown,	James Richard Earle,
Henry Hine Buckingham,	Frederick Richard Eaton,
Marguerite Jane Bullard,	Frank Custer Edminster,
Stewart Burchard,	Ethel May Emerson,
Carrie Luella Burritt,	Fred Earl Emmons,
Anne Browning Butler,	Edward Evans, Jr.,
Howard Palmer Butler,	John Fitz Gerald Fairbairn,
Emma Pruden Carman,	Eugene Hilpert Fellows,
Frank Carney,	Henry Theodore Ferriss,
Kathryn Elizabeth Clare Carrigan,	Horace Luther Field,
Henry Lord Chase,	Agnes May Ford,
Robert Clauson,	Michael Ambrose Ford,
Amasa Day Cook, Ph.C.,	John Morgan Francis,

Benjamin Otis Frick,	Elias Avery Loew,
Paul Frederick Gaehr,	Marion Tappan Longbothum,
Robert Harvey Gault,	Frances Clare Longnecker,
William Chauncey Geer,	Oakman Hess Lowary,
Grace Ruth Gibbs,	Jessie Esther McBride,
Otto Louis Goehle,	Everette Lothard McClure,
Julius Goettsch,	George Arthur McGonigal,
Eva Grace Mayham Goodenough,	James McGunnegle,
Mabel Hale,	Herbert Brunt MacMahan,
Maud Hamilton,	Robert Joseph McNitt,
William Albert Hamilton, A.B.,	James Aaron Magoffin,
Jesse Ralph Harris, M.D.,	Paul Blakeslee Mann,
Viola Gertrude Hast,	Myrtle Kathryn Marsh,
Clara Williston Hastings,	Mattie Alexander Martin,
Gertrude Wentworth Hastings,	Fred North Meeker,
Clarence Atkins Hebb,	Caroline Wallace Merrell,
Zillah Heidenheim,	Frank Smith Mills,
Lawrence Hendee, M.D.,	Evelyn Groesbeeck Mitchell,
Claire Louise Herder,	Louis Burgh Mount,
Anna Grace Herrick,	Ida Elise Munn,
Mary Gertrude Heughes,	May Childs Nerney,
Reuben Paul Higgins,	John Henry Neville,
Francis Edward Hinckley, Jr.,	Ellen Jane Nichols,
George Haines Hooker,	Abigail Adaline O'Brien,
Walter Wells Hoover,	Daniel Howard O'Brien,
Adah Murray Horton,	Howard Leighton O'Daniel,
Clinton Osborne Houghton,	Sylvester Francis O'Day,
Herbert Halsey Howell,	George Ashton Oldham,
Eliza Dorrance Huestis,	Albert Ten Eyck Olmstead,
Albert Henry Huntington,	George Parsons,
Margaret Scott Jarvie,	John Rea Patterson,
Fred Huntington Jennings,	Charles Rockwell Payne,
Anna Loring Kemball,	Elizabeth Gertrude Peabody,
Ralph Sherlock Kent,	Ellery Newell Peck,
Raymond Francis Charles Kieb,	Alfred Smith Petty,
Byron Albert Kilbourne,	William Henry Pike,
Jay P Kinney,	Louise Powelson,
Harold Lewis Leupp,	Lorenzo Guernsey Price,
David Rich Levi,	Jessie Treat Ray,
Harriett Malvina Levy,	Percy Edward Raymond,
Isaac Levy,	Ernest Henry Riedel,
Frederick William Charles Lieder,	Isabelle Givan Robertson,

Eva Rosalie Root,
Etta Louise Ruser,
John Patrick Ryan,
Emogene Lavinia Sanford,
William Francis Santry,
Henry Schoellkopf,
Parker Fairfield Scripture,
Watson Bartemus Selvage,
Mary Edna Shaw,
Laura Strong Sheldon,
Earnest Stanley Shepherd,
Agnes Garfield Smith,
Helen Florene Smith,
Muriel Smith,
Florence Morgan Snyder,
Sarah Frances Southwick,
John Duane Speer,
Roger Allen Spencer,
Roy Sherman Stowell,
Mary Sullivan,
Edward John Sweeney,
Charles August Taussig,
Mary Synder Taylor,
William Rolland Taylor, Jr.,
Carrie Wilbur Thompson,

Mabel Elizabeth Toaz,
Edward David Toohill,
Edith Elizabeth Townsend,
Nina Marian Tree,
Carleton McCulloch Vail,
Elizabeth Valentine,
Irene Belle Van Kleeck,
Burrell Vastbinder,
Henry Walter,
Paul Gustav Wanke,
Ralph Ware,
Nora Louise Warner,
John Sayles Watterson,
Frank Grant Wheeler,
Richardson Webster,
Maurice Robert Whinery,
Margaret Wells Whiteford,
Clara Louise Wilcox,
Jessie Campbell Wilson, B.E.,
Thomas Wilson,
George Payne Winters,
Mary Cornelia Wise,
Herbert Mariner Wood,
Herbert Spencer Wood.

Bachelors of Law.

John E Barry,
Victor Francis Boire,
George Henry Carpenter, Jr.,
Robert Earle Congdon,
Joseph Williams Cook,
Joseph Cook Culver,
Thomas Downs,
Burt Aiken Duquette,
Gerald Gilman Gibbs,
Godfrey Goldmark,
Jerome Asa Hadcock,
Harold Helm,
James Blaine Kinne,
William Arthur Kline,
Walter Garfield Lichtenstein,
Clayton Riley Lusk,

James Hamilton Macbeth,
Harry Richard McClain,
Francis Xavier McCollum,
Fred D McIntosh,
Edgar Seeber Mosher, A.B.,
James Hunt Prendergast,
Alden Ivan Rosbrook,
Frank Adam Schmidt,
Charles Tracey Stagg,
Edward Livingston Stevens, Jr., A.B.,
Ernest Melvin Strong,
George Rivet Van Namee,
Fred Andrew Peter Wagner,
Robert Sloane Wickham,
Dudley Kirkpatrick Wilcox,
Charles Shoemaker Yawger.

Bachelors of the Science of Agriculture.

Arthur Freeman Brinkerhoff
 Charles Gardner Brown, B.S.,
 George Wheeler Hosford,
 Charles Henry Kraatz,

Andrew Gilbert Lauder,
 William Montgomery Morgan,
 Theodore Matthew Swards,
 Charles William Wenbourne.

Doctors of Veterinary Science.

Harry Snyder Beebe,
 Samuel Howard Burnett, A.B., M.S.
 Fred Forbes Bushnell, B.Agr.,
 Burt English,
 Robert Julian Foster,

Fred Dewitt Holford,
 John Knapp,
 Charles Augustus Lueder,
 John Bernard Reidy,
 Jerome Walter Rosenthal.

Forest Engineers.

Willard Weld Clark,

Ernest Albert Sterling.

Bachelors of Architecture.

George William Beer,
 Frank Bement Brown,
 Herman Dercum,
 Anna E Kimber,

Douglas Mackintosh,
 Reuben Christopher Planz,
 Richmond Harold Shreve,
 Julius André Smith.

Civil Engineers.

William Charles Affeld,
 Herbert Howard Bassett,
 Mark Anthony Beltaire, Jr.,
 John Cromwell Breedlove, A.B.,
 Albert Hotchkiss Chandler,
 Arthur Edward Clark,
 Murray Fisher Crossette,
 Albert Curry,
 George Jacob Davis, Jr.,
 Ross Raymond Fernow,
 Jerry Calvin Finch,
 Robert Follansbee,
 George Munro Forrest,
 Herbert Edwin Fraleigh,
 Lloyd Garrison Gage,
 Shirley Clarke Hulse,

Guy Edwin Long,
 Clarence William Meyers,
 Louis Adolph Mitchell,
 Peter Ollason,
 William Tracy Peck,
 Arthur Evan Rommel, B.S.,
 Aaron Silverman,
 Charles Herman Snyder,
 Harold Burr Stevens,
 Edward Camp Stone,
 Franklin Stevens Storey,
 Walter Irving Tuttle,
 Bertrand Hinman Wait,
 John Sumner White,
 Howard Shay Williams.

Mechanical Engineers.

Calvin Dodge Albert,	Philip Rucker Lamar, B.S. in E.E.,
Charles Bradley Andrews, A.B.,	Charles A Lauderdale,
William Bryant Beals,	Clarence Lessels,
Herman Erasmus Beyer,	Frank De Wolf Loveland,
Walter Oliver Beyer,	Mack Martin,
William Bailey Bogardus,	Walter John Maytham,
Horace Carlton Bushnell, A.B.,	William Falley Moody,
Robert Morton Campbell,	Pierson Mitchell Neave,
G Harry Case,	William Garland Nichols,
Louis Albert Cazenove, Jr.,	Lewis Mulford Northrup,
John Chase,	William John Norton,
Frank Durbon Clark, B.S.,	Howard Bailey Odell,
Joseph Emile Coleman,	Virgil Oldberg,
William Robert Couch,	Albert Silas Penney,
Harry Nichols Craner,	Edward Harrison Powley,
Clarence Gearhart Crispin,	Charles Germain Rally,
Charles Brown Dalzell,	James Richmond,
Chester Buck Du Bois,	Edward Franklin Schaefer, B.S.,
William George Edmondson,	Frederick William Scheibner,
William Warrick Fineren,	Claude Cordon Schrott,
Wallace Park Foote,	Frank Henry Teagle,
William Britt Foster,	Harry Elliott Thompson, M.D.,
William Alliston Fuller,	Reginald Trautschold,
Harry Merton Gail,	John Chilion Trefts,
Carr Lane Glasgow,,	John Gilmore Utz,
Magnus Sigmund Haas, A.B.,	Samuel Matthews Vauclain, B.S.,
Clarence Ford Harvey,	Isaac Henry Vrooman, Jr.,
Samuel Purdy Howe,	Ralph Avery Wales,
Irving Adelbert Hunting, B.S.,	Emory Lafayette Walker,
Robert Austin Ives,	Joseph Briggs Weaver,
Harold Eddy Johnston, A.B.,	Charles Wayland Webb,
Harold Colbert Jones,	Paul Gustavus Weidner,
Martin Leopold Katzenstein, B.S.,	Albert Chadwick Williams,
Joseph Thomas Kelly, Jr.,	Victor Tyson Wilson,
Joseph Powers Kittredge,	Alfred Thomas Wood,
George Kohler,	George W Wurst,
Sidney Graves Koon,	Charles Duncanson Young.

Mechanical Engineers (in Electrical Engineering.)

Rayner Monroe Bedell,	Herbert Knox,
Edwin Victory Berg,	George Howard Kramer,
John Roy Blakeslee,	Frank George McRae,
Herman George Breitwieser, B.S.,	Loyall Allen Osborne,
Fred Dill Brown,	John Fleming Reynolds,
Orin B Coldwell,	Sidney Leonard Rich, B.E.E.,
Samuel Broadus Earle, M.A.,	Henry Nimes Rufo,
Clarence Lawrie Edmondson,	Carl George Schluederberg,
Henry Wilson Eells,	John Lawrence Turner,
Eugene Flynn Enslin, Jr., B.S. in M.E.,	Albert Walton,
Warren Beebe Flanders,	Charles Archibald Ward, M.E.,
Alan Estis Flowers,	Clarence Waterbury,
John Drewry Foy, B.S.,	Walter Duncan Whitney,
Clarence Jeremiah Gomph,	Edward Lyman Wilder,
Charles Guy Hardie,	Shiro Yamazaki,
Lawrence Sprague Haskin,	Thomas Jarvis Yates,
Rud Bryant Hayes,	John M Young, B.S. in Eng.,
Frederick Adam Klock,	Frederick Zies.

ADVANCED DEGREES.

Masters of Arts.

Susie Lillian Austin, A.B. : *Sir Thomas Smith : His Life and Career checked from the account given by Strype by the Calendars of English State Papers.*

Alice Mary Baldwin, A.B. : *Gustavus III of Sweden : A Study of the Enlightened Despotism of the Eighteenth Century in Europe.*

John Hamilton Blair, A.B. : *The Influence of the Ideas of the Physiocrats upon the Governments of Europe during the Eighteenth Century.*

Garrick Mallory Borden, B.S. : *The Humanitarian Movement in Europe during the Eighteenth Century.*

Amy Celeste Bruner, A.B. : *Emerson's Relation to Plato.*

Elizabeth Conrow, A.B., Ph.B. : *A Study of Wagner's Parsifal.*

Georgianna Conrow, A.B. : *The Dramatic Theories of Diderot.*

Fred William Foxworthy, B.S. : *The Taxonomic Value of the Characters presented by the Legs of Orthoptera.*

Cebern Dodd Harris, B.S. : *The Sodium Cobaltic Nitrite and the Phosphomolybdic Acid Gravimetric and Volumetric Methods for the Estimation of Potassium in Fertilizers. etc.*

Edward Maslin Hulme, A.B. : The Treaty of Ghent.

Oskar Augustus Johannsen, B.S. : On Aquatic Diptera.

Clarence Lemuel Elisha Moore, B.Sc. : On Curves that remain Invariant in Laguerre's Transformation.

Adeline Putnam, A.B. : The Relation of the Supernatural Element to the Main Dramatic Movement in Shakespeare's Plays.

Frances Seaton, A.B. : The Compound Eyes of Machilis.

Charles Lacy Sheldon, Jr., A.B. : The Chief Historical and Literary Characters in Henry Esmond.

Charles Edward Smith, Ph B. : The Genesee Sub-Stage : Its Character and Distribution.

Clayton Orville Smith, B.S. : Cultures of some Fungi on Beans and Cucurbits.

Sao-Ke Alfred Sze, A.B. : A History of the Relations between the European Powers and China.

Elizabeth Sweet Winans, A.B. : The Industry, Commerce, and State Resources of Athens in the time of Pericles.

Masters of Science in Agriculture.

Robert Edward Eastman, B.S.A. : Do Fertilizers Affect Pollen ?

James Alfred Foord, B.S. : The Effect of Food upon the per cent. of Fat in Milk.

Edwin Jackson Kyle, B.S.A. : The Thinning of Fruit.

Chalmer Kirk McClelland, B.Sc. in Agr. : Phosphoric Acid as a Fertilizer.

Julia Ellen Rogers, Ph.B. : Some Materials for Winter Work in Nature-Study.

Andrew Edward Stene, B.Agr. : Studies in the Pollination of Tomatoes.

Milton Miller Underdown, B.S.A. : The Relative Value of the Digestible Protein in different Feeding-Stuffs.

Masters of Mechanical Engineering.

L D Crain, B.M.E. : Mechanical Draft.

Charles Henry Delany, B.S. : Balancing of Marine Engines.

George Hugh Shepard, U.S.Nav.Acad. : The Design of Steam Boilers.

Ashton Stephen Tourison, Jr., M.E. : The Design and Equipment of a Modern Roundhouse.

Doctors of Philosophy.

Frank Allen, A.B., A.M. : The Relation of Color-Blindness to the Fundamental Color Sensation.

Leroy Anderson, B.S., M.S. in Agr. : Some of the Influences Affecting Milk Production with especial Reference to the Relation of Food to Milk Fat.

- Arthur Lynn Andrews, B.L., M.L. : *The English Sentence : A Study in Psychology and Rhetoric.*
- Clinton Leroy Babcock, A.B. : *An Investigation Regarding the Use of the Genitive and Accusative in Latin with Verbs of Remembering and Forgetting.*
- John Wallace Baird, A.B. : *The Relation of Accommodation and Conveyance to the Perception of Depth.*
- Alexander Wellington Crawford, A.B., A.M. : *The Philosophy of F. H. Jacobi.*
- Eloise Ellery, A.B. : *Jacques Pierre Brissot : A Study in the History of the French Revolution.*
- Peter Field, B.S., M.S. : *The Forms of Unicursal Quintic Curves.*
- Charles Stuart Gager, A.B., Pd.M. : *The Development of the Pollinium and Sperm Cells in *Asclepias Cornuti*, Decaisne.*
- Elmer Edgar Hall, B.S., M.S. : *The Penetration of Totally Reflected Light into the Rarer Medium.*
- William Atwood Hilton, B.S. : *The Morphology and Development of Intestinal Folds and Villi in Vertebrates.*
- George L. Hoxie, M.E., M.M.E. : *The Induction Motor and its Engineering Capabilities.*
- Lilian Wyckoff Johnson, A.B. : *Calvin and Religious Tolerance.*
- Carlotta Joaquina Maury, Ph.B. : *The Marine Oligocens of the United States.*
- Kiichi Miyaké, A.M. : *The Development of the Archegonium and Fertilization in Picea and Abies.*
- Homer Curtis Newton, A.B., A.M. : *The Epigraphical Evidence for the Reigns of Vespasian and Titus.*
- Henry Lewis Rietz, B.S. : *On Primitive Groups of Odd Order.*
- Mary Jane Ross, A.B., A.M. : *The Origin and Development of the Gastric Glands of *Desmognathus*, *Amblystoma*, and Pig.*
- Augustus Valentine Saph, B.S., M.S., M.C.E. : *An Experimental Study of the Resistances to the Flow of Water in Pipes.*
- Margaret Everitt Schallenberger, A.B. : *The Growth of the Child's Mind : A Study of the Development of Mental Structure.*
- George Burrige Viles, A.B., A.M. : *A Comparison of J. J. Bodmer's Translation of Milton's *Paradise Lost* with the Original.*
- Lee Barker Walton, Ph.B., A.M. : *Evidence concerning the Double Nature of the Segment in Hexapoda, Chilopoda, and Diplopoda.*
- Floyd Rowe Watson, B.S. : *Surface Tension at the Interface of Two Liquids Determined Experimentally by the Method of Ripple Waves.*

CERTIFICATES AND PRIZES PRESENTED.

Certificates for Proficiency in Military Science :

William Warrick Fineren, Lawrence Hendee, M.D.,
Lloyd Garrison Gage, Frederick William Scheibner,
Jesse Ralph Harris, M.D., Charles Tracey Stagg,
Charles Duncanson Young.

The Sibley Prizes in Mechanic Arts :

First Prize ----- Bradley Thomas McCormick
Second Prize ----- Clarence Jeremiah Gomph
Third Prize ----- Walter Edward Stockwell
Fourth Prize ----- Howard Cameron Rice
Fifth Prize ----- Lloyd Virgil Lewis

The H. K. White Prizes in Veterinary Science :

First Prize ----- Fred Forbes Bushnell, B.Agr.
Second Prize ----- Jerome Walter Rosenthal

The Mrs. A. S. Barnes Shakespeare Prize :

David Arthur Hughes, B.L., M.L., Ph.D.

The Woodford Prize in Oratory :

Michael Ambrose Ford

The Eighty-Six Memorial Prize in Declamation :

Charles Bernard Dowd

The Ninety-Four Memorial Prize in Debate :

Floyd Leslie Carlisle

The Fuertes Medals :

Albert Hotchkiss Chandler
Henry Robertson Lordly, C.E.

The Sands Medals in Architecture :

Fred Lee Ackerman
Herman Dercum
Julius André Smith

Doctors of Medicine.

[Conferred June 4, 1902, at the Fourth Annual Commencement of the Medical College of New York City.]

Julius Lewis Amster,	Mary MacMillan, A.B.,
Benjamin Stockwell Barringer,	Robert Stevenson Macdonald,
B.S.,	Ph.B.,
Abraham Bernstein,	Leslie James Meacham,
Willis Elliot Bowen, Ph.G.,	Dean Miltimore, B.S.,
Stella Stevens Bradford, A.B.,	Michael Misligh, Ph.G.,
Amos Canfield,	Charles Melvin Mix, A.B.,
Charles Louis Chasins,	Walter Lindsay Niles,
Samuel Jerome Druskin, B.S.,	Jason Samuel Parker,
Frank Merritt Dyer,	Augustus Abraham Rosenbloom,
Alvin Richard Eaton, Jr.,	Cecil Metcalfe Ross,
Theodore Julius Edlich, Ph.G.,	Louis Schaefer, Ph.G.,
Simon Ehrlich,	Nan Gilbert Seymour, A.B.,
Frederick Everett, B.S.,	David Sheitlis,
Frederick Laurence Flynn,	Abraham Marcus Skernewitch,
Susan Baker Geddes,	Willis Mack Stevenson,
James Sonnet Greene,	Charles Lucius Stone,
Alice Gregory,	Victor Corse Thorne, Ph.B., LL.B.,
William Jacob Hammer,	Mary Frances Deraismes Thornton,
Edward Raymond Hildreth, A.B.,	Harvey Loren Van Pelt,
Edith Olivia Hunter Hitchcock,	Anna Irene von Sholly, A.B.,
Corliss Mason Holt,	Royden Mandeville Vose,
Elizabeth Carlisle Jagle,	William Halsey Alonzo Warner,
Christian William Janson,	Paul Waterman, A.B.,
Harry Isaac Johnston,	Willets Wilson, Ph.G.,
James Valentine Kern,	Henry Ewald Woelfle,
Charles William Knauss,	Benjamin William Zipser.
Mace Anderson Losee,	

FELLOWS AND SCHOLARS.

UNIVERSITY FELLOWS.

The Cornell Fellowship,

Caroline Lambert Sparrow, A.B., (Woman's College of Baltimore), *English Literature*

The McGraw Fellowship,

Ernest William Schoder, B.S., (Univ. of Washington), *Civil Engineering*

The Sage Fellowship,

Arthur Renwick Middleton, A.B., (Univ. of Rochester), *Chemistry*

The Schuyler Fellowship,

Louis Caryl Graton, B.S., *Geology*

The Sibley Fellowship,

Sidney Graves Koon, M.E., *Mechanical Engineering*

The Goldwin Smith Fellowship,

Ralph Vary Chamberlain, B.S., (Univ. of Utah), *Entomology*

The President White Fellowship,

Perley Gilman Nutting, M.S., (Univ. of California), *Physics*

The Erastus Brooks Fellowship,

Clarence Lemuel Elisha Moore, B.S., (Ohio State Univ.), A.M., (Cornell Univ.), *Mathematics*

Herman Dercum, B.Arch. *Architecture*

Edward Franklin Schaefer, B.S., (Coll. of City of N. Y.), M.E. (Cornell Univ.), *Mechanical Engineering*

James Bryant Hopkins, A.B., (Hamilton), *Romance Languages*

Charles Allyn Williams, B.A., M.A., (Univ. of Iowa), *Germanic Languages*

Thomas Carskardon Johnson, B.S.Agr., A.M., (West Virginia Univ.), *Horticulture*

PRESIDENT WHITE FELLOWS IN HISTORY AND POLITICAL SCIENCE.

Willard Eugene Hotchkiss, Ph.B.

Garrick Mallory Borden, B.S.

FELLOWS IN POLITICAL ECONOMY.

Albert Charles Muhse, A.M., (Indiana Univ.).

George Pendleton Watkins, A.B.

FELLOWS IN LATIN AND GREEK.

Clyde Ray Jeffords, A.B., A.M., (Univ. of Nebraska).

Edith Mae Bickham, A.B.

FELLOW IN AMERICAN HISTORY.

James William Putnam, B.S., Ph.B., A.M., (Illinois College).

SUSAN LINN SAGE FELLOWS IN PHILOSOPHY AND ETHICS.

Clarence Errol Ferree, B.S., A.M., M.S., (Ohio Wesleyan Univ.).

Nathan Elbert Truman, A.B., A.M.

George Washington Tapley Whitney, Ph.B., A.M. (Univ. of Vermont).

FELLOW IN ARCHITECTURE.

Robert Irving Dodge, B.Arch.

HONORARY FELLOWS.

Lucinda Pearl Boggs, A.B., (Univ. of Ill.), Ph.D., (Univ. of Halle),

Psychology

Margaret Everitt Schallenberger, A.B., (Stanford Univ.), Ph.D.,

(Cornell Univ.),

Psychology

GRADUATE SCHOLARS IN THE SCHOOL OF PHILOSOPHY.

Murdock Stewart Macdonald, B.A., M.A., (Dalhousie).

Annie Dawson Montgomery, A.B., (Penn. Coll. for Women).

Oliver Garfield Schumard, A.B., (Mo. State Univ.).

Herman Campbell Stevens, A.B., (Univ. of Mich.).

Clarence Atkins Hebb, A.B.

Robert Benjamin Waugh, A.B., (Hobart.).

UNIVERSITY GRADUATE SCHOLARS.

- William Weber Coblentz, B.S., (Case School), A.M. (Cornell Univ.),
Physics
- Christabel Forsythe Fiske, Ph.B., (Cornell), A.M. (Columbian),
English Philology
- Lillie Scoresby Smith, A.B., (Syracuse),
Greek and Latin
- Caroline Wallace Merrill, A.B.,
Botany
- James Irving Reynolds, A.B.,
Classical Archaeology
- Paul Blakeslee Mann, A.B.,
Neurology
- Richard Roswell Lyman, B.S. in C. E., (Univ. of Mich.),
Civil Engineering
- Cebern Dodd Harris, B.S., (No. Car. Coll. of Agr. and Mech. Arts.),
A.M., (Cornell Univ.),
Chemistry
- Oscar Perry Akers, A.B., (Avalon Coll.), A.B., (Univ. of Colo.), A.M.,
(same),
Mathematics
- Albert Ten Eyck Olmstead, A.B.,
History
- Charles Herschel Sisam, A.B., (Univ. of Mich.),
Mathematics

UNIVERSITY UNDERGRADUATE SCHOLARSHIPS.

SOPHOMORE CLASS.

THE CORNELL SCHOLARSHIPS,

- William Edward Cameron, *Course in Law*
Franklin Academy, Malone, N. Y.—O. H. Burritt, M.A., Principal.
- Franklin Edgerton, 2nd, *Course in Arts*
Central High School, Washington, D.C.—P. M. Hughes, Principal.

THE H. B. LORD SCHOLARSHIPS,

- William Arthur Hillebrand, *Course in Arts*
Central High School, Washington, D.C.—P. M. Hughes, Principal.
- Frances Ethel Johnson, *Course in Arts*
Binghamton High School—J. Edward Banta, A.B., Principal.

THE MCGRAW SCHOLARSHIPS,

- Letitia Rebekah Odell, *Course in Arts*
Erie High School—J. C. Diehl, A.B., Principal.
- Earl Hewes Kelsey, *Course in Arts*
North Tonawanda High School—J. F. Beardsley, A.B., Principal.

THE SAGE SCHOLARSHIPS,

- Vera Louise Shepherd, *Course in Arts*
Ithaca High School—F. D. Boynton, A.M., Principal.
- Mildred Jeanne Utley, *Course in Arts*
Gloversville High School—G. M. Davison, A.B., Principal.

THE SIBLEY SCHOLARSHIPS,

Herman Douglas Baggerly, *Course in Electrical Engineering*

Clifton Springs High School—H. G. Wollcott, B.S., Principal.

Robert Morris Falkenau, *Course in Mechanical Engineering*

William Penn Charter School—Richard Jones, Principal.

THE PRESIDENT WHITE SCHOLARSHIPS,

Harold Franklin Hamlin, *Course in Civil Engineering*

The Hotchkiss School—Edward G. Coy, M.A., Principal.

Edwin Weed Kramer, *Course in Civil Engineering*

Rectory School, New Iberia, La.—Rev. C. C. Kramer, Principal.

THE HORACE GREELEY SCHOLARSHIPS,

Warren Ellis Schutt, *Course in Arts*

Ithaca High School—F. D. Boynton, A.M., Principal.

William Woollard Rogers, *Course in Arts*

Watertown High School—Gary M. Jones, Principal.

THE JOHN STANTON GOULD SCHOLARSHIPS,

Marion Benjamin, *Course in Architecture*

Cleveland Central High School—E. L. Harris, B.A., Principal.

Neil Morton, *Course in Mechanical Engineering*

Groton High School—C. S. Williams, A.B., Principal.

THE STEWART L. WOODFORD SCHOLARSHIPS,

Charlotte Clementine Faust, *Course in Arts*

Girls' High School, Brooklyn, N. Y.—Calvin Patterson, B.S., Principal.

Julius Frederick Brauner, Jr., *Course in Civil Engineering*

Ithaca High School—F. D. Boynton, A.M., Principal.

FRESHMAN CLASS.

THE CORNELL SCHOLARSHIPS,

Olive Ruth Edwards, *Course in Arts*

Ithaca High School—F. D. Boynton, A.M., Principal.

Helen Mae Dennett, *Course in Arts*

Girls' High School, Brooklyn, N. Y.—Dr. William Felter, Principal.

THE H. B. LORD SCHOLARSHIPS,

Mabel Eleanor Fuller, *Course in Arts*

Homer Academy—L. H. Tuthill, A.M., Principal.

Henry Anthony Schoenborn, *Course in Law*

Hackensack High School—Dr. Haas, Ph.D., Principal.

THE MCGRAW SCHOLARSHIPS,

George Gleason Bogert, *Course in Arts*

Gouverneur High School—H. De W. De Groat, A.B., Principal.

Charles Ferguson Cook, *Course in Civil Engineering*

Utica Free Academy—A. L. Goodrich, A.M., Principal.

THE SAGE SCHOLARSHIPS,

Margaret May Allen, *Course in Arts*

Ithaca High School—F. D. Boynton, A.M., Principal.

Charlotte Holmes Crawford, *Course in Arts*

Nyack High School—Ira H. Lawton, Ph.D., Principal.

THE SIBLEY SCHOLARSHIPS,

William Daniel Allen, *Course in Electrical Engineering*
Buffalo Central High School—F. A. Vogt, Principal.

John Warner Desbecker, *Course in Mechanical Engineering*
Masten Park High School—F. S. Fosdick, Principal.

THE PRESIDENT WHITE SCHOLARSHIPS,

Herbert Hechheimer, *Course in Mechanical Engineering*
Baltimore City College—President Soper.

Eugene Casson Crittenden, *Course in Arts*
Mansfield State Normal—Andrew Thomas Smith, Ph.D., Principal.

THE HORACE GREELEY SCHOLARSHIP,

Grover Charles Brown, *Course in Civil Engineering*
Ithaca High School—F. D. Boynton, A.M., Principal.

THE JOHN STANTON GOULD SCHOLARSHIP,

Otto William Kohls, *Course in Electrical Engineering*
Rochester High School—Prof. A. H. Wilcox, Principal.

THE STEWART L. WOODFORD SCHOLARSHIP,

Carl Winter Boegehold, *Course in Mechanical Engineering*
Mt. Vernon High School—A. B. Davis, A.M., Principal.

Ruth May Weed,

Ithaca High School—F. D. Boynton, A.M., Principal.

Course in Arts

ASSOCIATE ALUMNAE SCHOLAR.

Cora Strong,

FRANK WILLIAM PADGHAM SCHOLAR.

Course in Arts

Byron Lyman Thompson,

Course in Mechanical Engineering

BOARDMAN SENIOR LAW PRIZE.

Francis Edward Swartz,

Course in Law

CATALOGUE OF STUDENTS.

GRADUATES.

Candidates for Advanced Degrees.

** In Absentia.*

- Akers, Oscar Perry, B.A., (*Univ. of Colo.*), 1898, M.A., (*same*), 1900,
Berthoud, Colo.
Mathematics, Physics. *Ph.D.*
[Mathematics, Applied Mathematics, Physics.]
- Andrews, Benjamin Richard, A.B., 1901, *Seneca Falls*
Philosophy, Education. *A.M.*
[Psychology, Education.]
- Andrews, Eugene Plumb, A.B., 1895, *Oswego*
Classical Archaeology and History of Art, Greek, Comparative
Philology. *Ph.D.*
[Greek Archaeology, Greek, Comparative Philology.]
- Austin, Blanche Tudor, B.S., (*Wells Coll.*), 1895, *Cincinnati, O.*
Entomology. *A.M.*
- Beal, Alvin Casey, B.S.A., (*Univ. of Illinois*), 1897, *Mt. Vernon, Ill.*
Horticulture, Entomology. *M.S. in Agr.*
- Bean, Arthur Malcolm, A.B., (*Iowa Coll.*), 1897, *Pekin, Iowa*
Histology and Embryology, Entomology and General
Invertebrate Zoology. *A.M.*
[Histology and Embryology, Entomology.]
- Bell, James Munsie, B.A., (*Univ. of Toronto*), 1892, *Toronto, Canada*
Chemistry, Physics. *Ph.D.*
[Physical Chemistry, Inorganic Chem., Physics.]
- Bennett, Martha Crosby, A.B., 1902, *Brooklyn*
History and Political Science. *A.M.*
[Mediæval History, American History.]
- Bickham, Edith Mae, A.B., 1899, *Ithaca*
Greek, Latin. *Ph.D.*
- Bizzell, James Adrian, B.S., (*No. Car. Coll. of Ag. and Mech. Arts*),
1895, M.S., (*same*), 1900, *Dunn, N. C.*
Chemistry. *Ph.D.*
[Agricultural Chemistry, Inorganic Chemistry, Analytical Chemistry.]

- Bradfield, Wesley, A.B., (*Alma College*), 1902, *Decatur, Mich.*
 Botany, Forestry. *Ph.D.*
 [Botany (Mycology), Botany (Comparative Morphology), Forestry.]
- Brooks, Elizabeth H, A.B., (*Indiana Univ.*), 1893, *Ithaca*
 Germanic and Romance Languages, English. *Ph.D.*
 [German Philology, French, English.]
- Brown, Sara Winifred, B.S., 1897, *Winchester, Va.*
 Education, Physiology. *A.M.*
- Browne, Arthur Wesley, B.S., (*Wesleyan*), 1900, M.S., (*same*), 1901, *Brooklyn*
 Chemistry, Physics. *Ph.D.*
 [Inorganic Chemistry, Physical Chemistry, Physics.]
- Burch, Earl Grant, B.L., (*Syracuse Univ.*), 1894, M.S., (*same*), 1896, *Fargo, N. D.*
 Entomology. *A.M.*
- Burnett, Samuel Howard, A.B., 1892, M.S., 1896, D.V.M., 1902, *Webster*
 Veterinary Medicine, Bacteriology, Histology. *Ph.D.*
 [Pathology, Bacteriology, Histology.]
- Burrows, George Howard, B.S. in Chem., (*Univ. of Vermont*), 1899, *Burlington, Vt.*
 Chemistry, Mathematics. *Ph.D.*
 [Physical Chemistry, Inorganic Chemistry, Mathematics.]
- Butler, Anne Browning, A.B., 1902, *Indianapolis, Ind.*
 Greek, Latin. *A.M.*
- Cahill, Rose Hannah, Ph.B., 1886, *Brooklyn*
 History and Political Science. *A.M.*
 [American History, Political Economy.]
- Carney, Frank, A.B., 1902, *Ithaca*
 Geology, Education. *Ph.D.*
 [Physical Geography, Dynamic Geology, Education.]
- Case, Francis Mills, M.E., 1899, *Defiance, Ohio*
 Mechanical Engineering. *M.M.E.*
 [Electrical Engineering, Experimental Engineering.]
- Cavanaugh, George Walter, B.S., 1896, *Ithaca*
 Chemistry. *Ph.D.*
 [Agricultural Chemistry, Organic Chemistry, Analytical Chemistry.]
- Cazenove, Louis Albert, M.E., 1902, *Theological Seminary, Va.*
 Mechanical Engineering, Chemistry. *M.M.E.*
 (Experimental Engineering, Analytical Chemistry.)
- Chamberlin, Ralph Vary, B.S., (*Univ. of Utah*), 1898, *Salt Lake City, Utah*
 Entomology, Vertebrate Zoology. *Ph.D.*
 [Entomology, Vertebrate Embryology.]

- Clark, Annie Sophia, A.B., (*Acadia Univ.*), 1900,
Bay View, P. E. I., Can.
 Education, English. *A.M.*
 [Pedagogy, English Literature.]
- Coblentz, William Weber, B.S., (*Case School*), 1900, A.M., (*Cornell Univ.*), 1901, *Poland, O.*
 Physics, Mathematics. *Ph.D.*
 [Experimental Physics, Theoretical Physics, Mathematics.]
- Cooley, Erwin Stratton, M.E., 1899, *Plainfield, N. J.*
 Mechanical Engineering. *M.M.E.*
 [Marine Engineering, Experimental Engineering.]
- Cox, Edward Godfrey, A.B., (*Wabash Coll.*), 1899, A.M., (*Cornell Univ.*), 1901, *Cleveland, O.*
 English, History and Political Science. *Ph.D.*
 [English Philology, Mediæval History, Rhetoric.]
- Cutler, Hugh Dysart, A. B., 1902, *Cocagne, N. B., Can.*
 History and Political Science. *A.M.*
 [Finance, Politics.]
- Dann, George Joseph, A.B., (*Union Coll.*), 1896, A.M., (*same*), 1899, *Liberty*
 Education, Latin. *A.M.*
- Dercum, Hermann, B.Arch., 1902. *Cleveland, O.*
 Architecture. *M.S. in Arch.*
 [Design, Life Class.]
- Dodge, Harriet, B.S., 1900, *Buffalo*
 Mathematics, Germanic Languages. *A.M.*
 [Mathematics, German.]
- Drew, Elmer Reginald, B.S., (*Univ. of Cal.*), 1888, *Oakland, Cal.*
 Physics, Mathematics. *Ph.D.*
 [Experimental Physics, Theoretical Physics, Mathematics.]
- Dukes, Richard Gustavus, M.E., 1896, *Ithaca*
 Physics, Mechanical Engineering. *Ph.D.*
 [Experimental Physics, Theoretical Physics, Electrical Engineering.]
- Edminster, Frank Custer, A.B., 1902, *Brooklyn*
 Mathematics. *A.M.*
 [Pure and Applied Mathematics.]
- Ferguson, Alexander McGarven, B.S.H., (*Agr. and Mech. Coll. of Texas*), 1894, M.S., (*same*), 1896, *Austin, Texas*
 Botany. *Ph.D.*
 [Plant Physiology, Systematic Botany, Mycology.]
- Ferree, Clarence Errol, B.S., (*Ohio Wesleyan Univ.*), 1900, A.M., (*same*), 1901, M.S., (*same*), 1902, *Delaware, Ohio*
 Philosophy, Physics. *Ph.D.*
 [Psychology, Physics, History of Philosophy.]

- Fiske, Christabel Forsythe, Ph.B., (*Cornell*), 1898, M.A., (*Columbian Univ.*), 1901, *Washington, D. C.*
 English, History and Political Science. *Ph.D.*
 [English Philology, English Literature, Mediæval History.]
- Fletcher, Hasseltine Reynolds, A.B., (*Vassar*), 1895, *Suffield, Conn.*
 Romance Languages, Latin. *A.M.*
 [French, Latin.]
- Foord, James Alfred, B.S., (*New Hampshire Coll.*), 1898, M.S. in
 Agr., (*Cornell University*), 1902, *Walpole, N. H.*
 Agriculture, Veterinary Medicine. *Ph.D.*
 [Animal Breeding, Dairy Husbandry, Agricultural Bacteriology.]
- Fowler, Roy Edward, B.S., (*Univ. of Wis.*), 1898, *Wauwatosa, Wis.*
 Chemistry, Mathematics, Mineralogy. *Ph.D.*
 [Physical Chemistry, Mathematics, Mineralogy.]
- Foxworthy, Fred William, B.S., (*De Pauw Univ.*), 1899, A.M., (*Cornell University*), 1902, *Greencastle, Ind.*
 Botany, Entomology. *Ph.D.*
 [Botany (Systematic), Entomology, Botany (Histology.)]
- Gaehr, Paul Frederick, A.B., 1902, *Ithaca*
 Physics, Mathematics. *A.M.*
- Gardner, Thomas Mooney, B.M.E., (*Purdue Univ.*), 1892, M.M.E.,
 (*Cornell Univ.*), 1896, *Ithaca*
 Mechanical Engineering, Mathematics. *Ph.D.*
 [Mechanical Engineering, Electrical Engineering, Mathematics.]
- Garvin, Joseph Lemon, B.A., (*Toronto Univ.*), 1892, *Midhurst, Can.*
 Mathematics, Mathematical Physics. *A.M.*
- Geer, William Chauncey, A.B., 1902, *Ithaca*
 Chemistry, Physics. *Ph.D.*
 [Inorganic Chemistry, Physics, Physical Chemistry.]
- Gilmore, John Washington, B.S.A., 1898, *Fort Worth, Texas*
 Agriculture, Botany. *M.S. in Agr.*
- Graton, Louis Caryl, B.S., 1900, *Ithaca*
 Geology. *Ph.D.*
 [Petrography, Economic and Dynamic Geology.]
- Gray, William Dodge, A.B., (*Univ. of Ark.*), 1900, *Little Rock, Ark.*
 Latin, Greek. *A.M.*
- Hale, Mabel, A.B., 1902, *Raleigh, N. C.*
 Latin, English. *A.M.*
- Hankinson, Thomas Leroy, B.S., (*Mich. Agr. Coll.*), 1898, B.S.,
 (*Cornell Univ.*), 1900, *Hillsdale, Mich.*
 Vertebrate Zoology, Entomology, Embryology and Histology. *Ph.D.*

- Harris, Cebern Dodd, B.S., (*No. Car. Coll. of Agr. and Mech. Arts*),
1897, A.M., (*Cornell Univ.*), 1902, *Raleigh, N. C.*
Chemistry, Geology. *Ph.D.*
[Agricultural Chemistry, Analytical Chemistry, Economic Geology.]
- Hebb, Clarence Atkins, A.B., 1902, *Brooklyn*
Philosophy. *A.M.*
[Ethics, Logic and Metaphysics.]
- Hirsch, Elsie Henrietta, *Newark, N. J.*
History and Political Science. *A.M.*
[Mediaeval History, American History.]
- Hirshfield, Clarence Floyd, B.S., (*Univ. of California*), 1902,
San Francisco, Cal.
Mechanical Engineering. *M.M.E.*
[Finance of Engineering and Economics of Manufacturing Establishments, Experimental Engineering.]
- Hopkins, James Bryant, A.B., (*Hamilton Coll.*), 1899, *Bath*
Romance Languages. *A.M.*
[Romance Philology, Romance Literature.]
- Hotchkiss, Willard Eugene, Ph.B., 1897, *Ithaca*
History and Political Science. *Ph.D.*
[Politics, Political Economy, American History.]
- Isham, Helen, *Buffalo*
Chemistry. *A.M.*
[[Inorganic Chemistry, Organic Chemistry.]
- Jameson, Charles Baring, A.B., (*Coll. of City of New York*), 1896,
New York City
Education, History and Political Science. *A.M.*
[Education, Ancient and Mediæval History.]
- Jeffords, Clyde Ray, A.B., (*Univ. of Neb.*), 1898, A.M., (*same*), 1900,
St. Paul, Neb.
Latin, Greek, Classical Archaeology. *Ph.D.*
- Jennings, Fred Huntington, A.B., 1902, *Moravia*
Chemistry, Geology. *Ph.D.*
[Inorganic Chemistry, Sanitary Chemistry, Economic Geology.]
- Johannsen, Oskar Augustus, B.S., (*Univ. of Illinois*), 1894, A.M.,
(*Cornell Univ.*), 1902, *Ithaca*
Entomology, Bacteriology. *Ph.D.*
[Systematic Entomology, Insect Morphology, Bacteriology.]
- Johnston, Harold Eddy, A.B., (*Williams*), 1899, M.E., (*Cornell Univ.*), 1902, *Cohoes*
Mechanical Engineering. *M.M.E.*
[Experimental Engineering, Advanced Machine Design.]

- Johnson, Thomas Carskadon, B.S. in Agr., (*West Va. Univ.*), 1896,
A.M., (*same*), 1900, *Morgantown, W. Va.*
Horticulture, Entomology. *Ph.D.*
[Horticulture, Entomology, Landscape Gardening.]
- Johnston, Oscar Percy, Ph.B., (*Iowa Coll.*), 1897, M.S., (*Iowa State Univ.*), 1902, *Vancleve, Ia.*
Chemistry, Physiology, Histology. *Ph.D.*
[Inorganic Chemistry, Physiology, Histology.]
- Kauffman, Calvin Henry, A.B., (*Harvard*), 1896, *Lebanon, Pa.*
Botany, Chemistry. *Ph.D.*
[Botany (Physiology), Botany (Mycology), Organic Chemistry.]
- Kazmann, Boris, Ingenieur Agricole, (*Montpelier, France*), 1898,
Ithaca
Chemistry, Agriculture. *M.S. in Agr.*
[Agriculture, Chemistry, A study of Potatoes.]
- Kees, Frederica Christiana, *Newark, N. J.*
History and Political Science, Latin. *A.M.*
[Mediaeval History, Latin.]
- *Kehler, Sherman Isaac, C.E., 1894, *Philadelphia, Pa.*
Civil Engineering. *M.C.E.*
[Street Railway, Sanitary Engineering.]
- Knopp, Gideon D, A.B., (*Univ. of Ind.*), 1891, *Anderson, Ind.*
History and Political Science. *A.M.*
[Mediæval and American History.]
- Knowlton, Daniel Chauncey, A.B., 1898, *Ithaca*
History and Political Science. *Ph.D.*
[Modern European History, Mediæval History, American History.]
- Koon, Sidney Graves, M.E., 1902, *Auburn*
Mechanical Engineering. *M.M.E.*
[Naval Architecture, Marine Engineering.]
- *Kunze, Edward Joseph, B.S., (*Cooper Union*), 1899, M.E., (*Cornell University*), 1901, *New York City*
Mechanical Engineering. *M.M.E.*
[Mechanical Engineering, Machine Design.]
- Lang, Sidney Edward, A.B., (*Manitoba Univ.*), 1891, *Virden, Can.*
Education, Logic and Metaphysics. *A.M.*
- Lathrop, Mary Alinda, Ph.B., 1896, *Ithaca*
Romance and Germanic Languages. *A.M.*
[French, German.]
- Lauder, Andrew Gilbert, B.S.A., 1902, *Binghamton*
Chemistry. *Ph.D.*
[Sanitary Chemistry, Physical Chemistry, Toxicology.]

- Lauman, George Nieman, B.S.A., 1897, *Allegheny, Pa.*
Horticulture, Agriculture. *A.M.*
- Lee, Marguerite Thouron, B.S., 1894, *Brooklyn*
Botany, Education. *A.M.*
[Botany, Pedagogy.]
- Lewis, Arthur Scholtz, M.E., [*Stevens Inst.*], 1901, *Brooklyn*
Mechanical Engineering. *M.M.E.*
[Marine Engineering, Naval Architecture.]
- Lieder, Frederick William Charles, A.B., 1902, *Brooklyn*
Germanic Languages, History and Political Science. *A.M.*
[German, History (Middle Ages).]
- *Lloyd, John William, B.S., (*Wheaton Coll.*), 1897, B.S.A., (*Cornell*
Univ.), 1899, *Champaign, Ill.*
Agriculture, Horticulture. *M.S. in Agr.*
- Long, William Henry, Jr., A.B., (*Baylor Univ.*), 1888, A.M., (*Univ.*
of Texas), 1900, *Waco, Texas*
Botany. *Ph.D.*
[Botany (Mycology), Botany (Algae), Botany (Systematic).]
- Lyman, Richard Roswell, B.S. in C.E., (*Univ. of Mich.*), 1895,
Salt Lake City, Utah
Civil Engineering. *M.C.E.*
[Experimental Hydraulics, Theoretical Hydraulics.]
- Lyon, Thomas Lyttleton, B.S. in Agr., 1891, *Lincoln, Nebr.*
Agriculture, Chemistry, Botany. *Ph.D.*
[Agriculture, Agricultural Chemistry, Vegetable Histology.]
- Lyster, Thomas Lee Brent, B.S. (E.E.), (*Univ. of Mich.*), 1901,
Detroit, Mich.
Mechanical Engineering. *M.M.E.*
[Electrical Engineering, Experimental Engineering.]
- McAllister, Addams Stratton, B.S. in E.E., (*Penn. State Coll.*), 1898,
M.M.E., (*Cornell Univ.*), 1901, *Covington, Va.*
Mechanical Engineering, Physics. *Ph.D.*
[Electrical Engineering, Mechanical Engineering, Physics.]
- Macdonald, Murdock Stewart, B.A., (*Dalhousie*), 1900, M.A., (*same*),
1901, *Whycomagh, N. S., Canada*
Philosophy. *Ph.D.*
[Logic and Metaphysics, Ethics, Psychology.]
- McElwain, Mary Belle, A.B., (*Wilson Coll.*), 1895,
Chambersburg, Pa.
Greek, Latin, English Literature. *Ph.D.*
- MacFarland, Helon Brooks, B.S. in E.E., (*Worcester Poly. Inst.*),
1894, *Bucksport, Maine*
Mechanical Engineering. *M.M.E.*
[Experimental Engineering, Thermodynamics.]

- Mac Gillivray, Alexander Dyer, Ph.B., 1900, *Ithaca*
 Embryology, Entomology and Invertebrate Zoology. *Ph.D.*
 [Insect Embryology, Systematic Entomology, Insect Morphology.]
- MacHarg, John Brainerd, C.E., (*Cornell Univ.*), 1893, A.B., (*Hamilton Coll.*), 1900, *Rome*
 Greek, Classical Archaeology and History of Art, Latin. *Ph.D.*
 [Greek, Archaeology, Latin.]
- Mackintosh, Douglass, B.Arch., 1902, *Halifax, N. S., Canada.*
 Architecture. *M.S. in Arch.*
 [Architectural Drawing, Drawing from Life.]
- Manfred, Maud Ethel, A.B., 1900, *Cincinnati, O.*
 Germanic and Romance Languages. *A.M.*
 [German, French.]
- Mann, Paul Blakeslee, A.B., 1902, *Potsdam*
 Vertebrate Zoology, Histology and Embryology. *A.M.*
- Marsh, Lora Almira, Ph.B., (*Hillsdale Coll.*), 1899, *Keuka Park*
 Germanic and Romance Languages. *A.M.*
 [German, French.]
- Martin, James Otis, B.S.A., 1899, *Wilbraham, Mass.*
 Geology, Entomology. *A.M.*
 [Dynamic and Physiographic Geology, Entomology.]
- Matson, George Charlton, B.S., (*Doane Coll.*), 1900, *Strang, Neb.*
 Geology. *Ph.D.*
 [Dynamic Geology and Physical Geography, Economic Geology,
 Mineralogy and Petrography.]
- Merrell, Caroline Wallace, A.B., 1902, *Phila., Pa.*
 Botany. *A.M.*
 [Botany (Morphology), Botany, (Histology of Plants).]
- Meyers, Clarence William, C.E., 1902, *New York City*
 Civil Engineering. *M.C.E.*
 [Steel Constructions and Foundations, Advanced Mechanics.]
- Middleton, Arthur Renwick, A.B., (*Univ. of Rochester*), 1891, *Ithaca*
 Chemistry, Geology. *Ph.D.*
 [Inorganic Chemistry, Analytical Chemistry, Mineralogy.]
- Mills, Frank Smith, A.B., 1902, *Andover, Mass.*
 Geology. *A.M.*
 [Physiography, Economic Geology.]
- Mitchell, Elizabeth, A.B., (*Mount Holyoke*), 1898, *Acworth, N. H.*
 Mathematics. *A.M.*
 [Pure Mathematics, Astronomy.]
- Montgomery, Annie Dawson, B.A., (*Penna. Coll. for Women*), 1902, *Pittsburg, Pa.*
 Philosophy. *Ph.D.*
 [History of Philosophy, Ethics, Psychology.]

- Moore, Alfred Austin, A.B., (*Hamilton Coll.*), 1890, *Clinton*
 Romance and Germanic Languages. *Ph.D.*
 [Romance Philology, Spanish, Middle High German.]
- *Morgan, William Montgomery, B.S.A., 1902, *Seaford, Del.*
 Horticulture, Botany. *M.S. in Agr.*
 [The Development of Fruit Buds, a study of the Pomaceæ.]
- Moore, Clarence Lemuel Elisha, B.Sc., (*Ohio State Univ.*), 1901, A.M.,
 (*Cornell Univ.*), 1902, *Washington C. H., Ohio*
 Mathematics, Physics. *Ph.D.*
 [Pure Mathematics, Applied Mathematics, Theoretical Physics.]
- Moore, Herbert Fisher, B.S., (*New Hampshire Coll.*), 1898, M.E.,
 (*Cornell Univ.*), 1899, *Ithaca*
 Mechanical Engineering. *M.M.E.*
 [Machine Design, Experimental Engineering.]
- Moss, Sanford Alexander, B.S., (*Univ. of Calif.*), 1896, M.S., (*same*)
 1900, *San Francisco, Cal.*
 Mechanical Engineering, Physics, Mathematics. *Ph.D.*
- Muhse, Albert Charles, A.B., (*Indiana Univ.*), 1901, A.M., (*same*),
 1902, *Hebron, Ind.*
 History and Political Science, Philosophy. *Ph.D.*
 [Political Economy and Finance, History, Psychology.]
- Murray, Chester, Ph.B., 1899, *Tottenville*
 Romance Languages, Comparative Philology, Germanic Languages,
Ph.D.
 [Romance Languages, Comparative Philology, German.]
- Nutting, Perley Gilman, A.B., (*Stanford Univ.*), 1897, M.S., (*Univ.*
of Cal.), 1898, *Berkeley, Cal.*
 Physics, Mathematics. *Ph.D.*
 [Theoretical Physics, Experimental Physics, Mathematics.]
- Olmstead, Albert Ten Eyck, A.B., 1902, *Troy*
 History and Political Science. *Ph.D.*
 [Oriental History, Classical History, Mediaeval History.]
- Puig, Louise Margarita, A.B., 1901, *Brooklyn*
 History and Political Science. *Ph.D.*
 [Mediaeval History, English History, American History.]
- Putnam, James William, B.S., (*Illinois Coll.*), 1894, Ph.B., (*same*),
 1897, A.M., (*same*), 1898, *Jacksonville, Ill.*
 History and Political Science. *Ph.D.*
 [American History, Political Economy, Modern European History.]
- Ray, Perley Orman, A.B., (*Univ. of Vermont*), 1898, A.M., (*same*),
 1902, *Burlington, Vt.*
 History and Political Science. *Ph.D.*
 [American History, English Constitutional History, Mediaeval
 History.]

- Reed, Hugh Daniel, B.S., 1899, *Hornellsville*
 Vertebrate Zoology, Histology and Embryology, Entomology. *Ph.D.*
- Reynolds, James Irving, A.B., 1900, *Potsdam*
 Latin, Classical Archaeology, Greek. *Ph.D.*
- Riley, William Albert, B.S., (*De Pauw*), 1897, *Greencastle, Ind.*
 Entomology and General Invertebrate Zoology, Botany. *Ph.D.*
 [Insect Embryology, Insect Histology, Mycology.]
- Robinson, Adelaide King, A.B., (*Allegheny Coll.*), 1889, *Butler, Pa.*
 English, Germanic Languages. *A.M.*
 [English Literature, German.]
- Root, Jay Emery, A.B., (*Harvard Univ.*), 1901, *Somerville, Mass.*
 Chemistry, Geology. *Ph.D.*
 [Physical Chemistry, Inorganic Chemistry, Mineralogy.]
- Rowell, Lucy Agnes, A.B., (*Wellesley Coll.*), 1892, *Waterville*
 Latin, Philosophy. *A.M.*
 [Latin, History of Philosophy.]
- Ruggles, Arthur Gordon, B.S.A., 1901, *Annapolis, N. S., Can.*
 Entomology. *A.M.*
- Russell, Joseph Heywood, A.B., 1901, *Denver, Colo.*
 Chemistry. *Ph.D.*
 [Organic Chemistry, Inorganic Chemistry, Physiological Chemistry.]
- Sabine, George Holland, *Dayton, Ohio.*
 Philosophy, English. *Ph.D.*
 [Logic and Metaphysics, Psychology, English.]
- *Sanderson, Ezra Dwight, B.S., (*Mich. Agr. Coll.*), 1897, B.S.A.,
 (*Cornell Univ.*), 1898, *College Station, Texas.*
 Entomology, Agriculture. *M.S. in Agr.*
 [Economic Entomology, Agricultural Economics.]
- Sandsten, Emil Peter, B.Agr., (*Univ. of Minn.*), 1895, M.S., (*same*),
 1897, *St. Anthony Park, Minn.*
 Horticulture, Forestry, Agriculture. *Ph.D.*
- Schaefer, Edward Franklin, B.S., (*Coll. City of N. Y.*), 1900, M.E.,
 (*Cornell Univ.*), 1902, *New York City*
 Mechanical Engineering, Physics. *M.M.E.*
 [Experimental Engineering, Experimental Physics.]
- Scheffer, Theophilus H, B.S., (*Kansas State Univ.*), 1895,
Delphos, Kans.
 Entomology and Invertebrate Zoology. *A.M.*
- Schlosser, Philip, M.E., (*Columbia Univ.*), 1902, *New York City*
 Mechanical Engineering, Chemistry. *M.M.E.*
 [Mechanical Engineering, Analytical Chemistry.]

- Schoder, Ernest William, B.S., (*Univ. of Washington*), 1900, *Seattle, Wash.*
 Civil Engineering. *Ph.D.*
 [Experimental Hydraulics, Theoretical Hydraulics, Mechanics,
 (Bridges.)]
- Schumard, Oliver Garfield, A.B., (*Mo. State Univ.*), 1902, *Bethany, Mo.*
 Philosophy. *Ph.D.*
 [Metaphysics and Logic, Psychology, Ethics.]
- Seaton, Sara, A.B., (*Wellesley Coll.*), 1896, *Cleveland, Ohio*
 Botany. *A.M.*
 [Botany (Morphology and Embryology), Botany (Mycology.)]
- Shanks, Lewis Edward, Ph.B., 1899, *Greenwich*
 Romance Languages, History and Political Science. *Ph.D.*
 [French, Italian, Mediæval Latin.]
- Shepherd, Earnest Stanley, A.B., 1902, *Remington, Ind.*
 Chemistry, Geology. *Ph.D.*
 [Physical Chemistry, Inorganic Chemistry, Mineralogy.]
- Shipman, Robert Lee, E.E., (*Mo. State Univ.*), 1896, M.E., (*Cornell Univ.*), 1899, *Kansas City, Mo.*
 Mechanical Engineering. *M.M.E.*
 [Mechanical Refrigerations, Finance and Economics of Engineering.]
- Sisam, Charles Herschel, A.B., (*Univ. of Mich.*), 1902, *Sloan, Iowa*
 Mathematics, Physics. *A.M.*
 [Pure Mathematics, Applied Mathematics, Physics.]
- Smith, Charles Edward, Ph.B., (*Albion Coll.*), 1895, A.M., (*Cornell Univ.*), 1902, *Ithaca*
 Geology. *Ph.D.*
 [Stratigraphic Geology, Mineralogy, Physical Geography.]
- Smith, Lillian Scoresby, A.B., (*Syracuse Univ.*), 1891, *Auburn*
 Latin, Greek, Comparative Philology. *Ph.D.*
- Smith, Mary Helen, S.B., (*Oberlin Coll.*), 1887, M.A., (*same*), 1894, *Farmington, Conn.*
 Botany. *A.M.*
 [Botany (Morphology and Embryology).]
- Sparrow, Caroline Lambert, A.B., (*Woman's Coll. of Baltimore*),
 1900, *Richmond, Va.*
 English, History and Political Science. *A.M.*
 [English Literature, Mediæval History.]
- Starks, Sanford Putnam, B.S. (M.E.), (*Univ. of Wis.*), 1902, *Madison, Wis.*
 Mechanical Engineering. *M.M.E.*
 [Experimental Engineering, Thermodynamics.]
- Stevens, Herman Campbell, A.B., (*Univ. of Mich.*), 1901, *Elyria, O.*
 Philosophy, Physiology. *Ph.D.*
 [Psychology, Physiology, History of Philosophy.]

- Stewart, John Pogue, A.B., (*Univ. of Ill.*), 1902, *Biggsville, Ill.*
 Horticulture, Botany. *M.S. in Agr.*
 [Nature Study and General Horticulture, Botany (Physiology.)]
- *Stocking, William Alonzo, B.Agr., (*Storrs Agr. Coll.*), 1895, B.S.A.,
 (*Cornell Univ.*), 1898, *Storrs, Conn.*
 Agriculture. *M.S. in Agr.*
- Stone, Imogen, *Clinton, La.*
 English. *A.M.*
 [Rhetoric, English Philology.]
- Stone, Lulu Mabel, Ph.B., 1895, *Brooklyn*
 Education, English. *A.M.*
 [Pedagogy, English Literature.]
- Stowell, Roy Sherman, A.B., 1902, *Potsdam*
 History and Political Science, English Literature. *A.M.*
 [Mediæval History, English Literature.]
- Strayer, Franklin Reese, A.B., (*Bucknell Coll.*), 1894, *Orange, N. J.*
 Physics, Chemistry. *Ph.D.*
 [Experimental Physics, Theoretical Physics, Chemistry.]
- Teeple, John Edgar, B.S., 1899, *Ithaca*
 Chemistry. *Ph.D.*
 [Organic Chemistry, Inorganic Chemistry, Physical Chemistry.]
- Thom, Charles, A.B., (*Lake Forest Coll.*) 1895, A.M., (*same*), 1897,
 Ph.D., (*Mo. State Univ.*), 1899, *Minonk, Ill.*
 Botany, Horticulture. *Ph.D.*
 [Botany, (Mycology), Horticulture.]
- Thro, William Crooks, B.S.A., 1900, A.M., 1901, *Ithaca*
 Histology and Embryology, Entomology, Pathology and Bacte-
 riology. *Ph.D.*
- *Towl, Forest Milton, C.E., 1886, *Brooklyn*
 Civil Engineering. *M.C.E.*
 [Hydraulics and Pneumatics, Hydraulic Machinery.]
- Tripp, Myron Owen, B.S., (*Valparaiso Coll.*), 1895, A.B., (*Indiana*
Univ.), 1901, *Sodus*
 Mathematics, Education. *A.M.*
 [Mathematics, Pedagogy.]
- Truman, Nathan Elbert, A.B., 1900, A.M., 1901, *Bainbridge*
 Philosophy. *Ph.D.*
 [Logic and Metaphysics, Ethics, Psychology.]
- Van Hook, James M, A.B., (*Indiana Univ.*), 1899, A.M., (*same*),
 1900, *Borden, Ind.*
 Botany. *Ph.D.*
 [Botany (Mycology), Botany (Comparative Morphology and Em-
 bryology), Botany (Physiology).]
- Van Kleeck, Irene Belle, A.B., 1902, *Ithaca*
 History and Political Science, Philosophy. *A.M.*
 [American History, Psychology.]

Wade, Harold Rollins, A.B., (*Harvard*), 1902, *Salem Depot, N. H.*
Chemistry. *Ph.D.*

[Physical Chemistry, Organic Chemistry, Analytical Chemistry.]

Wanke, Paul Gustav, A.B., 1902, *Auburn*
Germanic Languages. *A.M.*

[German Philology, Gothic Old and Middle High German, History
of German Literature.]

Watkins, George Pendleton, A.B., 1899, *King Ferry*
History and Political Science. *Ph.D.*

[Political Economy, Statistics, Politics.]

Waugh, Robert Benjamin, A.B., (*Hobart Coll.*), 1902, *Phelps*
Philosophy. *Ph.D.*

[Logic and Metaphysics, Greek Philosophy, Moral Philosophy.]

Whetzel, Herbert Hice, A.B., (*Wabash Coll.*), 1902, *Avilla, Ind.*
Botany. *Ph.D.*

[Botany (Mycology), Botany (Systematic), Botany (Physiology).]

White, Gershom Franklin, B.S., (*Ohio Univ.*), 1901, *Malta, O.*
Bacteriology, Histology and Embryology, Pathological Histology.
Ph.D.

White, Walter Porter, A.B., (*Amherst*), 1887, A.M., (*same*), 1894,
Ithaca

Physics, Mathematics. *Ph.D.*

[Experimental Physics, Theoretical Physics, Mathematics (Potential
Function and Spherical Harmonics).]

Whitney, Bertha Augusta, A.B., 1899, *Gouverneur*
English, Philosophy. *A.M.*

[English Literature, Ethics.]

Whitney, George Washington Tapley, Ph.B., (*Univ. of Vermont*),
1897, A.M., (*Cornell Univ.*), 1902, *East Bethel, Vt.*

Philosophy. *Ph.D.*

[Logic and Metaphysics, Ethics, History and Philosophy of Religion.]

Willard, Gladys, A.B., 1898, *Brooklyn*
Latin, Germanic Languages. *A.M.*

[Latin, German.]

Williams, Charles Allyn, A.B., (*Univ. of Iowa*), 1899, A.M., (*same*),
1901, *Iowa City, Iowa*

Germanic Languages, Old English, Comparative Philology. *Ph.D.*

Young, John M., B.S. in M.E., (*Fla. A. and M. Coll.*), 1898, M.E.,
(*Cornell Univ.*), 1902, *Ithaca*

Mechanical Engineering, Physics. *M.M.E.*

[Electrical Engineering, Physics.]

Young, John Wesley, Ph.B., (*Ohio State Univ.*), 1899, A.M., (*Cor-
nell Univ.*), 1901, *Columbus, Ohio*

Mathematics, Physics. *Ph.D.*

[Pure Mathematics, Applied Mathematics, Theoretical Physics.]

Graduate Students not in Residence for 1902-1903.

- Borden, Garrick Mallory, B.S., 1899, A.M., 1902, *Tunkhannock, Pa.*
 History and Political Science. *Ph.D.*
 [Modern European History, Mediaeval History, American History.]
- Dutcher, George Matthew, A.B., 1897, *Middletown, Conn.*
 History and Political Science. *Ph.D.*
 [Modern European History, American History, History of the
 Middle Ages.]
- Ferry, Erwin Sidney, B.S., 1889, *Lafayette, Ind.*
 Physics, Mechanical Engineering, Mathematics. *D.Sc.*
- Filkins, Claude William Leroy, C.E., 1893, M.C.E., 1894, *Golden, Col.*
 Civil Engineering, Mathematics. *Ph.D.*
 [Astronomy and Geodesy, Mathematics, Mechanics.]
- Hochbaum, Elfrieda, Ph.B., (*Northwestern Univ.*), 1899, Ph.M.,
 (*same*), 1899, *Aurora*
 Germanic Languages, English. *Ph.D.*
 [German, English.]
- Hulme, Edwin Maslin, A.B., (*Stanford Univ.*), 1897, A.M., (*Cornell*
Univ.), 1902, *Portland, Ore.*
 History and Political Science. *Ph.D.*
 [American History, Modern European History.]
- Kemmerer, Edwin Walter, A.B., (*Wesleyan Univ.*), 1899,
Factoryville, Pa.
 History and Political Science. *Ph.D.*
 [Economics, Social Science, American History.]
- Lipman, Jacob Goodale, B.S., (*Rutgers*), 1898, A.M., (*Cornell Univ.*),
 1900, *Woodbine, N. J.*
 Chemistry, Bacteriology. *Ph.D.*
 [Agricultural Chemistry, Analytical Chemistry, Bacteriology.]
- Orvis, Julia Swift, A.B., (*Vassar Coll.*), 1895, *Wellesley, Mass.*
 History and Political Science. *Ph.D.*
 [Modern European History, American History, English History.]
- Powell, Benjamin, A.B., 1896, A.M., 1898, *Seneca Falls*
 Greek, Latin, Archaeology, *Ph.D.*
- Spinney, Louis Bevier, B.M.E., (*Iowa Agr. Coll.*), 1892, B.S., (*same*),
 1893, *Ames, Iowa*
 Physics, Mathematics. *D.Sc.*
 [Experimental Physics, Mathematical Physics, Mathematics.]
- Stewart, Fred Carlton, B.S., (*Iowa Agr. Coll.*), 1892, M.S., (*same*),
 1894, *Geneva*
 Botany. *Ph.D.*
 [Mycology, Physiology, Histology of Plants.]

Not Candidates for Degrees.

- Blough, Earl, A.B., (*Univ. of Ind.*), 1899, *La Grange, Ind.*
 Mathematics, Civil Engineering, Mechanical Engineering.
- Brummer, Sidney David, A.B., (*City Coll. of N. Y.*), 1899, A.M.,
 (*Columbia*), 1901, *New York City*
 History and Political Science.
 [Mediæval, English, and American History.]
- Dodge, Robert Irving, B.Arch., 1901, *Brooklyn*
 Architecture.
- Edmonston, Clarence Lowrie, M.E., 1902, *Montclair, N. J.*
 Civil Eng., Mech. Eng., Physics.
 [Land Surveying, Eng. Jurisprudence, Eng. Finance, Physics.]
- Fairchild, John Gifford, *Monticello*
 Chemistry and Mechanical Engineering.
- Hadley, Ida Belle, Ph.B., (*Cornell Univ.*), 1889, *Pulaski*
 English, Education.
- Howe, George Maxwell, A.B., (*Univ. of Indiana*), 1894, Ph.D., (*Cornell Univ.*), 1901, *Ithaca*
 Comparative Indo-European Philology.
 [Sanskrit.]
- Kahn, Gertrude Vernon, A.B., (*Woman's Coll. of Baltimore*), 1902, *Baltimore, Md.*
 English Literature.
- Martin, George Washington, B.S., (*Wabash*), 1887, Ph.D., (*Univ. of Indiana*), 1892, *Nashville, Tenn.*
 Entomology.
- Mitchell, Evelyn Groesbuck, A.B., 1902, *East Orange, N. J.*
 Geology.
- Morrison, Archibald Bostwick, Jr., M.E., 1901, *Geneva*
 Mechanical Engineering.
 [Machine Design, Gas Engine Design.]
- Myers, Earl Roy, A.B., (*Adelbert Coll.*), 1896, *Shelby, O.*
 English Literature.
- Pumpelly, Lawrence, B.A., (*Williams*), 1902, *Owego*
 Chemistry.
- Shreve, Richmond Harold, B.Arch., 1902, *Ithaca*
 Architecture.
- Talbot, Mignon, A.B., (*Ohio State Univ.*), 1892, *Columbus, O.*
 Geology.
- Walton, Lee Barker, Ph.B., (*Cornell Univ.*), 1897, A.M., (*Brown Univ.*), 1900, Ph.D., (*Cornell Univ.*), 1902, *Lakewood*
 Entomology.
- Wilcox, Clara Louise, A.B., 1902, *Covert*
 Entomology.

Wilson, Elbert Andrew, B.S., 1900, *Ithaca*
 Chemistry, Physics.
 [Physical Chemistry, Experimental Physics.]

Honorary Fellows.

Boggs, Lucinda Pearl, A.B., (*Univ. of Ills.*), 1894, Ph.D., (*Univ. of
 Halle*), 1900, *Urbana, Ill.*

Philosophy.

[Psychology.]

Schallenberger, Margaret Everitt, A.B., (*Stanford Univ.*), 1898, Ph.D.,
 (*Cornell Univ.*), 1902, *San José, Cal.*

Philosophy.

[Psychology.]

Graduate Students in Undergraduate Courses.

Ackart, Everett Gunner, Ph.B., (<i>Wesleyan Univ.</i>), 1902,	<i>E.E.</i>
Alexander, Durand Charles, Jr., A.B., 1901,	<i>M.E.</i>
Algert, Mabel Cleveland, A.B., (<i>Wilson Coll.</i>), 1902,	<i>A.B.</i>
Aller, Harry Day, B.S., (<i>Rutgers Coll.</i>), 1902,	<i>F.E.</i>
Armstrong, Arthur Soper, A.B., 1902,	<i>M.D.</i>
Baird, Alvin Walter, A.B., (<i>Stanford Univ.</i>), 1901,	<i>M.D.</i>
Baker, Ella Kathleen, B.A., (<i>Belmont Coll.</i>), 1894,	<i>Sp. A.B.</i>
Baker, Linnaeus Earl, B.S. in M.E., (<i>Purdue Univ.</i>), 1897,	<i>M.E.</i>
Baker, Norman Lockyer, A.B., (<i>Rollins Coll.</i>), 1900,	<i>M.E.</i>
Baker, William Charles, B.S.A., 1898,	<i>Painting</i>
Baugh, William Edward, A.B., (<i>Howard Univ.</i>), 1902,	<i>Sp. B.S.A.</i>
Beach, Carl Hoff, B.S., (<i>Iowa Univ.</i>), 1900,	<i>M.E.</i>
Beckary, Albert, Ph.G. (<i>N. Y. Coll. of Phar.</i>), 1898,	<i>M.D.</i>
Beckett, Bergie Barrie, B.A., (<i>Univ. of Miss.</i>), 1902,	<i>E.E.</i>
Bein, Felix Washington, B.S., (<i>City Coll. of N. Y.</i>), 1902,	<i>F.E.</i>
Berry, Maxwell Rufus, Jr., M.E., (<i>Ga. Sch. of Tech.</i>), 1902,	<i>M.E.</i>
Bishop, Ernest Simons, A.B., (<i>Brown Univ.</i>), 1899,	<i>M.D.</i>
Bliss, Russell John, Ph.B., 1885,	<i>LL.B.</i>
Bliss, Theodore, A.B., 1901,	<i>M.D.</i>
Boorstein, Joseph Aaron, A.B., (<i>City Coll. of N. Y.</i>), 1902,	<i>C.E.</i>
Bowler, Robert Bonner, Jr., A.B., (<i>Harvard</i>), 1902,	<i>C.E.</i>
Brogan, John Ernest, B.S., (<i>La. State Univ.</i>), 1902,	<i>E.E.</i>
Brooks, Ernest, Ph.B., (<i>Yale Univ.</i>), 1901,	<i>C.E.</i>
Brown, Frank Donaldson, B.S., (<i>Va. Poly. Inst.</i>), 1902,	<i>M.E.</i>
Brown, Fred Isaac, B.M.E., (<i>Univ. of Ark.</i>), 1902,	<i>M.E.</i>
Brown, John Thompson, B.S., (<i>Va. Poly. Inst.</i>), 1902,	<i>M.E.</i>
Brown, Walter Shelden, A.B., (<i>Alfred Univ.</i>), 1899,	<i>F.E.</i>
Bruno y Dominguez, Jose Antonio, A.B., (<i>Inst. de Puerto Rico.</i>), 1899,	<i>M.E.</i>

Buckingham, Henry Hine, A.B., 1902,	<i>E.E.</i>
Bugbee, Alice Gates, A.B., 1901,	<i>M.D.</i>
Bullard, Marguerite Jane, A.B., 1902,	<i>M.D.</i>
Bunker, Charles Orville Waite, B.Sc., (<i>Univ. of Nebr.</i>), 1901,	<i>M.D.</i>
Card, Ernest Mason, A.B., (<i>Stanford Univ.</i>), 1901,	<i>LL.B.</i>
Chase, Arthur Reynolds, A.B., (<i>Iowa Coll.</i>), 1895,	<i>C.E.</i>
Choate, Edward Stephen, M.E., (<i>Md. Agr. Coll.</i>), 1900,	<i>M.E.</i>
Clapp, John Henry, B.S., (<i>Princeton</i>), 1902,	<i>LL.B.</i>
Clark, Zella Maria, B.A., (<i>Acadia Coll.</i>), 1899,	<i>M.D.</i>
Clement, Thomas Houlten, Jr., B.S. in C.E., (<i>A. and M. Coll. of Texas</i>), 1900,	<i>C.E.</i>
Cleveland, John Augustus, A.B., (<i>Williams Coll.</i>), 1901,	<i>E.E.</i>
Cochrane, Harry Hamilton, B.S., (<i>Trinity Coll.</i>), 1901,	<i>M.E.</i>
Coffin, William Hallock, C.E., (<i>Penn. Mil. Coll.</i>), 1902,	<i>E.E.</i>
Cohen, Rose, M.E., (<i>Bloomsburg Normal</i>), 1885, B.E., (<i>same</i>), 1897,	<i>M.D.</i>
Coxe, Alfred Conkling, Jr., B.A., (<i>Yale Univ.</i>), 1901,	<i>LL.B.</i>
Craig, Joseph Edwin, B.S., (<i>A. and M. Coll. of Miss.</i>), 1901,	<i>C.E.</i>
Craig, Roland D, B.S.A., (<i>Ont. Agr. Coll.</i>), 1898,	<i>F.E.</i>
Crawford, Thomas Frew, B.S., (<i>Phila. Cent. H. S.</i>), 1899,	<i>M.E.</i>
Crofts, George Davis, A.B., 1901,	<i>LL.B.</i>
Danforth, Francis Jenkins, A.B., (<i>Williams</i>), 1900,	<i>M.E.</i>
Darling, Frederic Warren, A.B., 1902,	<i>F.E.</i>
Davenport, Miles Leroy, B.S., (<i>Alfred Univ.</i>), 1899,	<i>D.V.M.</i>
Davies, John Percival, B.S., (<i>Fla. State Coll.</i>), 1895,	<i>M.E.</i>
Dean, George Warren, B.S., (<i>Simpson Coll.</i>), 1901,	<i>C.E.</i>
Dederer, Allsed Anthony, C.E., (<i>Pa. Mil. Coll.</i>), 1902,	<i>LL.B.</i>
Denenholz, Aaron, M.D., (<i>New York Univ.</i>), 1897,	<i>Sp. M.D.</i>
Dickinson, William Elmore, A.B., (<i>William and Mary Coll.</i>), 1901,	<i>E.E.</i>
Dimock, William Wallace, B.Agr., (<i>Conn. Agr. Coll.</i>), 1901,	<i>D.V.M.</i>
Dolan, Paul, A.B., (<i>Fordham Coll.</i>), 1899,	<i>M.D.</i>
Dominguez, Felix Jorge Vidal, A.B., (<i>Inst. de Puerto Rico</i>), 1898,	<i>LL.B.</i>
Drake, Bertrand Francis, B.S., (<i>Princeton Univ.</i>), 1898,	<i>M.D.</i>
Dudley, Gerry Brown, A.B., (<i>Swarthmore Coll.</i>), 1897,	<i>M.D.</i>
Duffy, Edward Allen, B.A., (<i>Univ. of Wash.</i>) 1902,	<i>M.E.</i>
Dumás, Claudio, Jr., A.B., (<i>Matanzas Inst.</i>), 1895,	<i>E.E.</i>
Dunbar, Robert C., A.B., (<i>Monmouth</i>), 1899,	<i>B.Arch.</i>
Durham, Glen Giffen, B.S., (<i>Bucknell Univ.</i>), 1900, M.S., (<i>same</i>), 1902,	<i>M.E.</i>
Dyrlund, Yensen Verty Martin Petraus, B.Ph., (<i>Univ. of Copenhagen</i>), 1897,	<i>M.D.</i>
Elliott, John Earle, A.B., (<i>William and Mary Coll.</i>), 1899,	<i>C.E.</i>
Ellis, Williard Waldo, A.B., 1901,	<i>LL.B.</i>

Faust, John Wesley, B.S., 1900,	<i>M.D.</i>
Fenner, Robert Coyner, B.S., (<i>Phila. Cent. H. S.</i>), 1899,	<i>M.E.</i>
Fetzer, Morrison, B.S., (<i>Davidson</i>), 1901,	<i>M.E.</i>
Fincke, Harry Stark, Ph.G. (<i>N. Y. Coll. of Phar.</i>), 1899,	<i>M.D.</i>
Finkelstein, Morris Robert, A.B., (<i>City Coll. of N. Y.</i>),	<i>M.D.</i>
Fleck, Anthony George, A.B., (<i>St. Francis Xavier</i>), 1902,	<i>M.E.</i>
Fowler, John Scott, B.S., (<i>Phila. Cent. H. S.</i>), 1899,	<i>M.E.</i>
Freidenrich, Oscar W., A.B., (<i>City Coll. of N. Y.</i>), 1899,	<i>Sp. M.D.</i>
Gannon, John Francis, A.B., (<i>Manhattan Coll.</i>), 1899,	<i>M.D.</i>
Genung, Lewell T., A.B., 1897,	<i>M.D.</i>
George, Emma Louise, Ped.B., (<i>Albany Nor. Coll.</i>), 1897,	<i>Sp. A.B.</i>
Gilchrist, Jesse Lewis, M.P., (<i>Bloomsburg Nor.</i>), 1898,	<i>Sp. A.B.</i>
Goehle, Otto Louis, A.B., 1902,	<i>M.D.</i>
Goettsch, Julius, A.B., 1902,	<i>M.E.</i>
Goldwater, Sidney James, B.S., (<i>City Coll. of N. Y.</i>), 1900,	<i>M.E.</i>
Gomez, Richard Alvarey, A.B., (<i>Inst. de Porto Rico</i>), 1898,	<i>LL.B.</i>
Grier, Arthur Jay, B.A., (<i>Monmouth Coll.</i>), 1902,	<i>C.E.</i>
Grossman, William, A.B., (<i>City Coll. of N. Y.</i>), 1900,	<i>M.D.</i>
Guilford, Charles Thomas, B.S., (<i>Wesleyan Univ.</i>), 1897,	<i>E.E.</i>
Hammond, Frederick Hugh, B.L., (<i>Hobart Coll.</i>), 1901,	<i>A.B.</i>
Hansen, Anthony Hans, A.B., 1901,	<i>M.D.</i>
Harman, Herbert Henry, B.A., (<i>Thiel Coll.</i>), 1902,	<i>C.E.</i>
Helm, Harold, LL.B., 1902,	<i>A.B.</i>
Herrick, John Rutherford, B.A., (<i>Amherst Coll.</i>), 1901,	<i>M.D.</i>
Higgins, Samuel, McPherson, A.B., (<i>Brown Univ.</i>), 1894,	<i>Sp. F.E.</i>
Hill, Whiteside, 2nd, B.A., (<i>Williams Coll.</i>), 1901,	<i>E.E.</i>
Holliday, John Salisbury, A.B., (<i>Washington and Jefferson Coll.</i>), 1897, A.M., (<i>same</i>), 1900,	<i>M.E.</i>
Holmes, Aldren Allgood, B.S., (<i>Univ. of N. C.</i>), 1901,	<i>M.E.</i>
Hoobler, Bert Raymond, B.S., (<i>Wabash Coll.</i>), 1901,	<i>M.D.</i>
Hooker, George Haines, A.B., 1902,	<i>LL.B.</i>
Hudson, Andrew James, B.S., (<i>City Coll. of N. Y.</i>), 1901,	<i>M.E.</i>
Hughes, David Arthur, B.L., (<i>Albion</i>), 1893, M.L., (<i>Cornell Univ.</i>), 1895, Ph.D., (<i>same</i>), 1898,	<i>D.V.M.</i>
Hutcheson, Louise, A.B., (<i>Wellesley</i>), 1897,	<i>M.D.</i>
Jacobs, Julius Lilien, B.S., (<i>Univ. of Texas</i>), 1899.	<i>C.E.</i>
Jones, George Francis, A.B., (<i>Biddle Univ.</i>), 1901,	<i>B.S.A.</i>
Jones, Sherman, A.B., (<i>Colgate Univ.</i>), 1901,	<i>M.E.</i>
Katzenstein, William, B.S., (<i>City Coll. of N. Y.</i>), 1901,	<i>M.E.</i>
Kearns, Thomas Joseph, B.A., (<i>Manhattan Coll.</i>), 1902,	<i>M.D.</i>
Kent, Ralph Sherlock, A.B., 1902,	<i>LL.B.</i>
Kephart, Edwin Murray, B.S., (<i>Centre Coll.</i>), 1901,	<i>E.E.</i>
Kernan, Warwick Joseph, A.B., (<i>Georgetown Univ.</i>), 1901,	<i>LL.B.</i>
Kieb, Raymond Francis Charles, A.B., 1902,	<i>M.D.</i>

King, Clifford Marshall, A.B., (<i>Adelbert Coll.</i>), 1901,	C.E.
King, Walter Edwards, A.B., (<i>Wabash Coll.</i>), 1900,	M.D.
Kinne, Jay P., A.B., 1902,	F.E.
Koenig, Harry Lee, B.E., (<i>Tulane Univ.</i>), 1902,	M.E.
Kratzenstein, Hugo, A.B., (<i>Harvard Univ.</i>) 1902,	C.E.
Krumbhaar, Hugh Montgomery, B.E., (<i>Tulane Univ.</i>), 1902,	M.E.
Kuschke, Maud Louise, B.E., (<i>West Chester Normal</i>), 1897, M.E., (<i>same</i>), 1899,	A.B.
Lgadameo, Jenaro Espina, A.B., (<i>Atenes, Manila</i>), 1897,	Sp.F.E.
Leavitt, Clyde, A.B., (<i>Univ. of Mich.</i>), 1901,	F.E.
Lee, William Ross, A.B., (<i>Ham. Coll.</i>), 1900, A.M., (<i>same</i>), 1901,	LL.B.
Lefebore, Emile Joseph, M.A., (<i>St. Stanislaus Coll.</i>), 1900,	M.E.
Licht, Louis Frederick, Ph.G., (<i>Brooklyn Coll. of Phar.</i>), 1898,	M.D.
Lippman, Thomas Charles, Ph.G., (<i>N. Y Coll. of Phar.</i>), 1898,	M.D.
Loeber, Florence, A.B., (<i>Newcomb Coll.</i>), 1898,	LL.B.
Ludlow, Justin Wyman, M.E., (<i>Lewis Inst.</i>), 1901,	C.E.
Ludwig, Robert Francis, A.B., 1900,	M.D.
Lueder, Charles Augustus, D.V.M., 1902,	Sp.B.S.A.
Lyon, Charles Albert, A.B., (<i>Princeton</i>), 1901,	E.E.
McCarthy, John William, A.B., (<i>Holy Cross Coll.</i>), 1901,	M.D.
McColl, Gilbert Beebe, B.A., (<i>Manitoba Coll.</i>), 1902,	E.E.
McCracken, George Lewis, M.E., (<i>West Chester Normal</i>), 1896, B.P., (<i>same</i>), 1899,	A.B.
McDonald, Alan, B.A., (<i>Univ. of Louisville, Ky.</i>), 1901,	M.E.
McGonigal, George Arthur, A.B., 1902,	LL.B.
McIntosh, Robert, Ph.B., (<i>Iowa Coll.</i>), 1901,	M.E.
MacKenzie, David Wallace, B.A., (<i>Dalhousie Univ.</i>), 1900,	M.D.
McMurtrie, William Anderson, Ph.B., (<i>La Fayette</i>), 1901,	M.D.
McNitt, Robert Joseph, A.B., 1902,	E.E.
Makely, Metrah, Jr., A. B., (<i>No. Car. Univ.</i>), 1901,	E.E.
Mann, William Lowry, B.S. in E.E., (<i>Va. Poly. Inst.</i>), 1901,	E.E.
Markham, George Benedict, B.S., (<i>City Coll. of N. Y.</i>), 1902,	F.E.
Martinez, Carlos Alfonso, B.S., (<i>St. Louis Coll.</i>), 1901,	M.E.
Marxnach, Jeopilo, C.E., (<i>Univ. of Spain</i>), 1898,	E.E.
Masters, Frank Harris, A.B., (<i>Indiana Univ.</i>), 1902,	C.E.
Mattoon, Wilbur Reed, A.B., (<i>Wesleyan Univ.</i>), 1899,	Sp. F.E.
Merrill, George Enoch, B.S., (<i>New Hampshire Coll.</i>), 1902,	B.S.A
Miner, George Harry, B.Agr., (<i>Conn. Agr. Coll.</i>), 1899,	D.V.M.
Moran, Harry Powell, B.S., (<i>City Coll. of N. Y</i>), 1901,	M.E.
Moulson, Charles Edward, A.B., (<i>Univ. of Rochester</i>), 1901,	M.E.
Mount, Louis Burgh, A.B., 1902,	M.D.
Niles, Nathaniel Leo, Ph.B., (<i>Brown Univ.</i>), 1899,	M.D.
Norton, Thomas Joseph, A.B., (<i>Holy Cross Coll.</i>), 1901,	M.D.
Ocampo, Vincente, V.S., (<i>Ont. Vet. Coll.</i>), 1903,	Sp. Vet.

O'Day, Sylvester Francis, A.B., 1902,	M.D.
Packard, Daniel Berry, A.B., (<i>Thiel Coll.</i>), 1900,	C.E.
Parker, James Heber, P.D., (<i>Phila. Coll. of Pharmacy</i>), 1902,	A.B.
Parsons, George, A.B., 1902,	E.E.
Payne, Charles Rockwell, A.B., 1902,	M.D.
Pearson, Henry, B.S., (<i>Univ. of Ala.</i>), 1899,	M.D.
Peck, Ellery Newell, A.B., 1902,	M.D.
Pepper, Rebekah Clemantina, B.P., (<i>West Chester Normal</i>), 1902,	Sp. A.B.
Perry, Charles Frederick, S.B., (<i>Worcester Poly. Inst.</i>), 1894,	M.E.
Perry, John Westley, B.S., (<i>Biddle Univ.</i>), 1901,	D.V.M.
Pierce, Paul Leon, B.S., (<i>Chattanooga Nor.</i>), 1901,	C.E.
Pohlman, Augustus Grote, M.D., (<i>Univ. of Buffalo</i>), 1900,	A.B.
Powers, Allan Raymond, B.S., (<i>Univ. of Cal.</i>), 1901,	F.E.
Ray, Anna Elizabeth, A.B., (<i>N. Y. Nor. Coll.</i>), 1899, A.M., (<i>same</i>), 1902,	M.D.
Rex, William Frederick, Ph.G., (<i>N. Y. Coll. of Phar.</i>), 1901,	M.D.
Robertson, Ralph Noyes, S.B., (<i>Colo. Coll.</i>), 1901,	M.E.
Robinson, Emma Crasto, B.S., (<i>St. Lawrence Univ.</i>), 1896,	Sp. A.B.
Rolston, Margaret, B.S., (<i>Chattanooga Normal Univ.</i>), 1899,	A.B.
Rosenthal, Isidor, Ph.G., (<i>N. Y. Coll. of Phar.</i>), 1899,	M.D.
Sanders, Walter Edward, A.B., (<i>Yale Univ.</i>), 1894,	M.E.
Savory, Gerald, B.A., (<i>Cambridge</i>), 1901,	E.E.
Schoonover, Clifford, A.B., (<i>Taylor Univ.</i>), 1901,	M.D.
Schwab, Florance Joseph, M.A., (<i>St. Stanislaus Coll.</i>), 1896,	E.E.
Searing, Benjamin Haff, A.B., 1901,	M.D.
Shalders, Roberto James, C.E., (<i>Mackenzie Coll.</i>), 1902,	M.E.
Shane, Bernard, B.S., (<i>City Coll. of N. Y.</i>), 1902,	C.E.
Shaw, Joseph Duty, B.S., (<i>Univ. of Texas</i>), 1901,	E.E.
Shaw, William Francis, B.S., (<i>Univ. of Texas</i>), 1902,	M.E.
Shedden, John Stephen, B.S., (<i>Univ. of Wyoming</i>), 1900,	M.E.
Smith, Roger Green, B.S., (<i>Columbian</i>), 1901,	A.B.
Sneckenberger, Earl Miner, B.Ph., (<i>Heidelberg Univ.</i>), 1902,	C.E.
Specht, William Henry, D.D.S., (<i>New York C. D.</i>), 1902,	M.D.
Squires, Charles Anthony, A.B., (<i>Williams</i>), 1900,	M.D.
Stanley, Grant, B.S., (<i>Redfield Coll.</i>), 1900,	M.D.
Stearns, Ellis Johnson, B.E., (<i>Tulane Univ.</i>), 1902,	M.E.
Stigner, Pier, A.B., (<i>Lund Univ., Sweeden</i>), 1889,	Sp. M.D.
Street, George Tatum, A.B., (<i>Denison Univ.</i>), 1900,	M.E.
Stroud, Bert Brenette, B.S., 1891, D.Sc., 1895,	D.V.M.
Taylor, Royden Johnston, B.E., (<i>Indiana Pa. Normal</i>), 1896,	C.E.
Teller, Chester Jacob, A.B., (<i>Phila. Cent. H. S.</i>), 1901,	A.B.
Teller, Leopold Hirsh, B.S. in E., (<i>Phila. Cent. H. S.</i>), 1902,	LL.B.
Thompson, Carrie Wilber, A.B., 1902,	M.D.
Thompson, Hoxie Harry, B.S., (<i>Austin Coll.</i>), 1901.	C E

- Thorpe, Walter Franklin, B.Agr., (*Conn. Agr. Coll.*), 1901, *B.S.A.*
 Tiffany, John Blakeslee, B.S.A., 1901, *D.V.M.*
 Torian, Thomas Richard, A.B., (*Hampden Sidney Coll.*), 1897, B.S.,
 (*same*), 1897, *E.E.*
 Torres, Antonio Constacio, B.A., (*Ateneo, Manila*), 1901, *LL.B.*
 Travieso, Martin, A.B., (*Instituto de Puerto Rico*), 1898, *LL.B.*
 Tunison, Richard Guy, Ph.G., (*N. Y. Coll. of Phar.*), 1901, *M.D.*
 Tyng, Elizabeth McJimsey, B.S., (*N. Y. Nor. Coll.*), 1894, *A.B.*
 Veser, Lucius Otto, B.A., (*Univ. of Wash.*), 1899, *E.E.*
 Viertels, Ephraim, B.S., (*Cooper Union Inst.*), 1902, *C.E.*
 Walker, Fernando Murray, B.A., (*National Coll. of Cordoba*), 1900,
 E.E.
 Warner, Austin McRaven, A.B., (*S. W. Presbyterian Univ. of Tenn.*),
 1901, *M.E.*
 Warner, Earle Spear, B.L., (*Hobart Coll.*), 1902, *LL.B.*
 Warren, George Frederick, Jr., B.Sc., (*Univ. of Nebr.*), 1897, *B.S.A.*
 Way, Cassius, B.Agr., (*Conn. Agr. Coll.*), 1899, *D.V.M.*
 Welborn, Edgar Calvert, A.B., (*Indiana Univ.*), 1897, *M.E.*
 Wernicke, Carl Leopold, B.E., (*Tulane Univ.*), 1902, *M.E.*
 Whipple, Cyrus Avery, B.Ped., (*Univ. of Wash.*), 1899, A.B., (*same*),
 1899, *E.E.*
 White, Wilfred Wallace, M.S., (*Penn. Coll.*), 1900, *F.E.*
 Wight, Herbert, A.B., (*Union Coll.*), 1901, *LL.B.*
 Williams, Arthur Shaler, A.B., (*Yale Univ.*), 1901, *M.E.*
 Williams, Lee, B.E.E., (*Mont. State Coll.*), 1902, *E.E.*
 Wilson, John Bailey, B.S., (*Phila. Cent. H. S.*), 1902, *C.E.*
 Wineburgh, Charles, B.S., (*City Coll. of New York*), 1902, *M.E.*
 Wismar, William Frederic, A.B., (*Univ. of Rochester*), 1901, *M.D.*
 Wood, Josh, B.S., (*Baylor Univ.*), 1901, *B.S.A.*
 Wright, Floyd Robins, A.B., 1898, *M.D.*
 Wright, Moses James, A.B., 1900, *LL.B.*
 Wyvell, Manton Marble, A.B., 1901, *LL.B.*
 Zeiner, Eugene Jerome, Ph.G., (*New York Coll. of Phar.*), 1896,
 M.D.
 Zucker, Morris, Ph.G., (*New York Coll. of Phar.*), 1897, *M.D.*

UNDERGRADUATES.

The figures 1, 2, 3, 4, indicate Freshman, Sophomore, Junior, and Senior years, respectively, in the four year courses. In the three year course in Law, 1, Jr., and Sr., indicates first year, Junior, and Senior respectively. In the three year course in Veterinary Medicine, 1, 2, and 3, indicate first, second, and third year, respectively. Special Students are not classified by years.

Ackart, Everett Gunner, Ph. B.,	<i>Schaghticoke,</i>	2 Elect. Eng.
Acker, William Lewis,	<i>Scranton, Pa.,</i>	2 Mech. Eng.
Acklin, James Montgomery,	<i>Toledo, O.,</i>	1 Mech. Eng.
Adair, Craig,	<i>Wilmington, Del.,</i>	1 Mech. Eng.
Adamopoulos. Adam Constantine,	<i>Smyrna, Turkey,</i>	1 Agr.
Adams, Clarence Smith,	<i>Warsaw,</i>	3 Mech. Eng.
Adams, Cuyler Culver,	<i>Duluth, Minn.,</i>	2 Mech. Eng.
Adams, Francis Spearman,	<i>Sharon, Pa.,</i>	2 Mech. Eng.
Adams, Thomas Dickinson,	<i>New York City,</i>	4 Arts
Adsit, Marie Clifton,	<i>New Scotland,</i>	2 Arts
Agate, John Herbert,	<i>Pittsford,</i>	Sr. Law
Aitken, Elizabeth Mary Anderson,	<i>Woodstock, Vt.,</i>	4 Arts
Akin, Benjamin Rosell,	<i>Moravia,</i>	Sr. Law
Albones, Arthur William,	<i>Frankfort,</i>	3 Med. (N. Y. C.)
Albrecht, Maximilian Claude,	<i>Lowville,</i>	1 For.
Alcott, Arthur David,	<i>Troy,</i>	1 Arts
Aldrich, Wickham Hurd,	<i>Cleveland, O.,</i>	3 Mech. Eng.
Alexander, Durand Charles, Jr., A. B.,	<i>Ithaca,</i>	3 Mech. Eng.
Alexander, Elizabeth Walton,	<i>Ithaca,</i>	Sp. Arts
Alexander, Katharine,	<i>Ithaca,</i>	3 Arts
Algert, Mabel Cleveland, A. B.,	<i>Watsonstown, Pa.,</i>	3 Arts
Allan, Edwin Phipps,	<i>New York City,</i>	2 Mech. Eng.
Allen, Amos Green,	<i>Chicago, Ill.,</i>	1 Mech. Eng.
Allen, Carl George,	<i>Williamsport, Pa.,</i>	1 Mech. Eng.
Allen, Carrie Louise,	<i>Buffalo,</i>	3 Arts
Allen, Charles Frederick,	<i>Dunkirk,</i>	1 Law
Allen, Flora Keppel,	<i>Ithaca,</i>	3 Arts
Allen, Francis Ramsey,	<i>Worcester, Mass.,</i>	3 Mech. Eng.
Allen, Harris Calvin,	<i>Lima,</i>	3 Arts
Allen, Margaret May,	<i>Ithaca,</i>	1 Arts
Allen, Mary,	<i>Millport,</i>	4 Arts

Allen, William Daniel,	<i>Buffalo,</i>	1 Elect. Eng.
Allen, William Gordon,	<i>Gouverneur,</i>	4 Elect. Eng.
Allen, William Paul,	<i>Brooklyn,</i>	2 Arts
Aller, Harry Day, B.S.,	<i>Gladstone, N. J.,</i>	3 Forestry
Aller, Howard Lewis,	<i>New York City,</i>	1 Mech. Eng.
Allis, Frank Coy,	<i>Holley,</i>	Sr. Law
Allison, Isaac, Jr.,	<i>Canisteo,</i>	Sr. Law
Almgren, Ebba Elizabeth,	<i>Stockholm, Sweden,</i>	1 Medicine
Althaus, Edward, Jr.,	<i>New York City,</i>	2 Arts
Anderson, Clark Taggart,	<i>Wooster, Ohio,</i>	1 Mech. Eng.
Anderson, Frank Gibbs,	<i>Auburn,</i>	1 Mech. Eng.
Anderson, Hale,	<i>Montclair, N. J.,</i>	1 Law
Andrews, Don Ethelbert,	<i>Puzzler, Col.,</i>	1 Civil Eng.
Andrews, Frederick Willment,	<i>Millbrook,</i>	1 Veterinary
Andrews, Grace,	<i>Brooklyn,</i>	4 Arts
Andrews, Harry Isaac,	<i>Ithaca,</i>	2 Medicine
Andrews, Josephine Adair,	<i>Ithaca,</i>	2 Arts
Andrews, Nathaniel Reeve,	<i>Norwich,</i>	3 Elect. Eng.
Andrews, William Thomas,	<i>Buffalo,</i>	4 Arts
Andrus, Grace Mead,	<i>Tacoma, Wash.,</i>	4 Arts
Annin, William Rigney,	<i>Bridgeport, Conn.,</i>	1 Mech. Eng.
Apgar, Clara Selkreg,	<i>Ithaca,</i>	2 Arts
Aranow, Harry,	<i>New York City,</i>	3 Med. (N.Y.C.)
Arends, Katharine,	<i>New York City,</i>	1 Medicine
Argetsinger, James Cameron,	<i>Burdett,</i>	1 Arts
Armitage, Aaron Anthony,	<i>Troy,</i>	1 Law
Armstrong, Arthur Soper, A.B.,	<i>Rome,</i>	3 Med. (N. Y. C.)
Armstrong, Ervin Scott,	<i>Lock Haven, Pa.,</i>	1 Mech. Eng.
Armstrong, Walter Jonas,	<i>Rome,</i>	2 Mech. Eng.
Arnold, Lawrence,	<i>Brooklyn,</i>	Sp. Forestry
Arnow, Isaac,	<i>New York City,</i>	1 Med. (N. Y. C.)
Aronson, Harry,	<i>Brooklyn,</i>	1 Med. (N. Y. C.)
Arthur, Leon Leroy,	<i>East Steuben,</i>	1 Law
Arthur, William Morris,	<i>East Steuben,</i>	1 Law
Ashburner, Elizabeth Atkins,	<i>Media, Pa.,</i>	4 Arts
Ashburner, Lesley,	<i>Media, Pa.,</i>	1 Civil Eng.
Ashcraft, Alan Emerson,	<i>Chicago, Ill.,</i>	4 Mech. Eng.
Ashe, Tom Jefferys,	<i>Yorkville, So. Car.,</i>	4 Mech. Eng.
Ashley, Frederick Carl,	<i>Honeoye,</i>	2 Civil Eng.
Atherton, Herbert Parkhurst,	<i>Holyoke, Mass.,</i>	4 Arch.
Atkin, Ernest George,	<i>Patchogue,</i>	3 Arts
Atwater, Henry,	<i>East Orange, N. J.,</i>	1 Mech. Eng.

Atwater, Leslie Starr,	<i>Ithaca,</i>	3 Civil Eng
Atwater, Ralph Willis,	<i>Atwater,</i>	3 Med. (N. Y. C.)
Atwood, William Bartlett,	<i>Beaver, Pa.,</i>	1 Civil Eng.
Auerbach, Frederic Stanley,	<i>Boston, Mass.,</i>	1 Arts
Austell, Erle Lochrane,	<i>Baltimore, Md.,</i>	Jr. Law
Averell, Chester Dewey,	<i>Ogdensburg,</i>	Sp. Agriculture
Avery, Harry Bain,	<i>West Taghkanic,</i>	2 Medicine
Avery, Harold Field,	<i>Ithaca,</i>	3 Arts
Axtell, Percy J,	<i>Deposit,</i>	1 Veterinary
Ayer, Lynn Francis,	<i>Angola,</i>	Sp. Agriculture
Babson, Rea Edwin,	<i>South Orange, N. J.,</i>	2 Mech. Eng.
Backus, Newell D,	<i>Union Springs,</i>	1 Veterinary
Backus, Robert Erle,	<i>Jamestown,</i>	1 Arch.
Bacon, Claude Benoni,	<i>North Lansing,</i>	1 Civil Eng.
Badger, Henry Franklin, Jr.,	<i>Kalamazoo, Mich.,</i>	3 Civil Eng.
Baer, Julius Bernard,	<i>Oil City, Pa.,</i>	Jr. Law
Bagg, Egbert, Jr.,	<i>Utica,</i>	1 Arch.
Baggerly, Herman Douglass,	<i>Clifton Springs,</i>	2 Elect. Eng.
Bailey, Harold Capron,	<i>Buffalo,</i>	4 Med. (N. Y. C.)
Bailey, Margaret Lewis,	<i>Wellsboro, Pa.,</i>	4 Arts
Bailey, Orrin,	<i>Manasquan, N. J.,</i>	Sp. Mech. Eng.
Baird, Alvin Walter, A.B.,	<i>Portland, Ore.,</i>	3 Med. (N. Y. C.)
Baird, Clarence Henry,	<i>Holyoke, Mass.,</i>	1 Elect. Eng.
Baker, Clarence Prichard,	<i>Lockport,</i>	1 Law
Baker, Ella Kathleen, B.A.,	<i>Ft. Smith, Ark.,</i>	Sp. Arts
Baker, Frank James,	<i>Brasher Falls,</i>	2 Veterinary
Baker, James Nelson,	<i>Owego,</i>	1 Elect. Eng.
Baker, Linnaeus Earl, B.S. in M.E.,	<i>Otterbein, Ind.,</i>	4 Mech. Eng.
Baker, William Charles, B.S.A.,	<i>Ithaca,</i>	1 Painting
Baker, Norman Lockyer, A.B.,	<i>Winter Park, Fla.,</i>	2 Elect. Eng.
Baker, Ross Lee,	<i>Greenwood,</i>	1 Elect. Eng.
Baldwin, Charles Reuben,	<i>Volney Centre,</i>	1 Veterinary
Baldwin, Harry Clark,	<i>Ithaca,</i>	1 Law
Baldwin, Wesley Manning,	<i>Brooklyn,</i>	3 Med. (N. Y. C.)
Baldwin, William Wright, Jr.	<i>Burlington, Ia.,</i>	2 Arts
Baldwin, Winifred Montgomery,	<i>Springfield, Mo.,</i>	2 Mech. Eng.
Ball, Sylvia Ernestine,	<i>Warren, Pa.,</i>	1 Arts
Ballinger, Philippi Fazio,	<i>Washington, D. C.,</i>	3 Elect. Eng.
Banker, Ernest Ensign,	<i>Ft. Edwards,</i>	4 Med. (N. Y. C.)
Banks, Percy Edward,	<i>Cahoonzie</i>	3 Med. (N. Y. C.)
Banning, Archibald Tanner, Jr.,	<i>Mt. Vernon,</i>	3 Arts
Barber, Albert Harry,	<i>Chicago, Ill.,</i>	1 Arts

Barber, George Lynn,	<i>West Chazy,</i>	Sp. Agr.
Barbour, Anna Violet,	<i>Indianapolis, Ind.,</i>	1 Arts
Barbour, Louise Blanche,	<i>Indianapolis, Ind.,</i>	2 Arts
Bard, Francis Norwood,	<i>Chicago, Ill.,</i>	2 Mech. Eng.
Barie, Charles Edward,	<i>Erie, Pa.,</i>	3 Arts
Barker, Alden Frank,	<i>Clayton,</i>	1 Mech. Eng.
Barlow, Warren Stanley,	<i>Marcellus,</i>	1 Law
Barney, Charles Ray,	<i>Bennington, Vt.,</i>	1 Elect. Eng.
Barnhart, Clarence Davis,	<i>Washington, D. C.,</i>	2 Mech. Eng.
Barnum, Victor Bayard,	<i>Centreville,</i>	1 Mech. Eng.
Barroll, Henry Edward,	<i>Chicago, Ill.,</i>	2 Mech. Eng.
Barron, John Hall,	<i>Nunda,</i>	1 Agriculture
Barsky, Michael Halpern,	<i>New York City,</i>	1 Med. (N. Y. C.)
Barth, Ira Steiner,	<i>Atchinson, Kan.,</i>	3 Mech. Eng.
Bartlett, Henry Griffith,	<i>Baltimore, Md.,</i>	4 Mech. Eng.
Barton, Robert Charles,	<i>Seattle, Wash.,</i>	1 Mech. Eng.
Bascome, George Lightbourne,	<i>Elmira,</i>	2 Mech. Eng.
Bates, Ellis Abram,	<i>Caroline,</i>	2 Arts
Bates, Harry H.,	<i>Joliet, Ill.,</i>	1 Mech. Eng.
Bates, James Lawrence,	<i>Lima,</i>	4 Mech. Eng.
Baugh, William Edward, A.B.,	<i>Tuscaloosa, Ala.,</i>	Sp. Agriculture
Baum, Frank Joslyn,	<i>Chicago, Ill.,</i>	1 Law
Baum, Ike,	<i>Uniontown, Pa.,</i>	4 Elect. Eng.
Baumgardner, John Andrew,	<i>Lancaster, Pa.,</i>	2 Mech. Eng.
Baur, Frederick John,	<i>Toledo, O.,</i>	1 Mech. Eng.
von Bayer, William Hector,	<i>Ithaca,</i>	3 Forestry
Bayne, George Henry, Jr.,	<i>Ithaca,</i>	3 Mech. Eng.
Beach, Carl Hoff, B.S.,	<i>Clarion, Ia.,</i>	4 Mech. Eng.
Beals, Edward Duncan,	<i>Orange, Cal.,</i>	3 Elect. Eng.
Beardslee, Kenneth Phelps,	<i>Syracuse,</i>	3 Elect. Eng.
Beardslee, Ralph Prescott,	<i>Cleveland, O.,</i>	1 Arts
Beardsley, Bessie Eumons,	<i>Ithaca,</i>	4 Arts
Beatty, William Chambers,	<i>Beatty, Pa.,</i>	4 Mech. Eng.
Beckary, Albert, Ph.G.,	<i>New York City,</i>	2 Med. (N. Y. C.)
Becker, Damas Brough,	<i>West Berne,</i>	2 Medicine
Becker, Henry Clinton,	<i>Clinton, Mass.,</i>	3 Med. (N. Y. C.)
Becker, Neal Dow,	<i>Jamestown,</i>	Jr. Law
Beckett, Bergie Barrie, B.A.,	<i>West Point, Miss.,</i>	3 Elect. Eng.
Beckwith, Bessie Eugenia,	<i>Ithaca,</i>	4 Arts
Beckwith, Henry Clay,	<i>Ithaca,</i>	4 Mech. Eng.
Bedford, Alletta Langdon,	<i>Haddonfield, N. J.,</i>	4 Arts, (2 Med.)
Beebe, Charles Nelson,	<i>Hammondsport,</i>	2 Elect. Eng.

Beebe, Lawrence Leverne,	<i>Alpine,</i>	2 Mech. Eng.
Beebe, Ward Losee,	<i>Ithaca,</i>	2 Veterinary
Beecher, Louis Allen,	<i>Derby, Conn.,</i>	4 Mech. Eng.
Beesley, Frank Mills,	<i>Chicopee, Mass.,</i>	1 Civil Eng.
Behnken, Henry Emile,	<i>Brooklyn,</i>	2 Arts
Beidler, Joseph Arthur, Jr.,	<i>Willoughby, O.,</i>	4 Mech. Eng.
Bein, Felix Washington, B.S.,	<i>New York City,</i>	2 Forestry
Beirne, Hugh Matthew,	<i>New Haven, Conn.,</i>	2 Mech. Eng.
Bell, George Arthur,	<i>Rome,</i>	1 Agriculture
Bell, Harold I,	<i>Ithaca,</i>	2 Civil Eng.
Bell, Nelson John,	<i>Dayton, O.,</i>	1 Civil Eng.
Bellinger, Daniel Lawrence,	<i>Ithaca,</i>	2 Elect. Eng.
Bellows, Brian Chandler,	<i>Richmond,</i>	1 Elect. Eng.
Beman, Myron Clark,	<i>Binghamton,</i>	1 Mech. Eng.
Benedict, Albert Newell,	<i>Yonkers,</i>	2 Med. (N. Y. C.)
Benjamin, Marion,	<i>Cleveland, O.,</i>	2 Architecture
Bennet, Orville Green, Jr.,	<i>New York City,</i>	3 Mech. Eng.
Bennett, Ray,	<i>Geneva,</i>	2 Arts
Bennett, Robert Palmiter,	<i>Buffalo,</i>	3 Arts
Bentley, Alexander Norton,	<i>Rochester,</i>	3 Elect. Eng.
Bentley, Harry Seymour,	<i>Ithaca,</i>	1 Law
Bergmann, Henry Fred,	<i>Buffalo,</i>	1 Mech. Eng.
Berliner, Leopold Henry,	<i>New York City,</i>	2 Med. (N. Y. C.)
Bernfeld, Samuel Joachim,	<i>New York City,</i>	3 Med. (N. Y. C.)
Berry, Edgar Fanning,	<i>Auburndale, Mass.,</i>	2 Arts, (1 Med.)
Berry, Maxwell Rufus, Jr., M E.,	<i>Atlanta, Ga.,</i>	4 Mech. Eng.
Berry, Morphy Edison,	<i>Beechmont, Ky.,</i>	1 Mech. Eng.
Berry, Romeyn,	<i>Hudson,</i>	2 Arts
Berryman, Wilson Garfield,	<i>New York City,</i>	2 Mech. Eng.
Bertini, Amedeo Augustus,	<i>New York City,</i>	1 Arts
Bessey, Mabelle Abbot,	<i>Brooklyn,</i>	1 Arts
Best, Ernest Peter,	<i>Kinderhook,</i>	Sp. Agriculture
Betts, Norman DeWitt,	<i>Wilton, Conn.,</i>	4 Mech. Eng.
Bickelhaupt, Miles,	<i>Redwood,</i>	4 Elect. Eng.
Bidwell, Peter Swartout,	<i>Buffalo,</i>	3 Architecture
Bigler, William, Jr.,	<i>Clearfield, Pa.,</i>	1 Civil Eng.
Bilderbeck, George Leslie,	<i>So. Hartwick,</i>	1 Civil Eng.
Billwiller, Charles James, Jr.,	<i>Brooklyn,</i>	2 Mech. Eng.
Bingham, Nellie Holmes,	<i>Santa Clara,</i>	2 Arts
Bingham, Samuel Almeron,	<i>Chicago,</i>	2 Mech. Eng.
Binkley, Ethelyn Felice,	<i>Spokane, Wash.,</i>	3 Arts
Birchenough, Harry,	<i>Paterson, N. J.,</i>	2 Arts

Bischoff, Ernest William,	<i>New York City,</i>	Sr. Law
Bishop, Ernest Simons, A.B.,	<i>Providence, R. I.,</i>	1 Med. (N. Y. C.)
Bishop, Harriet Kilbourne,	<i>Norwich, Conn.,</i>	4 Arts
Bishop, Wheeler Scott,	<i>Ithaca,</i>	2 Arts
Bishop, William Smart,	<i>Savannah,</i>	1 Elect. Eng.
Black, Charles Willard,	<i>Cincinnati, O.,</i>	3 Mech. Eng.
Black, Hampton,	<i>Montgomery, Ala.,</i>	1 Mech. Eng.
Black, Roy Harry,	<i>San José, Cal.,</i>	4 Elect. Eng.
Blackwell, Howard Clayton,	<i>Brooklyn,</i>	2 Elect. Eng.
Blahd, Mose Emmet,	<i>Cleveland, O.,</i>	1 Medicine
Blair, Edward Johnson,	<i>Chicago, Ill.,</i>	2 Mech. Eng.
Blair, Frank Ross,	<i>Brooklyn,</i>	4 Arts
Blair, John Cust,	<i>New Castle, Pa.,</i>	1 Civil Eng.
Blakeslee, Charles Albert,	<i>Coal Glen, Pa.,</i>	4 Civil Eng.
Blakeslee, Edward Levi,	<i>Menands,</i>	2 Mech. Eng.
Blakeslee, Irvin,	<i>Coal Glen, Pa.,</i>	2 Elect. Eng.
Blakeslee, Wilbur Bunnell,	<i>Plantsville, Conn.,</i>	4 Mech. Eng.
Blatch, Nora Stanton,	<i>Ithaca,</i>	1 Civil Eng.
Blauvelt, Jessie Annelia,	<i>Fort Plain,</i>	2 Arts
Bleakley, Francis William,	<i>Peekskill,</i>	Jr. Law
Bliss, Russell Joseph, Ph.B.,	<i>Peterboro,</i>	1 Law
Bliss, Theodore, A.B.,	<i>Troy,</i>	3 Med. (N. Y. C.)
Block, Alexander,	<i>New York City,</i>	3 Arts
Block, Arthur Joseph,	<i>Buffalo,</i>	1 Arts
Block, Siegfried,	<i>Brooklyn,</i>	2 Med. (N. Y. C.)
Bloomer, Cornelius Du Bois,	<i>Marlboro,</i>	4 Elect. Eng.
Bloomingdale, Gertrude,	<i>Alabama,</i>	3 Arts
Blount, Harold Bruce,	<i>New York City,</i>	2 Arts
Blount, Henry Fitch, Jr.,	<i>Washington, D. C.,</i>	4 Arts
Blount, Walter Eames,	<i>Washington, D. C.,</i>	2 Arts
Blum, Charlotte,	<i>New York City,</i>	1 Medicine
Board, Ben Curry,	<i>Chester,</i>	1 Medicine
Boardman, Emily Stella,	<i>Trumansburg,</i>	4 Arts
Boegehold, Carl Winter,	<i>Mt. Vernon,</i>	1 Mech. Eng.
Boesch, Clarence Edwin,	<i>Washington, D. C.,</i>	2 Civil Eng.
Boettiger, Carl,	<i>Long Island City,</i>	4 Med. (N. Y. C.)
Bogert, Clinton Lathrop,	<i>Binghamton,</i>	2 Civil Eng.
Bogert, George Gleason,	<i>Ithaca,</i>	1 Arts
Boldt, George Charles, Jr.,	<i>New York City,</i>	2 Arts
Bolles, Camilla Warner,	<i>Norwich,</i>	4 Arts
Bonner, John Richard Worthington,	<i>Cooperstown,</i>	3 Arts
Boone, Herbert Stanley,	<i>Cincinnati, O.,</i>	4 Arts

Boorstein, Joseph Aaron, A.B.,	<i>New York City,</i>	2 Civil Eng.
Bope, Harold Spencer,	<i>Pittsburg, Pa.,</i>	3 Mech. Eng.
Borden, John Francis,	<i>Tunkhannock, Pa.,</i>	3 Mech. Eng.
Borst, Guernsey John,	<i>Seward,</i>	4 Arts
Bosche, Frederick Darlington,	<i>Buffalo,</i>	1 Mech. Eng.
Bossinger, Ernest Lafayette,	<i>Huutington, W. Va.,</i>	3 Mech. Eng.
Bosworth, Edwin Mahlon,	<i>Pittsburg, Pa.,</i>	2 Mech. Eng.
Boughton, Judson Hartwell,	<i>Rochester,</i>	4 Mech. Eng.
Bourne, Ralph Hinckley,	<i>Cleveland, O.,</i>	3 Mech. Eng.
Bower, John Gosh, Jr.,	<i>Hagerstown, Md.,</i>	1 Arts
Bowes, Thomas David, Jr.,	<i>Philadelphia, Pa.,</i>	1 Mech. Eng.
Bowler, Robert Bonner, Jr., A.B.,	<i>Cincinnati, O.,</i>	3 Civil Eng.
Bowman, William Law,	<i>Pittston, Pa.,</i>	3 Civil Eng.
Bowser, Wilfred,	<i>Anchorage, Ky.,</i>	1 Elect. Eng.
Boyce, Irvan Albert,	<i>Hubbardsville,</i>	2 Elect. Eng.
Boyd, Donald Leggo,	<i>Richmond, Va.,</i>	3 Mech. Eng.
Boyer, Russell Lanson,	<i>Brooklyn,</i>	4 Mech. Eng.
Boynton, Albert Beeber,	<i>Sewaren, N. J.</i>	4 Elect. Eng.
Bozenhardt, William Frederick,	<i>New York City,</i>	2 Med. (N. Y. C.)
Brady, Charles Philip,	<i>Buffalo,</i>	3 Arts
Brady, George Edward Drullard,	<i>Buffalo,</i>	4 Arts
Brainard, Albert Sereno,	<i>East Hartford, Conn.,</i>	2 Civil Eng.
Braman, James Lloyd,	<i>Plattsburg,</i>	1 Law
Brandow, Emory Elmer,	<i>Catskill,</i>	1 Civil Eng.
Branner, Maxwell,	<i>New York City,</i>	1 Med. (N. Y. C.)
Braucher, Howard Solomon,	<i>Ithaca,</i>	4 Arts
Braun, Arthur Peter,	<i>Toledo, O.,</i>	1 Civil Eng.
Brauner, Julius Frederick, Jr.,	<i>Ithaca,</i>	2 Civil Eng.
Braunworth, Percy Lewis,	<i>Ithaca,</i>	1 Civil Eng.
Brautigam, Elisabeth Randall,	<i>East Orange, N. J.,</i>	1 Arts
Braymer, Daniel Harvey,	<i>Hebron,</i>	1 Arts
Brayer, Nelson Garfield,	<i>Rochester,</i>	2 Mech. Eng.
Breed, Ernest,	<i>Lyndonville,</i>	Jr. Law
Breger, Copy Levinthal,	<i>Brooklyn,</i>	1 Arts
Brewster, Alfred Alexander, Jr.,	<i>Akron, O.,</i>	2 Mech. Eng.
Brewster, Ethelyn,	<i>Marion,</i>	1 Arts
Brewster, Percy Douglas,	<i>East Orange, N. J.,</i>	1 Arts
Brinckerhoff, Horace Everett,	<i>Mt. Vernon,</i>	1 Forestry
Brinkerhoff, Albert David,	<i>Springfield, Ill.,</i>	2 Elect. Eng.
Brinkerhoff, Charles Fuller, Jr.,	<i>New York City,</i>	2 Mech. Eng.
Brinkley, Ben Hampton,	<i>Louisville, Ky.,</i>	1 Mech. Eng.
Brinley, Henry DeNyse,	<i>Long Branch, N. J.,</i>	3 Arts

Bristol, Harold Russel,	<i>Meriden, Conn.,</i>	3 Forestry
Britton, Karl Beckwith,	<i>Glenville, O.,</i>	1 Mech. Eng.
Brockett, Arthur Andrew,	<i>Little Falls,</i>	1 Veterinary
Broder, Charles,	<i>New York City,</i>	2 Med. (N. Y. C.)
Brodie, Ralph Earle,	<i>Bergen,</i>	3 Med. (N. Y. C.)
Brogan, John Ernest, B.S.,	<i>New Orleans, La.,</i>	3 Elect. Eng.
Brooks, Ernest, Ph.B.,	<i>New York City,</i>	4 Civil Eng.
Brooks, Seabury John,	<i>Hayts Corners,</i>	Jr. Law
Brookins, William Van Rensselaer,	<i>Newfane,</i>	1 Elect. Eng.
Brough, Charles Young,	<i>Hanover, Pa.,</i>	3 Elect. Eng.
Brown, Aaron,	<i>New York City,</i>	1 Med. (N. Y. C.)
Brown, Alice Fargo,	<i>Buffalo,</i>	1 Arts
Brown, Charles Bansher,	<i>Montclair, N. J.,</i>	2 Arts
Brown, Charles Macdonald, Jr.,	<i>Ithaca,</i>	3 Arts
Brown, David Morris,	<i>New York City,</i>	1 Med. (N. Y. C.)
Brown, Frank Donaldson, B.S.,	<i>Baltimore, Md.,</i>	3 Elect. Eng.
Brown, Fred Isaac, B.M.E.,	<i>Sweet Home, Ark.,</i>	3 Mech. Eng.
Brown, Grover Charles,	<i>Ithaca,</i>	1 Civil Eng.
Brown, George Teall,	<i>New York City,</i>	2 Mech. Eng.
Brown, Herbert Childs,	<i>Ithaca,</i>	2 Mech. Eng.
Brown, Henry Lee,	<i>Salamanca,</i>	Jr. Law
Brown, John Thompson, B.S.,	<i>Baltimore, Md.,</i>	3 Elect. Eng.
Brown, Kenneth Doty,	<i>New York City,</i>	2 Arts
Brown, Levant R.,	<i>Brooklyn,</i>	1 Arts
Brown, Louise Fargo,	<i>Buffalo,</i>	4 Arts
Brown, Nathaniel Adelbert,	<i>Scottsville,</i>	4 Civil Eng.
Brown, Olivine,	<i>Salt Lake City, Utah,</i>	4 Arts
Brown, Raymond Elliott,	<i>Reynoldsville, Pa.,</i>	4 Arts
Brown, Stanley Doty,	<i>New York City,</i>	2 Arts
Brown, William Niver,	<i>Cortland,</i>	2 Mech. Eng.
Brown, Willis Holt,	<i>New Haven Conn.,</i>	1 Mech. Eng.
Brown, Walter Sheldon, A.B.,	<i>Richburg,</i>	2 Forestry
Browne, William Henry, Jr.,	<i>Great Barrington, Mass.,</i>	1 Mech. Eng.
Bruce, Harry Alexander,	<i>Joliet, Ill.,</i>	1 Mech. Eng.
Bruce, Louis Fred,	<i>Joliet, Ill.,</i>	4 Elect. Eng.
Brundage, Edward Fosgate,	<i>Port Chester,</i>	2 Arts
Brundage, Floyd Collins,	<i>Andover,</i>	1 Elect. Eng.
Bruno y Dominguez, A.B.,	<i>Jose Antonio, Porto Rico,</i>	1 Mech. Eng.
Bruns, Gustave John	<i>Niagara Falls,</i>	3 Agriculture
Bryde, Edward Dudley,	<i>New York City,</i>	3 Arts
Buchanan, Isaac Victor,	<i>Pittsburg, Pa.,</i>	2 Arts
Buck, Alonzo, Morris, Jr.,	<i>Hyattsville, Md.,</i>	3 Elect. Eng.

Buck, Ashael J,	<i>Ithaca,</i>	Jr. Law
Buck, Howard H,	<i>Albany,</i>	1 Mech. Eng.
Buck, Irwin,	<i>Albany,</i>	2 Mech. Eng.
Buckbee, Blanche,	<i>French Mountain,</i>	2 Arts
Buckingham, Henry Hine, A.B.,	<i>New York City,</i>	4 Elect. Eng.
Buckley, Daniel Martin,	<i>Millbrook,</i>	Jr. Law
Bües, Christian Rudolph August,	<i>Burlington, N. J.,</i>	1 Agr.
Buffington, James William,	<i>St. Louis, Mo.,</i>	1 Law
Buffington, Ralph Maurice,	<i>Berkshire,</i>	1 Veterinary
Bugbee, Alice Gates, A.B.,	<i>New York City,</i>	4 Med. (N. Y. C.)
Buhl, George Arthur,	<i>Chicago, Ill.,</i>	1 Law
Bullard, Marguerite Jane, A.B.,	<i>Willimantic, Conn.,</i>	3 Med. (N. Y. C.)
Bullitt, Keith Logan,	<i>Louisville, Ky.,</i>	1 Law
Bunin, Noah,	<i>Brooklyn,</i>	1 Med. (N. Y. C.)
Bunker, Charles Orville Waite, B.Sc.,	<i>Hebron, Neb.,</i>	2 Medicine
Bunyan, John Crerar,	<i>Saratoga,</i>	1 Med. (N. Y. C.)
Burd, Merritt Coleman,	<i>Dundee,</i>	2 Arts
Burgweger, Henry,	<i>Buffalo,</i>	3 Arts
Burke, John Joseph,	<i>Mt. Vernon,</i>	Jr. Law
Burley, Arthur James,	<i>Angola,</i>	1 Veterinary
Burlingame, Bruce Sedgwick,	<i>Syracuse,</i>	4 Elect. Eng.
Burlingame, Roderick Sedgwick,	<i>Syracuse,</i>	2 Arts
Burnell, Eugene Dickinson,	<i>Mobile, Ala.,</i>	1 Civil Eng.
Burnett, Russell,	<i>Fort Plain,</i>	1 Arts
Burnham, Henry Gordon,	<i>Glens Falls,</i>	2 Arts
Burns, Edward, Jr.,	<i>Brooklyn,</i>	4 Mech. Eng.
Burns, Eleanor Irene,	<i>Philadelphia, Pa.,</i>	2 Arts
Burns, Geoffrey Charles Henry,	<i>New York City,</i>	4 Med. (N. Y. C.)
Burns, John Robert,	<i>Ithaca,</i>	1 Veterinary
Burns, Thomas Francis,	<i>Richfield Spa.,</i>	Sp. Agriculture
Burns, Walter William,	<i>Greenport,</i>	1 Mech. Eng.
Burr, David Eugene,	<i>Montclair, N. J.,</i>	4 Mech. Eng.
Burr, George Houston,	<i>Natick, Mass.,</i>	1 Architecture
Bush, George Wendell,	<i>Berkshire,</i>	1 Agriculture
Burton, Howard Blaine,	<i>Brocton,</i>	1 Architecture
Burton, Mary Doddridge,	<i>Cambridge, Mass.,</i>	4 Arts
Butler, Alice Short,	<i>Indianapolis, Ind.,</i>	4 Arts
Butler, Bert S,	<i>Hermitage,</i>	1 Arts
Butler, Robert Paul,	<i>Cedar Rapids, Ia.,</i>	2 Arts
Button, Charles Edward,	<i>Seattle, Wash.,</i>	1 Elect. Eng.
Button, Harry Freeman,	<i>Cottons,</i>	Sp. Agriculture
Cady, Bert James,	<i>Addison,</i>	2 Veterinary

Cady, Perkins Fitch, 2nd,	<i>Hudson,</i>	Sp. Law
Cahill, Francis Joseph,	<i>Hoosick Falls,</i>	4 Arts, (2 Med.)
Cairns, Edward,	<i>Montclair, N. J.,</i>	1 Mech. Eng.
Calderón, George Alvarez,	<i>Washington, D. C.,</i>	2 Mech. Eng.
Caldwell, Felix Renick,	<i>Circleville, O.,</i>	Sr. Law
Caldwell, Isabel,	<i>Brooklyn,</i>	3 Arts, (1 Med.)
Calkins, Jesse Wilbur,	<i>Evanston, Ill.,</i>	1 Civil Eng.
Callister, John Henry,	<i>Poughkeepsie,</i>	Jr. Law
Cameron, Francis Michael,	<i>Hornellsville,</i>	Jr. Law
Cameron, William Edward,	<i>Trout River,</i>	1 Law
Camp, Arthur Dutton,	<i>Upper Montclair, N. J.,</i>	1 Forestry
Campbell, James Archibald,	<i>Brooklyn,</i>	3 Elect. Eng.
Campion, Edward Winslow,	<i>Troy,</i>	1 Mech. Eng.
Candee, Allan Harry,	<i>Hinsdale, Ill.,</i>	1 Mech. Eng.
Card, Ernest Mason, A.B.,	<i>Tacoma, Wash.,</i>	Jr. Law
Carden, William Henry,	<i>Chicago, Ill.,</i>	1 Mech. Eng.
Carley, Dwight Ebenezer,	<i>Lisle,</i>	Sp. Agriculture
Carlisle, Floyd Leslie,	<i>Watertown,</i>	4 Arts
Carlisle, Ralph James,	<i>Missouri Valley, Iowa,</i>	1 Arts
Carpenter, Clinton Arthur,	<i>Chicago, Ill.,</i>	2 Elect. Eng.
Carpenter, Charles Ketchum,	<i>Ithaca,</i>	1 Mech. Eng.
Carr, Anna Myrtle,	<i>Rochester,</i>	3 Arts
Carr, Hugh Holmes,	<i>New York City,</i>	3 Med. (N. Y. C.)
Carroll, Harry Clarence,	<i>Worcester, Mass.,</i>	4 Mech. Eng.
Carter, Charles Edward,	<i>Geneva, O.,</i>	1 Mech. Eng.
Carter, Helen Louise,	<i>Newark, N. J.,</i>	3 Med. (N. Y. C.)
Carter, Donald Pershing,	<i>Pottsville, Pa.,</i>	3 Mech. Eng.
Carver, Harry Eugene,	<i>Skaneateles,</i>	1 Mech. Eng.
Cary, David Drysdale,	<i>Patchin,</i>	1 Law
Cary, Sarah Flagler,	<i>Binghamton,</i>	3 Arts
Cary, William Paxton,	<i>New York City,</i>	2 Arts
Case, Donald Greggs,	<i>Cortland,</i>	1 Elect. Eng.
Casper, Le Roy,	<i>Howes Cave,</i>	2 Mech. Eng.
Caufield, James Joseph,	<i>Honesdale, Pa.,</i>	Sp. Mech. Eng.
Cavanaugh, Florence Bessie,	<i>Ionia,</i>	Sp. Arts
Ceasar, Abraham Louis,	<i>New York City,</i>	3 Med. (N. Y. C.)
Chace, Archibald Eastwood,	<i>New York City,</i>	3 Arts, (2 Med.)
Chadovitz, Isaac,	<i>Brooklyn,</i>	1 Arts
Chadwick, Albert Angel,	<i>Port Jervis,</i>	1 Architecture
Chalmers, Thomas Stuart,	<i>Chicago, Ill.,</i>	2 Mech. Eng.
Chambers, Norman Campbell,	<i>Batoum, Russia,</i>	2 Mech. Eng.
Champaign, Leigh Marsh,	<i>Ithaca,</i>	1 Civil Eng.

Champlin, George Major,	<i>Ithaca,</i>	Jr. Law
Chandler, Clarence Amasa,	<i>Charteroi, Pa.,</i>	2 Mech. Eng.
Chandler, Horace Harry,	<i>Vineland, N. J.,</i>	2 Mech. Eng.
Chapin, Charles Willard,	<i>Georgetown,</i>	4 Med. (N. Y. C.)
Chapman, Charles Frederick,	<i>Norwich, Conn.,</i>	2 Mech. Eng.
Chapman, Charles Henry,	<i>Washington, D. C.,</i>	Sp. Agriculture
Chapman, George Mills,	<i>Chicago, Ill.,</i>	2 Arts
Chapman, Harry L,	<i>Clayville,</i>	3 Elect. Eng.
Chapman, Milton,	<i>Hartland,</i>	2 Medicine
Chappell, Charles Clark,	<i>Kingston,</i>	1 Law
Charles, Benson Brush,	<i>Salamanca,</i>	2 Arts
Charles, Vera Katharine,	<i>Washington, D. C.,</i>	4 Arts
Charters, Samuel Barclay,	<i>Pittsburg, Pa.,</i>	3 Elect. Eng.
Chase, Arthur Lewis,	<i>Rochester,</i>	1 Medicine
Chase, Arthur Reynolds, A. B.,	<i>Sioux City, Ia.,</i>	2 Civil Eng.
Chase, Elma Dorothy,	<i>Knapp Creek,</i>	4 Arts, (1 Med.)
Chase, Jerome Babcock,	<i>Morrisville,</i>	4 Arts
Chase, Lee Arthur,	<i>Gloversville,</i>	2 Agriculture
Chase, Le Grand,	<i>Union Springs,</i>	1 Arts
Chase, Richard Wade,	<i>Holyoke, Mass.,</i>	2 Civil Eng.
Cheney, Jane Button,	<i>Franklinville,</i>	1 Arts
Cheney, Rollin Kimball,	<i>Jamestown,</i>	4 Mech. Eng.
Chesebrough, Edith Garfield,	<i>Syracuse,</i>	2 Arts
Childs, Lysander D,	<i>Columbia, S. Car.,</i>	1 Elect. Eng.
Choate, Edward Stephen, M. E.,	<i>Randallstown, Md.,</i>	4 Mech. Eng.
Chormann, Irving Otto,	<i>Niagara Falls,</i>	1 Arts
Christie, Elsie,	<i>Nyack,</i>	4 Arts
Church, Elizabeth Hoyt,	<i>Kingston, Pa.,</i>	2 Arts
Cipperly, Ella Maude,	<i>Wynantskill,</i>	3 Arts
Clapp, Earl Hart,	<i>North Rush,</i>	1 Forestry
Clapp, John Henry, B.S.,	<i>Washington, D. C.,</i>	1 Law
Clapp, Percy Edwin,	<i>North Rush,</i>	Sp. Agriculture
Clapp, Laurence Bowman,	<i>Ithaca,</i>	3 Arts
Clark, Alexander Bayard,	<i>Ithaca,</i>	3 Arts
Clark, Charles Sprague,	<i>Buffalo,</i>	4 Arts
Clark, Emily Anna,	<i>Hamilton,</i>	2 Arts
Clark, John Artemas,	<i>Bay View, P. E. Is., Can.,</i>	Sp. Agriculture
Clark, James Joseph,	<i>Port Byron,</i>	Sr. Law
Clark, John O'Fallon, Jr.,	<i>St. Louis, Mo.,</i>	4 Mech Eng.
Clark, John Powell,	<i>Norwood,</i>	1 Arts
Clark, Sandford Riddell,	<i>Onondaga Valley,</i>	1 Agriculture
Clark, Zella Maria, B. A.,	<i>Bay View, P. E. Is., Can.,</i>	2 Med.

Clarke, Edgar Whitney,	<i>Derby, Conn.,</i>	2 Mech. Eng.
Clarke, Milo Robinson,	<i>Newburgh,</i>	4 Elect. Eng.
Clement, Thomas Houlten, Jr., B.S. in C.E.,	<i>Port Lavoca, Tex.,</i>	3 Civil Eng.
Clements, Harry Vernon,	<i>Auburn,</i>	Jr. Law
de Clercq, Clarence Fred,	<i>Lebanon,</i>	1 Civil Eng.
Cleveland, Fred Percy,	<i>Holyoke, Mass.,</i>	1 Mech. Eng.
Cleveland, John Augustus, A.B.,	<i>Rochester,</i>	3 Elect. Eng.
Cleveland, Milo L,	<i>Brockport,</i>	1 Civil Eng.
Climo, Arthur Harold,	<i>Cleveland, O.,</i>	1 Arts
Close, Henry Brevoort,	<i>Yonkers,</i>	1 Forestry
Clurman, Morris Joseph,	<i>New York City,</i>	1 Arts
Coale, Harvey Morton,	<i>Baltimore, Md.,</i>	3 Elect. Eng.
Cobb, Charles Sherman,	<i>Albany,</i>	1 Architecture
Coburn, Anna Maud,	<i>Owego,</i>	3 Arts
Cochrane, Harry Hamilton, B.S.,	<i>Ithaca,</i>	1 Mech. Eng.
Coe, Benjamin Steele,	<i>Waterbury, Conn.,</i>	1 Arts
Coe, Ralph Brewster,	<i>Oxford,</i>	1 Civil Eng.
Coffin, Albert Reeves,	<i>Indianapolis, Ind.,</i>	3 Arts
Coffin, Helen,	<i>Albany,</i>	1 Arts
Coffin, John Dix,	<i>Glens Falls,</i>	1 Arts
Coffin, William Hallock, C.E.,	<i>St. Louis, Mo.,</i>	2 Elect. Eng.
Cohen, Morton,	<i>Brooklyn,</i>	1 Elect. Eng.
Cohen, Rose, M.E., B.E.,	<i>New York City,</i>	3 Med. (N. Y. C.)
Coit, Robert Howland,	<i>Grand Rapids, Mich.,</i>	1 Arg.
Colborn, Harry Carney,	<i>Michigan City, Ind.,</i>	4 Arts
Cole, Clarence Myron,	<i>Everett, Wash.,</i>	1 Mech. Ents
Cole, Joseph Kinsey,	<i>Cincinnati, O.,</i>	4 Arts
Collier, George Dudley,	<i>Rochester,</i>	2 Mech. Eng.
Collins, John Dempsey,	<i>Ithaca,</i>	1 Arts
Collins, Lucy Jane,	<i>Hagaman,</i>	1 Arts
Coltman, Robert, 3rd,	<i>Denver, Colo.,</i>	1 Civil Eng.
Coman, Grace Elizabeth,	<i>Hamilton,</i>	2 Arts
Comstock, Jay Floyd,	<i>Oxford,</i>	1 Elect. Eng.
Conlee, George Dyer,	<i>Ithaca,</i>	1 Mech. Eng.
Connor, Frederick Tuttle,	<i>Burlington, Ia.,</i>	2 Civil Eng.
Cook, Charles Ferguson,	<i>Utica.</i>	1 Civil Eng.
Cook, Elizabeth Ellsworth,	<i>Ithaca,</i>	1 Arts
Cool, Charles Leroy,	<i>Pittston, Pa.,</i>	4 Arts
Coolbaugh, Ronald Gilbert,	<i>Easton, Pa.,</i>	4 Mech. Eng.
Coons, Paul Delmont,	<i>Skaneateles,</i>	1 Civil Eng.
Cooper, Le Brun,	<i>East Orange, N. J.,</i>	2 Elect. Eng.

Cooper, Ralph Stuart,	<i>Ithaca,</i>	4 Mech. Eng.
Corbin, Horace,	<i>Oxford,</i>	2 Civil Eng.
Corman, Bruce Hall,	<i>Tonawanda,</i>	1 Mech. Eng.
Cornwall, Andrew Raymond,	<i>Alexandria Bay,</i>	1 Law
Cortelyou, Charles Metcalf,	<i>West New Brighton,</i>	1 Mech. Eng.
Coryell, Clarence Catlin,	<i>Ithaca,</i>	4 Med. (N. Y. C.)
Cosgrove, John Daniel,	<i>Brooklyn,</i>	1 Civil Eng.
Costello, Arthur Alexander,	<i>Syracuse,</i>	3 Arts
Costello, George Justin,	<i>Syracuse,</i>	3 Mech. Eng.
Costello, James Harry,	<i>Elmira,</i>	1 Elect. Eng.
Cott, Chester Charles,	<i>Buffalo,</i>	1 Arts
Cottis, George Wilbert,	<i>Rochester,</i>	3 Med. (N.Y.C.)
Cotton, Daniel Reed,	<i>Fairmount,</i>	1 Arts
Couch, George James,	<i>Ithaca,</i>	1 Mech. Eng.
Covert, Earl Blunn,	<i>Watervliet,</i>	2 Arts
Coville, Howard Grenville,	<i>Marcellus,</i>	1 Agriculture
Cowden, Frederick Hatton, Jr.,	<i>Harrisburg, Pa.,</i>	Jr. Law
Cowell, Arthur Westcott,	<i>Auburn,</i>	4 Agriculture
Coxe, Alfred Conkling, Jr., B.A.,	<i>Utica,</i>	Jr. Law
Coxe, Alfred Yoemans,	<i>Toledo, O.,</i>	1 Civil Eng.
Coyie, James Francis,	<i>New York Ctty,</i>	2 Med. (N. Y. C.)
Craig, Joseph Edwiu, B.S.,	<i>Port Gibson, Miss.,</i>	4 Civil Eng.
Craig, Roland, D, B.S.,	<i>Guelph, Ont., Can.,</i>	4 Forestry
Craig, Sam Nesbit,	<i>Allegheny, Pa.,</i>	1 Mech. Eng.
Crawford, Charlotte Holmes,	<i>Nyack,</i>	1 Arts
Crawford, Mary Merritt,	<i>Nyack,</i>	3 Arts, (1 Medicine)
Crawford, Thomas Frew, B.S.,	<i>Philadelphia, Pa.,</i>	1 Mech. Eng.
Cresswell, Howell Scott,	<i>Ottumwa, Ia.,</i>	1 Arts
Crissey, Harold Elverton,	<i>Jamestown,</i>	2 Arts
Crist, Harry Tryon,	<i>Middletown,</i>	Sr. Law
Crite, Oscar,	<i>Shelby, N. C.,</i>	1 Medicine
Crittenden, Eugene Casson,	<i>Oswayo, Pa.,</i>	1 Arts
Crockett, Esther Marie Simonds,	<i>Brooklyn,</i>	4 Arts
Crofts, Fred Sharer,	<i>Little Falls,</i>	2 Arts
Crofts, George Davis, A.B.,	<i>Buffalo,</i>	Sr. Law
Crosby, Cyrus Richard,	<i>Penn Yan,</i>	3 Arts
Crosby, Sara Adams,	<i>Kingston,</i>	3 Arts
Crosby, William Ernest,	<i>Middle Granville,</i>	1 Arts
Cross, Charles Maro,	<i>Hartford, Conn.,</i>	3 Elect. Eng.
Cross, Charles Norman,	<i>Bliss,</i>	2 Elect. Eng.
Cross, Ralph Adam,	<i>Neversink,</i>	3 Arts
Crossett, Carolyn Hawley,	<i>Warsaw,</i>	1 Arts

Crossett, Juliet Sarah,	<i>Warsaw,</i>	4 Arts
Crosier, George Stanley,	<i>Buffalo,</i>	2 Mech. Eng.
Crozier, Ray,	<i>Ithaca,</i>	2 Civil Eng.
Crouse, Jay Lansing,	<i>Syracuse,</i>	1 Mech. Eng.
Crowe, Fred Lester,	<i>Truro, Nova Scotia, Can.,</i>	3 Agr.
Crum, Edward Irvin,	<i>Dayton, O.,</i>	1 Medicine
Crump, Stanley Felix,	<i>Pittsford,</i>	2 Elect. Eng.
Cuddeback, Edgar Gordon,	<i>Port Jervis,</i>	3 Arts, (2 Med.)
Cuddeback, Frank Elting,	<i>Port Jervis,</i>	3 Mech. Eng.
Cudmore, John Homer,	<i>New York City,</i>	2 Med. (N. Y. C.)
Cuervo, Manuel Victorino,	<i>Havana, Cuba,</i>	1 Mech. Eng.
Culyer, May,	<i>New York City,</i>	1 Medicine
Cummin, Gaylord Church,	<i>Dayton, O.,</i>	3 Civil Eng.
Cuniffe, Edward Rutherford,	<i>Port Jervis,</i>	4 Med. (N. Y. C.)
Curran, James Edwin,	<i>Palmyra,</i>	Jr. Law
Curry, Charles Henry,	<i>Pittsburg, Pa.,</i>	1 Law
Curtis, Frank Danforth,	<i>Saratoga Springs,</i>	Sp. Forestry
Curtis, Frank George,	<i>Jamestown,</i>	Sr. Law
Curtis, Harry Leroy,	<i>New York City,</i>	1 Mech. Eng.
Curtis, Henry Eugene,	<i>Ithaca,</i>	2 Civil Eng.
Curtis, Marion Loudon,	<i>Rochester,</i>	1 Agriculture
Curtis, Rensselaer Leigh,	<i>Franklinville,</i>	1 Law
Curtis, William Elliott,	<i>Norwalk, Conn.,</i>	2 Mech. Eng.
Curtiss, Edwin Stair,	<i>Cleveland, O.,</i>	2 Mech. Eng.
Curtiss, Robert Elmer,	<i>Richland,</i>	1 Civil Eng.
Cushing, Prentice,	<i>East Orange, N. J.,</i>	1 Elect. Eng.
Cushman, Robert Asa,	<i>Providence, R. I.,</i>	2 Agriculture
Cutler, Charles Evlynn,	<i>Pembroke,</i>	3 Arts
Daboll, Henry Gaylord,	<i>Memphis,</i>	4 Mech. Eng.
Dahmen, Anton Ernest,	<i>Ithaca,</i>	1 Civil Eng.
Daley, DeWitt Hayden,	<i>Chatham,</i>	1 Civil Eng.
Dandridge, Edmund Pendleton,	<i>Leetown, W. Va.,</i>	2 Mech. Eng.
Danforth, Francis Jenkins, A.B.,	<i>New York City,</i>	4 Mech. Eng.
Dannreuther, Walter Taylor,	<i>New York City,</i>	1 Med. (N. Y. C.)
Darbois, Edmund Otto,	<i>West Hoboken, N. J.,</i>	2 Med. (N. Y. C.)
Darby, Clifford Torrey,	<i>St. Louis, Mo.,</i>	1 Mech. Eng.
Darling, Frederick Warren, A.B.,	<i>Buffalo,</i>	1 Forestry
Darrow, Warren Edwin,	<i>Patchogue,</i>	1 Arts
Davenport, Isaac,	<i>Richmond, Va.,</i>	3 Elect. Eng.
Davenport, Miles Leroy, B.S.,	<i>Ithaca,</i>	3 Veterinary
David, Alfred,	<i>New York City,</i>	2 Arts
Davidson, Louis Leopold,	<i>New York City,</i>	4 Med. (N. Y. C.)

Davies, Edward Livingston,	<i>New York City,</i>	1 Mech. Eng.
Davies, John Percival, B.S.,	<i>Ebbw Vale, Man., England,</i>	4 Mech. Eng.
Davies, Maude,	<i>Norwich, Conn.,</i>	Sp. Arts
Davis, Edmund Ireland,	<i>Bangor, Me.,</i>	3 Civil Eng.
Davis, Edward Howard,	<i>Brooklyn,</i>	Jr. Law
Davis, Elbert Rice,	<i>Rushford,</i>	2 Medicine
Davis, Glenmore Whitney,	<i>Galion, O.,</i>	4 Arts
Davis, James Lee,	<i>Waco, Tex.,</i>	3 Arts
Davis, Oliver Henry,	<i>Buffalo,</i>	2 Mech. Eng.
Davis, Robert Livingston,	<i>Harrison Valley, Pa.,</i>	2 Arts
Davis, Roy Bingham,	<i>Norwood,</i>	2 Arts
Davis, Thomas George,	<i>New York City,</i>	1 Med. (N. Y. C.)
Davitt, John Washington,	<i>Troy,</i>	2 Civil Eng.
Dawes, Claude Thomas,	<i>Johnstown,</i>	3 Arts
Dawley, Clarence Augustus,	<i>Montour Falls,</i>	3 Mech. Eng.
Day, Charles Harold,	<i>Providence, R. I.,</i>	1 Mech. Eng.
Day, Clarence Finch,	<i>Attica,</i>	2 Veterinary
Day, Irvin Williams,	<i>Utica,</i>	1 Mech. Eng.
Dayton, Paul Kuykendall,	<i>Towanda, Pa.,</i>	1 Mech. Eng.
Dean, Arlton Knickerbocker,	<i>Ithaca,</i>	2 Veterinary
Dean, George Warren, B.S.,	<i>Griswold, Ia.,</i>	3 Civil Eng.
Decker, Frank Norton,	<i>Phoenix,</i>	1 Law
Dederer, Allsed Anthony, C.E.,	<i>New York City,</i>	1 Law
Dederer, Isaac Carleton,	<i>New York City,</i>	2 Arts, (1 Med.)
Deemer, Arthur Passavant,	<i>Greensburg, Pa.,</i>	2 Elect. Eng.
Deffenbaugh, Homer Crow,	<i>Mt. Pleasant, Pa.,</i>	1 Elect. Eng.
Deitz, Karl Soden,	<i>Gilbertsville,</i>	1 Law
Demarest, Ruth,	<i>Nyack,</i>	4 ¹ Med. (N. Y. C.)
Dempsey, Louise Magdalen,	<i>Albany,</i>	Sp. Arts
Dempster, Robert Ledger,	<i>Buffalo,</i>	Jr. Law
Denenholz, Aaron, M.D.,	<i>New York City,</i>	Sp. Med. (N.Y.C.)
Denisou, Henry Strong,	<i>Denver, Colo.,</i>	2 Arts
Dennett, Helen Mae,	<i>Brooklyn,</i>	1 Arts
Dennett, Robert Clark Ernest,	<i>Brooklyn,</i>	3 Civil Eng.
Dennis, Nina A.,	<i>Binghamton,</i>	3 Arts
Dennis, Samuel James,	<i>Dover, N. H.,</i>	Sp. Mech. Eng.
Dennison, Boyd Coe,	<i>Binghamton,</i>	3 Mech. Eng.
Denny, Robert Campbell,	<i>Newark, N. J.,</i>	4 Mech. Eng.
De Pasquale, James,	<i>Williams Bridge,</i>	1 Med. (N.Y.C.)
Denton, Alpheus Penn,	<i>Leavenworth, Kan.,</i>	3 Elect. Eng.
Derr, Olin Fell,	<i>Wilkes-Barre, Pa.,</i>	3 Mech. Eng.
Dershimer, Archibald Munro,	<i>Pittston, Pa.,</i>	Sp. Architecture

Desbecker, John Warner,	<i>Buffalo,</i>	1 Mech. Eng.
Desbecker, Joseph Lawrence,	<i>Buffalo,</i>	3 Arts
Deshon, John James,	<i>Chenandega, Nicaragua, C. A.,</i>	Sp. Agr.
Deudney, Russell,	<i>Kingston,</i>	Jr. Law
Deutsch, Raymond,	<i>Cleveland, O.,</i>	1 Arts
DeVed, Charles McClellion,	<i>New Rochelle,</i>	1 Elect. Eng.
DeVed, Horace Warren,	<i>New Rochelle,</i>	4 Mech. Eng.
Devitt, Albert F,	<i>Varna,</i>	1 Law
Dewey, Homer Lounbury,	<i>Candor,</i>	1 Veterinary
Dibble, Charles Lemuel,	<i>Marshall, Mich.,</i>	4 Arts
Dickinson, Louis Tiffany,	<i>New York City,</i>	Jr. Law
Dickinson, William Elmore, A. B.,	<i>Williamsburg, Va.,</i>	3 Elect. Eng.
Diemer, Harry Marshall,	<i>Cleveland, O.,</i>	4 Elect. Eng.
Dimock, William Wallace, B. Agr.,	<i>Ithaca,</i>	1 Veterinary
Dingle, Edward Broad,	<i>Baltimore, Md.,</i>	3 Civil Eng.
Dingle, Howard,	<i>Baltimore, Md.,</i>	3 Mech. Eng.
Di Rocco, Joseph,	<i>New York City,</i>	3 Med. (N. Y. C.)
Ditmars, Jacob Remsen,	<i>Saratoga,</i>	1 Law
Divine, John Howard,	<i>Ellenville,</i>	2 Mech. Eng.
Dix, Frank Stillman,	<i>Brooklyn,</i>	4 Elect. Eng.
Dodge, Clarence Button,	<i>Cleveland, O.,</i>	1 Mech. Eng.
Dodge, John Orris,	<i>Dixon, Ill.,</i>	2 Mech. Eng.
Dolan, Paul, A. B.,	<i>Pottsville, Pa.,</i>	4 Med. (N. Y. C.)
Dominguez, Felix Jorge Vidal, A. B.,	<i>New York City,</i>	Sr. Law
Dominguez, Rafael,	<i>Vera Cruz, Mexico,</i>	4 Civil Eng.
Donovan, Herbert Darius Augustine,	<i>Ft. Covington,</i>	4 Arts
Dosh, Louis Philip,	<i>Melford, Iowa,</i>	4 Med. (N. Y. C.)
Doty, Stephen Wiert,	<i>Lockport,</i>	1 Forestry
Doubleday, Bernice Ednah,	<i>Jamestown,</i>	4 Arts
Douglas, Percy Gordon,	<i>New York City,</i>	1 Civil Eng.
Douglass, Herbert McNair,	<i>Clyde,</i>	1 Mech. Eng.
Douglass, Howard Weddle,	<i>McKeesport, Pa.,</i>	3 Arts
Dove, Arthur Garfield,	<i>Geneva,</i>	4 Arts
Dowd, Charles Bernard,	<i>Cortland,</i>	Jr. Law
Downs, Charles Lefever,	<i>Williamsport, Md.,</i>	1 Arts
Dows, Linda,	<i>New York City,</i>	Sr. Law
Drake, Bertrand Francis, B.S.,	<i>St. Louis, Mo.,</i>	2 Medicine
Drake, Hervey John,	<i>Brockport,</i>	Jr. Law
Drake, Raymond Rogers,	<i>Buffalo,</i>	1 Elect. Eng.
Dravo, Christian McKee,	<i>Pittsburg, Pa.,</i>	2 Arts
Driscoll, James Timothy,	<i>Buffalo,</i>	Sr. Law
Drury, Alexander Getchell,	<i>Cincinnati, O.,</i>	1 Arts

Dubar, Violet Agnes,	<i>Titusville, Pa.,</i>	1 Arts
Du Bois, Henry Pastor,	<i>Hallstead, Pa.,</i>	1 Mech. Eng.
Dubrenil, Alice Blanche,	<i>Normandy Heights, Md.,</i>	1 Arts
Duckworth, Willard Demarest,	<i>New York City,</i>	2 Elect. Eng.
Dudgeon, Franklin Pierce,	<i>Locust Valley,</i>	Jr. Law
Dudley, Fanny Alice,	<i>Ithaca,</i>	1 Arts
Dudley, Gerry Brown, A.B.,	<i>Ashmore, Ill.,</i>	3 Med. (N. Y. C.)
Dudley, Percival Clarence,	<i>Ithaca,</i>	1 Law
Duffy, Edward Allen, B.A.,	<i>Seattle, Wash.,</i>	3 Mech. Eng.
Duke, William, Jr.,	<i>Wellsville,</i>	1 Law
Dumás, Claudio, Jr., A.B.,	<i>Matanzas, Cuba,</i>	2 Elect. Eng.
Dunbar, Jessie Ellen,	<i>Ithaca,</i>	1 Arts
Dunbar, Robert C, A.B.,	<i>Monmouth, Ill.,</i>	3 Architecture
Dunham, William Harrison, Jr.,	<i>Waterloo,</i>	1 Law
Dunlap, Frederick,	<i>Ithaca,</i>	3 Forestry
Dunlap, Robert Bright,	<i>Reading, Pa.,</i>	1 Law
Dunlop, William Robert,	<i>Fayetteville,</i>	1 Agriculture
Dunn, Arthur Taylor,	<i>Cortland,</i>	4 Arts
Dunn, Lillian Cecilia,	<i>Schenectady,</i>	4 Arts
Dunn, Perry Denise,	<i>Webster,</i>	Jr. Law
Dunn, Thomas Lyteland,	<i>Petersburg, Va.,</i>	1 Elect. Eng.
Dunning, Henry Sage,	<i>New York City,</i>	1 Arts
Durham, Glen Giffen, B.Sc., M.Sc.,	<i>Watsonstown, Pa.,</i>	2 Mech. Eng.
Durkon, William James,	<i>Watertown,</i>	1 Civil Eng.
Durland, Alice Oakey,	<i>Jamaica,</i>	2 Arts
Duschak, Ernest Adolph,	<i>Buffalo,</i>	1 Civil Eng.
Duvall, Florence Lee,	<i>Riverhead,</i>	3 Arts
Duvall, Robert William,	<i>Riverhead,</i>	Jr. Law
Dyrlund, Yensen Verty Martin Petraus, B.Ph.,	<i>Brooklyn,</i>	1 Med.
		(N. Y. C.)
Eagan, George Arthur,	<i>Washington, D.C.,</i>	1 Mech. Eng.
Earle, Harold Asbury,	<i>Glen Ridge, N. J.,</i>	1 Arts
Earle, Irving Vann,	<i>Syracuse,</i>	1 Law
Easton, Henry Clement,	<i>New York City,</i>	Sp. Agriculture
Eberhardt, Elmer Gould,	<i>Newark, N. J.,</i>	3 Mech. Eng.
Eberhardt, Frank Edward,	<i>Newark, N. J.,</i>	Jr. Law
Ebert, Laurence Rudolph,	<i>Vancouver Barracks, Wash.,</i>	3 Mech. Eng.
Eckert, Harry Andrew,	<i>Dayton, O.,</i>	1 Mech. Eng.
Edge, Alfred Joshua,	<i>Darlington, Md.,</i>	2 Civil Eng.
Edge, Walter Smith,	<i>Darlington, Md.,</i>	4 Civil Eng.
Edgerton, Franklin, 2d,	<i>Washington, D. C.,</i>	2 Arts
Edgett, George Ernest,	<i>Titusville, Pa.,</i>	4 Mech. Eng.

Edson, Edward Gilroy,	<i>Kansas City, Mo.,</i>	2 Civil Eng.
Edson, Ray Arthur,	<i>Crittenden,</i>	2 Medicine
Edwards, Ethelyn Isadora,	<i>Forestville,</i>	3 Arts
Edwards, Margaret Whitbeck,	<i>Ithaca,</i>	2 Arts
Edwards, Olive Ruth,	<i>Forest Home,</i>	1 Arts
Edwards, Stanley Richard,	<i>Utica,</i>	4 Elect. Eng.
Eells, Kate Gay,	<i>Walton,</i>	4 Arts
Efinger, Philip Charles,	<i>Lancaster, Pa.,</i>	1 Elect. Eng.
Egbert, Oscar Baldwin,	<i>Rosebank,</i>	2 Elect. Eng.
Ehrich, Stone Howard,	<i>New York City,</i>	1 Arts
Eldredge, Guy Sunderliu,	<i>Salt Lake City, Utah,</i>	Sp. Agr.
Eldredge, Ralph Waldo,	<i>Sharon Springs,</i>	Sp. Arts
Eliasberg, Bernard,	<i>New York City,</i>	1 Med. (N. Y. C.)
Elliott, Ethel Freda,	<i>Etna,</i>	1 Arts
Elliott, John Earl, A.B.,	<i>Hampton, Va.,</i>	2 Civil Eng.
Elliott, Marion Winifred,	<i>Ithaca,</i>	2 Medicine
Ellis, Albert Ralph,	<i>Pittsburg, Pa.,</i>	3 Civil Eng.
Ellis, Guernsey William,	<i>Buffalo,</i>	3 Civil Eng.
Ellis, John MacEwan,	<i>Hartford, Conn.,</i>	4 Mech. Eng.
Ellis, Lawrence Rees,	<i>Clayton,</i>	2 Civil Eng.
Ellis, Lucy Alicia,	<i>Clayton,</i>	4 Arts
Ellis, William Goodrich,	<i>Owego,</i>	1 Law
Ellis, Wesley Rose,	<i>Johnstown, Pa.,</i>	4 Elect. Eng.
Ellis, Williard Waldo, A.B.,	<i>Canaseraga,</i>	Sr. Law
Ellsworth, Helen Adelaide,	<i>New York City,</i>	Sp. Agriculture
Ellyson, Douglas Walker,	<i>Richmond, Va.,</i>	2 Elect. Eng.
Elmendorf, Robert Holmes,	<i>Buffalo,</i>	1 Arts
Elmer, Nixon Wiley.	<i>Cape May Court House, N. J.,</i>	3 Mech. Eng.
Elser, Frank Ball,	<i>Fort Worth, Tex.,</i>	1 Elect. Eng.
Elwood, Frank Edwin	<i>Scranton, Pa.,</i>	1 Civil Eng.
Elwood, James Lawrence,	<i>Rochester,</i>	1 Mech. Eng.
Embree, Clayton Jesse,	<i>Evanston, Ill.,</i>	2 Elect. Eng.
Emerson, Filip Law,	<i>Detroit, Mich.,</i>	2 Mech. Eng.
Emerson, Isabel Dolbier,	<i>Brooklyn,</i>	4 Arts
Emerson, Theophilus Roy,	<i>Ithaca,</i>	1 Forestry
Engel, Irving Harold,	<i>New York City,</i>	1 Med. (N. Y. C.)
Engle, Euphemia Birnie,	<i>Ithaca,</i>	4 Arts
English, Andrew,	<i>Van Etten,</i>	1 Veterinary
Eno, Harry,	<i>Belgium,</i>	3 Med. (N. Y. C.)
Entwisle, Edward Fussell,	<i>Johnstown, Pa.,</i>	1 Mech. Eng.
Epley, Henry Ernst,	<i>Franklin, Pa.,</i>	4 Mech. Eng.
Epstein, Sigmund,	<i>New York City,</i>	4 Med. (N. Y. C.)

Ertz Berger, Arthur Carson,	<i>Albany,</i>	2 Arts
Espenchied, Fred Fairfax, Jr.,	<i>Brooklyn,</i>	1 Elect. Eng.
Estabrook, Leo Taylor,	<i>Ithaca,</i>	1 Veterinary
Evans, Arad Ward,	<i>Washington, D. C.,</i>	2 Mech. Eng.
Evans, Chester Willard,	<i>San Francisco, Cal.,</i>	3 Mech. Eng.
Evans, Edward Anthony,	<i>Pittsburg, Pa.,</i>	1 Civil Eng.
Evans, Frances Elizabeth,	<i>Howell's Depot,</i>	2 Arts
Evans, Morgau William,	<i>Neath, Pa.,</i>	1 Agriculture
Evans, William George,	<i>Sharon, Pa.,</i>	1 Law
Evans, Willis J,	<i>New York City,</i>	2 Med. (N. Y. C.)
Evelaud, Frank Winsor,	<i>Jersey City, N. J.,</i>	1 Mech. Eng.
Everett, Harry Day,	<i>Burke,</i>	4 Arts
Everson, Charles Wetmore,	<i>New York City,</i>	3 Mech. Eng.
Fabian, Francis Gordon,	<i>Evanston, Ill.,</i>	2 Elect. Eng.
Fagundes, Euclides,	<i>Sao Paulo, Brazil,</i>	2 Agriculture
Fagundes, Lupercio,	<i>Ithaca,</i>	Sp. Agr.
Fagundes, Waldomiro,	<i>Sao Paulo, Brazil,</i>	2 Agriculture
Faile, Edward Hall,	<i>St. Paul, Minn.,</i>	1 Mech. Eng.
Failor, Newton Cowan,	<i>Richmond Hill,</i>	1 Elect. Eng.
Fairbank, Harvey Clark,	<i>Jamestown,</i>	4 Arts
Fairchild, John Gifford,	<i>Monticello,</i>	4 Arts
Falkenau, Robert Morris,	<i>Philadelphia, Pa.,</i>	2 Mech. Eng.
Fancher, Eliza A,	<i>Albion,</i>	2 Medicine
Fanning, Oscar Ford,	<i>Flanders,</i>	Sr. Law
Farmer, Thomas, Jr.,	<i>Detroit, Mich.,</i>	1 Mech. Eng.
Farnsworth, Earl Edwin,	<i>Grand Island, Neb.,</i>	4 Arts
Farrell, Benjamin Peater,	<i>Pittsfield, Mass.</i>	3 Med. (N. Y. C.)
Fassett, Newton Crocker,	<i>Elmira,</i>	3 Civil Eng.
Fauset, Jessie Redmona,	<i>Philadelphia, Pa.,</i>	2 Arts
Faust, Charlotte Clementine,	<i>Brooklyn,</i>	2 Arts
Faust, John Wesley, B.S.,	<i>Poughkeepsie,</i>	4 Med. (N. Y. C.)
Faxon, Theodore Edmund,	<i>Elyria, O.,</i>	4 Arts
Fay, Lawrence Bradshaw,	<i>Washington, D. C.,</i>	1 Civil Eng.
Feehan, Anna,	<i>Ovid,</i>	3 Arts
Feely, James Kerwin,	<i>Rochester,</i>	1 Law
Fehr, Frederic Frank,	<i>Ithaca,</i>	3 Veterinary
Feick, George, Jr.,	<i>Sandusky, O.,</i>	4 Architecture
Feigin, Philips,	<i>New York City,</i>	4 Elect. Eng.
Feldman, Isidor,	<i>New York City,</i>	1 Med. (N. Y. C.)
Feldman, Samuel,	<i>New York City,</i>	3 Med. (N. Y. C.)
Fenger, Frederick Abildgaard,	<i>Winnetka, Ill.,</i>	1 Mech. Eng.
Fennell, Matthias Franklin,	<i>Elmira,</i>	1 Medicine

Fenner, Robert Coyner, B.S.,	<i>Philadelphia, Pa.,</i>	4 Mech. Eng.
Ferdon, Edwin Nelson,	<i>Buffalo,</i>	4 Arts
Ferdon, Franklin Lee,	<i>Buffalo,</i>	4 Arts
Ferguson, Hugh McKnight,	<i>Pittsburg, Pa.,</i>	3 Mech. Eng.
Ferguson, John Barrie,	<i>New York City,</i>	3 Mech. Eng.
Ferguson, John Robert,	<i>Whitesboro,</i>	4 Elect. Eng.
Ferguson, Lizzie May,	<i>Salem,</i>	2 Arts
Fernow, Bernard Edward, Jr.,	<i>Ithaca,</i>	3 Arts
Ferry, Perry Lawson,	<i>Preble, Ind.,</i>	3 Med. (N. Y. C.)
Fessenden, Wenona Atwater,	<i>Ithaca,</i>	4 Arts
Fettis, Arthur Erskine,	<i>Norwich,</i>	3 Architecture
Fetzer, Morrison, B.S.,	<i>Concord, N. H.,</i>	3 Mech. Eng.
Fincke, Harry Stark, Ph. G.,	<i>Long Island City,</i>	4 Med. (N. Y. C.)
Finch, Sarah Elizabeth,	<i>Brooklyn,</i>	3 Med. (N. Y. C.)
Fine, Abraham,	<i>New York City,</i>	3 Med. (N. Y. C.)
Finkelstein, Morris Robert, A.B.,	<i>New York City,</i>	1 Med. (N. Y. C.)
Finlay, Walter Stevenson, Jr.,	<i>Brooklyn,</i>	2 Mech. Eng.
Fischbein, Elias,	<i>New York City,</i>	2 Med. (N. Y. C.)
Fish, Alice Armenia,	<i>Cooperstown,</i>	2 Arts
Fish, Emmett Grant,	<i>Ithaca,</i>	3 Med. (N. Y. C.)
Fisher, Archie Max,	<i>Spencer,</i>	4 Med. (N. Y. C.)
Fisher, Edward Adelbert,	<i>Utica,</i>	2 Civil Eng.
Fisher, Frederick William,	<i>Fairport,</i>	1 Civil Eng.
Fisher, Jabez William,	<i>Fitchburg, Mass.,</i>	2 Mech. Eng.
Fisher, James Powell,	<i>Pittsburg, Pa.,</i>	1 Mech. Eng.
Fisher, Peter, Jr.,	<i>Kenosha, Wis.,</i>	Sr. Law
Fishman, Joseph,	<i>New York City,</i>	4 Mech. Eng.
Fitter, Charles Franklin,	<i>Brooklyn,</i>	3 Elect. Eng.
Fitzgerald, Thomas Edmund,	<i>Cortland,</i>	3 Med. (N. Y. C.)
Fitzhugh, Hugh,	<i>Washington, D. C.,</i>	1 Mech. Eng.
Fitzpatrick, Frank Semon,	<i>Troy,</i>	1 Arts
Fitz-Randolph, William Sheppard,	<i>New Market, N. J.,</i>	3 Civil Eng.
Flack, Walter Jacob,	<i>Cincinnati, O.,</i>	1 Mech. Eng.
Flather, Alice Virginia,	<i>Nashua, N. H.,</i>	Sp. Arts
Fleck, Anthony George, A.B.,	<i>Brooklyn,</i>	1 Mech. Eng.
Fletcher, Ernest Sylvester,	<i>Temple, Texas,</i>	2 Mech. Eng.
Fletcher, Philena Belle,	<i>Bainbridge,</i>	3 Agriculture
Fletcher, William Franklin,	<i>Bainbridge,</i>	1 Agriculture
Flint, Francis Heath,	<i>Parishville,</i>	1 Civil Eng.
Flint, Gilbert Augustus,	<i>Colmans Stations,</i>	1 Agriculture
Flintham, Stuart John,	<i>Albion,</i>	3 Forestry
Flynn, Charles Andrew,	<i>Troy,</i>	2 Elect. Eng.

Flynn, Katherine Elizabeth,	Troy,	4 Arts
Foard, Arthur Virdin,	Baltimore, Md.,	1 Civil Eng.
Folger, Paul,	Geneva,	1 Arts
Follett, George Alfred,	Columbus, O.,	1 Arts
Foody, James Thomas,	Fultonville,	1 Arts
Foote, Edward Thaddeus,	Ithaca,	1 Mech. Eng.
Foote, George Wilson,	Vineland, N. J.,	2 Mech. Eng.
Foote, Horace Burdette,	Auburn,	1 Elect. Eng.
Forbes, William Henry,	Philadelphia, Pa.,	1 Mech. Eng.
Ford, Edward Hyndman,	Marshwood, Pa.,	2 Mech. Eng.
Ford, Hannibal Choate,	Ithaca,	4 Elect. Eng.
Fordham, Bruce Wight,	Scranton, Pa.,	2 Mech. Eng.
Foren, George Walter,	Cedarhurst,	Jr. Law
Forgy, John Edmonds,	Dayton, O.,	1 Mech. Eng.
Forney, Philip Nace,	Hanover, Pa.,	1 Mech. Eng.
Forshee, Isaac Christopher,	Willett,	1 Mech. Eng.
Forster, Frank Spencer,	Mt. Clemens, Mich.,	4 Architecture
Foster, Dwight Eliot,	South Orange, N. J.,	1 Arts
Foster, Thomas Myron,	Millbrook,	3 Civil Eng.
Foster, Wallace Russell,	Owego,	3 Arts
Fowler, John Scott, B.S.,	Philadelphia, Pa.,	4 Mech. Eng.
Fowler, Royale Hamilton,	Brooklyn,	1 Med. (N. Y. C.)
Fox, Ernst Frederick,	Wolcott,	1 Law
Fox, John Cornwall,	Penn Yan,	4 Elect. Eng.
Fox, J Francke,	Bluefield, W. Va.,	Sp. Med. (N. Y. C.)
Fox, Merritt Liddle,	Cedar Rapids, Ia.,	3 Elect. Eng.
Fox, Walter S.,	La Port, Ind.,	2 Arts
France, Edgar Griffith,	South Bend, Ind.,	2 Mech. Eng.
Francis, Harry Clay,	Philadelphia, Pa.,	1 Civil Eng.
Francis, Rolland Payne,	Stockton,	Sp. Agriculture
Francis, Samuel Edgar,	Wilmington, Del.,	2 Mech. Eng.
Frank, Henry Louis,	North Boston,	3 Arts
Frank, Julian,	Paris, Ky.,	1 Mech. Eng.
Frank, Leo Max,	Brooklyn,	1 Mech. Eng.
Frank, Philip,	New York City,	1 Med. (N. Y. C.)
Frank, Walter George,	Ulica,	1 Architecture
Fraser, William Royal,	Denver, Colo.,	1 Arts
Frayner, William Alley,	Springville,	4 Arts
Frazer, James Stoker,	Nashville, Tenn.,	1 Agriculture
Frederick, Walter Augustus,	Wilmington, Del.,	2 Mech. Eng.
Free, Edward Elway,	Du Bois, Pa.,	1 Elect. Eng.
Freedlander, Abraham Abbey,	Buffalo,	2 Arts

Freedman, Louis,	<i>New York City</i> , 4 Med. (N. Y. C.)
Freeland, Emily Roberta,	<i>Bowmanville, Ontario, Can.</i> , 1 Arts
Freer, Arthur Thomas,	<i>Gilbertsville</i> , 1 Law
Fredenrich, Oscar W. A.B.,	<i>New York City</i> , Sp. Med. (N. Y. C.)
Frenzel, John Peter, Jr.,	<i>Indianapolis, Ind.</i> , 4 Arts
Friedman, Edward Louis,	<i>New York City</i> , 1 Med. (N. Y. C.)
Freitag, John Daniel, Jr.,	<i>Brooklyn</i> , 2 Med. (N. Y. C.)
Frey, Harry Childs,	<i>Olean</i> , 3 Arts
Fries, William Hayes,	<i>Friendship</i> , 4 Arts
Fringer, Samuel Hall Tagart,	<i>Taneytown, Md.</i> , 1 Mech. Eng.
Frink, Horace Westlake,	<i>Hillsdale</i> , 2 Med. (N. Y. C.)
Fritch, Robert Peter,	<i>Reading, Pa.</i> , 2 Mech. Eng.
Fritts, Ada Catharine,	<i>Stewartsville, N. J.</i> , 3 Arts
Fryer, Charles Grant,	<i>Saratoga Springs</i> , Sr. Law
Fuchs, Jacob Nathan,	<i>New York City</i> , 1 Med. (N. Y. C.)
Fuller, Mabel Eleanor,	<i>Homer</i> , 1 Arts
Fullerton, Robert Wilson,	<i>St. Louis, Mo.</i> , 1 Arts
Fulton, Daniel Fraser,	<i>Yonkers</i> , 4 Civil Eng.
Funai, Francis Victor,	<i>New York City</i> , 1 Med. (N. Y. C.)
de Funiak, Herbert Rivers,	<i>Louisville, Ky.</i> , 1 Arts
Furman Fred John,	<i>Rutland, Pa.</i> , 2 Arts
Gaensslen, Carl August,	<i>Chicago, Ill.</i> , 1 Mech. Eng.
Gaertner, Maurice Charles,	<i>Wilkes-Barre, Pa.</i> , 1 Law
Gage, Victor Raymond,	<i>Wilmette, Ill.</i> , 1 Mech. Eng.
Gail, William Wallace,	<i>East Aurora</i> , 1 Arts
Gaither, Sara McDowell,	<i>New York City</i> , 3 Arts
Gallagher, Francis Edward,	<i>Salamanca</i> , 1 Arts
Gallagher, John Joseph,	<i>Ithaca</i> , 2 Veterinary
Gallagher, William Henry, Jr.,	<i>Saginaw, Mich.</i> , 2 Mech. Eng.
Galiaher, DeWitt Clinton, Jr.,	<i>Charleston, W. Va.</i> , 2 Mech. Eng.
Gallup, Frederick Loren,	<i>Norwich, Conn.</i> , 3 Arts
Gannett, Ray Willard,	<i>Clifton Springs</i> , 2 Veterinary
Gannon, John Francis, A. B.,	<i>New York City</i> , 2 Med. (N. Y. C.)
Garabrant, Joseph Edwin,	<i>Bloomfield, N. J.</i> , 1 Elect. Eng.
Garbat, Abraham Leon,	<i>New York City</i> , 1 Med. (N. Y. C.)
Garbi, Louis, Jr.,	<i>New York City</i> , 2 Civil Eng.
Gardner, Robert A.,	<i>Scranton, Pa.</i> , 2 Arts
Gardner, Robert Eli,	<i>DuBois, Pa.</i> , 1 Arts
Garlock, Morgan Bidleman,	<i>Little Falls</i> , 3 Arts
Garrett, Seymour Stanton,	<i>Oil City, Pa.</i> , 3 Civil Eng.
Garretson, Harry Douglas,	<i>Buffalo</i> , 2 Elect. Eng.
Gaskill, Selora Alice,	<i>Wilson</i> , 1 Arts

Gass, William Louis,	<i>Brooklyn,</i>	3 Mech. Eng.
Gates, Burton Noble,	<i>Worcester, Mass.,</i>	2 Agriculture
Gates, Leroy Grant,	<i>Oshkosh, Wis.,</i>	1 Mech. Eng.
Gatliff, James Blain,	<i>Williamsburg, Ky.,</i>	1 Mech. Eng.
Gauntlett, John McGraw,	<i>Ithaca,</i>	1 Mech. Eng.
Geer, Angeline Latham,	<i>Central Village, Conn.,</i>	3 Arts
Geer, Helena,	<i>Ithaca,</i>	4 Arts
Gehring, Herbert August,	<i>Cleveland, O.,</i>	4 Civil Eng.
Geiss, Marie Paula,	<i>Brooklyn,</i>	4 Arts
Gelser, Charles Sumner,	<i>Dalton,</i>	4 Civil Eng.
Genung, Fred William,	<i>Ithaca,</i>	1 Agriculture
Genung, George Leal,	<i>Waverly,</i>	2 Arts
Genung, Lewell T, A.B.,	<i>Binghamton,</i>	1 Medicine
George, Emma Louise, Ped.B.,	<i>Flushing,</i>	Sp. Arts
George, Sidney Gonzales,	<i>Fredonia,</i>	1 Civil Eng.
Gephart, William Wilson,	<i>Bellefonte, Pa.,</i>	1 Mech. Eng.
Gerhard, Catherine Hildegart,	<i>Newark, N. J.,</i>	1 Arts
Gerity, Marsden Thomas,	<i>Elmira,</i>	1 Mech. Eng.
Germann, Edward Henry,	<i>Brooklyn,</i>	2 Arts
Germann, Fred William,	<i>Brooklyn,</i>	1 Arts
Germanu, Howard William,	<i>Dayton, O.,</i>	Sp. Architecture
Gerwig, Walter Henry,	<i>Parkersburg, W. Va.,</i>	2 Civil Eng.
Gettinger, Joseph Herman,	<i>New York City,</i>	4 Med. (N.Y.C.)
Gibbs, Charles E,	<i>Sherman,</i>	2 Veterinary
Gibson, George Edward,	<i>New York City,</i>	4 Civil Eng.
Giesecke, Fred Otto Leopold,	<i>Buffalo,</i>	1 Mech. Eng.
Giessen, Kurt,	<i>Canton, O.,</i>	2 Civil Eng.
Gifford, Herbert Clyde,	<i>Oriskany,</i>	3 Med. (N. Y. C.)
Gilbert, Archibald Marvine,	<i>Washington, D. C.,</i>	3 Civil Eng.
Gilbert, Francis Smith,	<i>Duluth, Minn.,</i>	2 Mech. Eng.
Gilbert, Harold Addinsell,	<i>Brooklyn,</i>	2 Elect. Eng.
Gilbert, Walter Levi,	<i>Durham,</i>	Sp. Agriculture
Gilchrist, Jessie Lewis, M.P.,	<i>Hazleton, Pa.,</i>	Sp. Arts
Gilchrist, Thomas Byron,	<i>Glens Falls,</i>	1 Arts
Gilchrist, William Bartow,	<i>Cleveland, O.,</i>	2 Mech. Eng.
Giles, Irvin Kline,	<i>Reading, Pa.,</i>	1 Forestry
Gilkeson, Roy Fenimore,	<i>Worcester, Mass.,</i>	1 Law
Gill, Calvert Burke,	<i>Baltimore, Md.,</i>	1 Elect. Eng.
Gillespie, Clarence Lester,	<i>Hoosick Falls,</i>	4 Elect. Eng.
Gillett, Horace Wadsworth,	<i>Penn Yan,</i>	1 Arts
Gillies, William Browne,	<i>Chicago, Ill.,</i>	1 Mech. Eng.
Gillis, Hugh Lester,	<i>Macedon,</i>	1 Arts

Gilson, Beatrice Azalea,	<i>Wellesley Hills, Mass.,</i>	3 Arts
Giltner, Leigh,	<i>Ithaca,</i>	1 Forestry
Ginsberg, Charles,	<i>New York City,</i>	2 Med. (N. Y. C.)
Glasson, Edwin James,	<i>Ithaca,</i>	2 Agriculture
Glennan, Arthur Wyman,	<i>Washington, D. C.,</i>	1 Medicine
Glover, Charles Nicoll,	<i>Washingtonville,</i>	2 Mech. Eng.
Gluck, Isadore,	<i>New York City,</i>	1 Civil Eng.
Gobel, Frank Conant,	<i>Groton,</i>	4 Elect. Eng.
Goehle, Otto Louis, A.B.,	<i>Buffalo,</i>	2 Medicine
Goetter, Edward Baldwin,	<i>New York City,</i>	1 Architecture
Goettsch, Julius, A.B.,	<i>Davenport, Ia.,</i>	3 Mech Eng.
Goldberg, Isaac,	<i>New York City,</i>	1 Med. (N. Y. C.)
Goldberg, Jacob Martin,	<i>Brooklyn,</i>	3 Med. (N. Y. C.)
Golding, Harry Newport,	<i>Paterson, N. J.,</i>	1 Med. (N. Y. C.)
Goldsmith, Gustave Mosler,	<i>Cincinnati, O.,</i>	2 Mech. Eng.
Goldsmith, Harry,	<i>Binghamton,</i>	Sr. Law
Goldsmith, Irving Israel,	<i>Saratoga Springs,</i>	4 Arts
Goldstein, David,	<i>Brooklyn,</i>	1 Med. (N. Y. C.)
Goldstein, Isidore,	<i>New York City,</i>	3 Med. (N. Y. C.)
Goldwater, Sidney James, B.S.,	<i>New York City,</i>	4 Mech. Eng.
Gomez, Richard Alvarez, A.B.,	<i>Mayaguez, Porto Rico,</i>	Sr. Law
Good, Clinton Edward,	<i>Springfield, Ill.,</i>	1 Civil Eng.
Goodrich, Charles Edward,	<i>Washington, D. C.,</i>	3 Arts
Goodrich, Clinton Raymond,	<i>Minonk, Ill.,</i>	2 Civil Eng.
Goodrich, Joseph Edwards,	<i>Glastonbury, Conn.,</i>	2 Arts
Goodwin, Abby May,	<i>Ithaca,</i>	3 Arts
Goodwin, Frank Perry,	<i>Jamestown,</i>	1 Medicine
Goodwin, Norman,	<i>New York City,</i>	3 Arts, (1 Med.)
Gordon, Arthur,	<i>Caledonia,</i>	3 Arts
Gordon, Charles Albert,	<i>Brooklyn,</i>	2 Med. (N. Y. C.)
Gorrell, John Stacy,	<i>Aikin, Md.,</i>	1 Mech. Eng.
Gould, Clark Sumner,	<i>Walton,</i>	4 Med. (N. Y. C.)
Gould, Jewell Melissa,	<i>Denver, Colo.,</i>	1 Arts
Gow, Edward Cochran,	<i>Schuylerville,</i>	1 Medicine
Grady, Claude Henry,	<i>Cuba,</i>	2 Architecture
Graham, Susan Philippa,	<i>Fulton,</i>	3 Arts
de Grain, Edward Reinhold Suiva,	<i>Washington, D.C.,</i>	2 Mech. Eng.
Granbury, Eugene Thurman,	<i>New York City,</i>	2 Civil Eng.
Grant, George Richard,	<i>Cape Vincent,</i>	3 Arts
Grant, Joseph Roa,	<i>Atwater,</i>	3 Med. (N.Y.C.)
Grant, Roderick David,	<i>Cleveland, O.,</i>	2 Mech. Eng.
Grattan, George William,	<i>Buffalo,</i>	Jr. Law

Grauman, Emma,	<i>Louisville, Ky.,</i>	1 Arts
Graves, Edith Regina,	<i>Ithaca,</i>	4 Arts
Graves, Gaylord Willis,	<i>Ithaca,</i>	2 Arts
Green, Arthur Randolph,	<i>Saratoga Springs,</i>	4 Med. (N.Y.C.)
Green, Henry Edward,	<i>Hoosac,</i>	2 Civil Eng.
Greenburg, Henry,	<i>Brooklyn,</i>	1 Arts
Greenberg, Max,	<i>New York City,</i>	2 Arts
Greene, Antoinette,	<i>Troy,</i>	1 Arts
Greenfield, Samuel,	<i>New York City,</i>	3 Med. (N.Y.C.)
Greenwood, Ernest Hervey,	<i>Williamsport, Pa.,</i>	2 Arts
Gregg, George Woodlief,	<i>Batavia, O.,</i>	2 Medicine
Gregg, Willis Ray,	<i>Phoenix,</i>	4 Arts
Greiner, Burt Henry,	<i>Dayton,</i>	1 Law
Gresham, Frank Spencer,	<i>Galveston, Tex.,</i>	1 Civil Eng.
Gridley, Haines,	<i>Elmira,</i>	3 Civil Eng.
Grier, Arthur Jay, B.A.,	<i>Monmouth, Ill.,</i>	1 Civil Eng.
Grier, John Cowdrey,	<i>Goshen,</i>	1 Law
Griffin, Daniel George,	<i>Watertown,</i>	4 Arts
Griffin, Emma Zoe,	<i>Binghamton,</i>	3 Arts
Griffith, John Martin,	<i>Evanston, Ill.,</i>	4 Arts
Griffith, Lester Carman,	<i>East Rockaway,</i>	2 Forestry
Groben, Charles Edward,	<i>Buffalo,</i>	Sp. Agriculture
Groch, Nicholas Colonel,	<i>Sandusky, O.,</i>	1 Architecture
Groesbeck, Harvey Paterson,	<i>Hoosick Falls,</i>	2 Medicine
Gross, Louis,	<i>Troy,</i>	2 Mech. Eng.
Grossman, William, A.B.,	<i>New York City,</i>	3 Med. (N. Y. C.)
Grover, Philip Norman,	<i>Portland, Me.,</i>	1 Law
Gruner, Clarence Elbert,	<i>Brooklyn,</i>	1 Mech. Eng.
Guildford, Charles Thomas, B.S.,	<i>Torrington, Conn.,</i>	2 Elect. Eng
Gulick, Lewis Ransom,	<i>Lockport,</i>	3 Arts
Gundelfinger, Walter David,	<i>Fresno, Calif.,</i>	3 Mech. Eng.
Gurtov, Jacob,	<i>New York City,</i>	1 Med. (N. Y. C.)
Guss, Walter Granville,	<i>Washington, D. C.,</i>	1 Civil Eng.
Hackett, Holland Berkeley,	<i>Easton, Pa.,</i>	1 Mech. Eng.
Hackstaff, Frederick William,	<i>Brooklyn,</i>	2 Mech. Eng.
Haefner, Carl William, Jr.,	<i>Elmira,</i>	2 Civil Eng.
Haines, Lena Ormelle,	<i>Lockport,</i>	1 Arts
Haines, Robert Wade,	<i>Goshen,</i>	1 Elect. Eng.
Haire, Andrew Joseph, Jr.,	<i>Derby, Conn.,</i>	2 Mech. Eng.
Hale, Harry Munro,	<i>Elbridge,</i>	1 Forestry
Hale, Moseley,	<i>Glastonbury, Conn.,</i>	Sp. Agriculture
Hall, David White,	<i>Chicago, Ill.,</i>	1 Law

Hall, John Mead,	<i>Norwich,</i>	3 Med. (N. Y. C.)
Hall, Quincy Allen,	<i>Milford, Ill.,</i>	1 Mech. Eng.
Hall, Ruth Marion,	<i>Gouverneur,</i>	3 Arts
Hall, Selden Hamlyn,	<i>Buffalo,</i>	Sp. Elect. Eng.
Halleck, Harry Gerald,	<i>Chicago, Ill.,</i>	1 Mech. Eng.
Halliday, Morris Samuel,	<i>Ithaca,</i>	1 Law
Halpin, Leo Aloysius,	<i>New York City,</i>	1 Med. (N. Y. C.)
Halpin, Robert John,	<i>Odessa,</i>	2 Arts
Halsey, Grant Hugh,	<i>West Groton,</i>	Sr. Law
Halsey, Ruby Helen,	<i>Ithaca,</i>	4 Arts
Hamilton, Melancthon,	<i>Cicero,</i>	1 Veterinary
Hamlin, Harold Franklin,	<i>Sharon, Conn.,</i>	2 Civil Eng.
Hammond, Frederick Hugh, B.L.,	<i>Geneva,</i>	4 Arts
Hammond, James Chesney,	<i>Collinwood, O.,</i>	1 Civil Eng.
Hammond, Robert Bertine,	<i>South Millbrook,</i>	2 Medicine
Hanford, Isa Belle,	<i>Walton,</i>	4 Arts
Hanigan, Belle,	<i>Alplaus,</i>	1 Arts
Hauley, John Patrick,	<i>Stafford Springs, Conn.,</i>	1 Med. (N. Y. C.)
Hann, Arthur Edward,	<i>Summit, N. J.,</i>	1 Architecture
Hansen, Anthony Hans, A.B.,	<i>Norwich,</i>	4 Med. (N. Y. C.)
Harby, George Marsden,	<i>Delhi,</i>	1 Law
Hard, Arthur Warden,	<i>Ilion,</i>	4 Civil Eng.
Harding, Harry E,	<i>Hume,</i>	1 Arts
Harding, Robert John,	<i>Chatham,</i>	4 Civil Eng.
Harger, Wilson Gardner,	<i>Rochester,</i>	1 Civil Eng.
Haring, Clarence Melvin,	<i>Addison,</i>	2 Veterinary
Harkness, Andrew Marr,	<i>Pittston, Pa.,</i>	1 Mech. Eng.
Harman, Herbert Heury, B.A.,	<i>Williamsport, Pa.,</i>	1 Civil Eng.
Harmon, Charles Stauford,	<i>Chicago, Ill.,</i>	1 Arts
Harmon, William Robertson,	<i>Portland, Me.,</i>	1 Civil Eng.
Harnden, Arthur DeWitt,	<i>Waverly,</i>	Jr. Law
Harpending, Pierre,	<i>Dundee,</i>	1 Arts
Harrington, Arthur Melvin,	<i>Germantown, Phila., Pa.,</i>	1 Mech. Eng.
Harris, George Francis,	<i>Binghamton,</i>	3 Med. (N. Y. C.)
Harris, Jesse Eugene,	<i>West Upton, Mass.,</i>	2 Mech. Eng.
Harris, Mitchell,	<i>Hornellsville,</i>	2 Arts, (1 Med.)
Harris, Roy Gould,	<i>Cleveland, O.,</i>	1 Arts
Harris, Sadie,	<i>Ithaca,</i>	2 Arts
Harris, Wilson Park,	<i>Brooklyn,</i>	Sp. Forestry
Harrison, Howard Griswold,	<i>Addison,</i>	1 Arts
Harrison, Roland Rathbun,	<i>Binghamton,</i>	4 Arts
Hart, Carlos Dempster,	<i>Turin,</i>	1 Elect. Eng.
Hart, Harold Leslie,	<i>Ithaca,</i>	4 Arts

Hart, Haynes Lloyd,	<i>Auburn,</i>	1 Mech. Eng.
Hart, Louisa Helena,	<i>Ranipettai, N. Arcot, India,</i>	Sp. Med. (N. Y. C.)
Hartley, Chester Arthur,	<i>Gouverneur,</i>	Sp. Agriculture
Hartman, James Denniston,	<i>Holidaysburg, Pa.,</i>	4 Mech. Eng.
Hartnett, Edward Hazard,	<i>Jersey City, N. J.,</i>	2 Mech. Eng.
Hartwig, Max,	<i>Buffalo,</i>	2 Mech. Eng.
Harwick, Flora Annette,	<i>Jacksonville, Fla.,</i>	4 Arts
Harwood, John Marville,	<i>Appleton,</i>	Jr. Law
Hasbrouck, Henry Crane,	<i>Troy,</i>	3 Arts
Haskell, Frank Edward,	<i>Holyoke, Mass.,</i>	1 Elect. Eng.
Haslett, Henry Ernest,	<i>Seneca,</i>	1 Agr.
Hassett, Thomas Joseph,	<i>Fishkill-on-Hudson,</i>	1 Law
Hastings, Louise Parmalee,	<i>Homer,</i>	1 Arts
Hatfield, Hazel May,	<i>Newark, N. J.,</i>	1 Arts
Haupt, Max,	<i>Homestead, Pa.,</i>	1 Civil Eng.
Hawkesworth, Darnley Iredelle,	<i>Washington, D. C.,</i>	2 Agriculture
Hawley, Everett Malcolm,	<i>Philadelphia, Pa.,</i>	2 Mech. Eng.
Hawley, Lee Fred,	<i>East Randolph,</i>	4 Arts
Hazlewood, Stuart,	<i>Grand Rapids, Mich.,</i>	4 Mech. Eng.
Heath, Sydney Lester,	<i>Shortsville,</i>	2 Arts
Heckheimer, Herbert,	<i>Baltimore, Md.,</i>	1 Mech. Eng.
Heggem, Chalmer Raymond,	<i>Massilon, O.,</i>	Jr. Law
Heim, John Alfred,	<i>New York City,</i>	2 Med. (N. Y. C.)
Heist, Lee Harrar,	<i>Ebensburg, Pa.,</i>	1 Elect. Eng.
Heitshu, William Augustus, Jr.,	<i>Scranton, Pa.,</i>	4 Mech. Eng.
Heizmann, Lewis Joseph,	<i>Reading, Pa.,</i>	2 Mech. Eng.
Heller, Harley Howard,	<i>Rochester, Pa.,</i>	4 Mech. Eng.
Helm, Harold, LL.B.,	<i>Moravia,</i>	1 Arts
Helm, John La Rue, Jr.,	<i>Louisville, Ky.,</i>	1 Arts
Hemingway, John Carlisle,	<i>Washington, D. C.,</i>	1 Mech. Eng.
Hemphill, James Mitchell,	<i>West Chester, Pa.,</i>	1 Arts
Hendricks, Ernest Demarest,	<i>Kingston,</i>	4 Civil Eng.
Hendrickson, Everett House,	<i>Brooklyn,</i>	1 Elect. Eng.
Hennessy, Elizabeth Irene,	<i>Binghamton,</i>	2 Arts
Henry, Hugh Price,	<i>Eau Claire, Wis.,</i>	Jr. Law
Herder, Cherrie Marie,	<i>Brooklyn,</i>	1 Arts
Herdman, William James,	<i>Jerseyville, Ind.,</i>	1 Elect. Eng.
Hermes, Benjamin Post,	<i>Mount Vernon,</i>	2 Mech. Eng.
Herr, Benjamin Musser,	<i>Lancaster, Pa.,</i>	1 Mech. Eng.
Herrick, John Rutherford, B.A.,	<i>Peekskill,</i>	2 Med. (N. Y. C.)
Herrick, Seymour Morton,	<i>Matanzas, Cuba,</i>	1 Agriculture

Hertz, Julius Jacob,	<i>New York City,</i> 4 Med. (N. Y. C.)
Herwig, George Daniel,	<i>Pittsburg, Pa.,</i> 1 Civil Eng.
Heuser, Gerhard William,	<i>Brooklyn,</i> 3 Med. (N. Y. C.)
Hibbard, Leonard James,	<i>Northampton, Mass.,</i> 3 Mech. Eng.
Hickman, Spencer Eastman,	<i>Buffalo,</i> 2 Mech. Eng.
Hicks, William Edgar,	<i>Cedarhurst,</i> 1 Mech. Eng.
Higgins, Max Smith,	<i>Cortland,</i> 1 Mech. Eng.
Higgins, Samuel McPherson, A.B.,	<i>Flemington, N. J.,</i> Sp. Forestry
Hildebrant, Bertram Augustus,	<i>Ithaca,</i> 1 Mech. Eng.
Hilkowich, Abe Maurice,	<i>New York City,</i> 3 Med. (N. Y. C.)
Hill, George Sumner,	<i>Gouverneur,</i> 2 Arts
Hill, James DeWitt, Jr.,	<i>Scottdale, Pa.,</i> 2 Mech. Eng.
Hill, Whiteside, 2nd, B.A.,	<i>Greenwich,</i> 2 Elect. Eng.
Hillebrand, William Arthur,	<i>Washington, D. C.,</i> 2 Arts
Hiller, Francis Hemperley,	<i>Cobleskill,</i> 4 Arts
Hills, Rollin,	<i>Brooklyn,</i> 2 Med. (N. Y. C.)
Hiltebrant, Oscar Raymond,	<i>Kingston,</i> 1 Mech. Eng.
Hinckley, John Fay,	<i>Cambridge Spr., Pa.</i> 3 Mech. Eng.
Hinz, William,	<i>New York City,</i> 2 Med. (N. Y. C.)
Hirsch, Elsie Henrietta,	<i>Newark, N. J.,</i> 4 Arts
Hitchcock, Edward Bering,	<i>Decatur, Ill.,</i> 1 Law
Hoagland, Frederick Baker,	<i>Paterson, N. J.,</i> 1 Elect. Eng.
Hoard, Prescott Dygert,	<i>Herkimer,</i> 2 Civil Eng.
Hobbie, Richard Hayes,	<i>Tonawanda,</i> 3 Arts
Hochbaum, Hans Weller,	<i>Chicago, Ill.,</i> Sp. Agriculture
Hodge, Seth Evans,	<i>Cincinnati, O.,</i> 2 Elect. Eng.
Hodge, William Washington,	<i>Philadelphia, Pa.,</i> 2 Mech. Eng.
Hoefinghoff, Arthur Charles,	<i>Cincinnati, O.,</i> 1 Mech. Eng.
Hoening, Louis John,	<i>Lockport,</i> Jr. Law
Hoerle, Horace Poinier,	<i>Ridgewood, N. J.,</i> 4 Med. (N. Y. C.)
Hoffman, Albert Baldwin,	<i>New York City,</i> 1 Elect. Eng.
Hogan, Lucy Agnes,	<i>Olean,</i> 3 Arts
Hogan, Margaret Elizabeth,	<i>Olean,</i> 2 Arts
Hogan, William Edward,	<i>Bridgeport, Conn.,</i> 1 Mech. Eng.
Hogan, William James,	<i>Oxford,</i> 3 Arts
Hoge, Joseph Franklin Dix,	<i>Baltimore,</i> 1 Elect. Eng.
Hogle, William Manville,	<i>Decorah, Ia.,</i> 2 Mech. Eng.
Hohner, Edwin,	<i>Buffalo,</i> 1 Elect. Eng.
Holden, Ellen Greene,	<i>Buffalo,</i> 3 Arts
Holden, Mary Lathrop,	<i>Buffalo,</i> 4 Arts
Holden, Sanford Scribner,	<i>Chicago, Ill.,</i> 1 Mech. Eng.
Hollander, Samuel,	<i>New York City,</i> 1 Med. (N. Y. C.)

Holliday, John Salisbury, A. B., A. M.,	<i>Wilkinsburg, Pa.,</i>	2 Mech. Eng.
Holliday, Robert Fleming,	<i>Dover, Del.,</i>	2 Civil Eng.
Holman, Webster Palmer,	<i>Sergeants Bluff, Ia.,</i>	2 Mech. Eng.
Holmes, Alldren Allgood, B.S.,	<i>Atlanta, Ga.,</i>	3 Mech. Eng.
Holmes, Edward,	<i>Washington, D. C.,</i>	1 Civil Eng.
Holmes, Henry Everett,	<i>N. Troy,</i>	1 Arts
Holmes, Howard Abbott,	<i>Youngstown, O.,</i>	1 Mech. Eng.
Holmes, Iva May,	<i>Gouverneur,</i>	1 Arts
Holmes, Winthrop,	<i>Orange, N. J.,</i>	1 Civil Eng.
Holt, Charles Parker,	<i>San Francisco, Cal.,</i>	4 Arts
Holton, Edward Newton,	<i>Montclair, N. J.,</i>	1 Agriculture
Holz, Fred Herbert,	<i>Cincinnati, O.,</i>	2 Mech. Eng.
Hoobler, Bert Raymond, B.S.,	<i>Saginaw, Mich.,</i>	2 Medicine
Hood, Alfred Gammon,	<i>Corning,</i>	2 Mech. Eng.
Hooker, George Haines, A. B.,	<i>Watertown,</i>	Jr. Law
Hooker, Lona Emily,	<i>Ithaca,</i>	2 Arts
Hooley, Francis George,	<i>Little Falls,</i>	Jr. Law
Hopkins, Howard Corwin,	<i>Oil City, Pa.,</i>	4 Civil Eng.
Hopper, Herbert Andrew,	<i>Ithaca,</i>	4 Agriculture
Hoppin, Frederick Layton,	<i>Buffalo,</i>	1 Mech. Eng.
Hoppin, John Keene,	<i>Buffalo,</i>	2 Mech. Eng.
Hopwood, James Osborne,	<i>Philadelphia, Pa.,</i>	1 Forestry
Horn, Stanley Granger,	<i>Brooklyn,</i>	2 Arts
Hornbrook, Clara Mabel,	<i>Cambridge, O.,</i>	2 Arts
Horowitz, Alfred Joseph,	<i>New York City,</i>	2 Med. (N. Y. C.)
Horstman, August George,	<i>Brooklyn,</i>	1 Med. (N. Y. C.)
Horton, Harvey Starring,	<i>Silver Creek,</i>	1 Arch.
Horwitt, Solomon,	<i>New York City,</i>	1 Med. (N. Y. C.)
Horwood, John Wesley,	<i>Hoboken, N. J.,</i>	1 Arts
Hoskino, Junkich,	<i>Asaka, Japan,</i>	1 Elect. Eng.
Hoskot, Ralph Elwood,	<i>Dayton, O.,</i>	Jr. Law
Howard, Charles Walter,	<i>Ogdensburg,</i>	3 Arts
Howard, Frederic H P,	<i>Chicago, Ill.,</i>	4 Mech. Eng.
Howard, J Clare,	<i>Franklinville,</i>	2 Elect. Eng.
Howard, Nelson Webster,	<i>Ogdensburg,</i>	1 Arts
Howe, Charles Burton,	<i>Clarence,</i>	4 Elect. Eng.
Howe, Eugene Clarence,	<i>Brooklyn,</i>	3 Arts
Howe, Harry Northrop,	<i>Washington, D. C.,</i>	3 Civil Eng.
Howe, Locy,	<i>Memphis,</i>	1 Arts
Howland, Clarence Otis,	<i>Geneva,</i>	1 Mech. Eng.
Howland, Frank Clarence,	<i>Akron, O.,</i>	4 Mech. Eng.
Howland, Sarah Maud De Valle,	<i>Binghamton,</i>	1 Arts

Hoxie, Wyckoff,	<i>Union Springs,</i>	4 Arts
Hoyt, Raymond Dudley,	<i>Cambridge,</i>	3 Mech. Eng.
Hubbard, Franklin Armstrong,	<i>Richmond Hill,</i>	1 Arts
Hubbard, Lewis Kellsey,	<i>Middletown, Conn.,</i>	3 Elect. Eng.
Hubbard, Robert Youngs,	<i>New York City,</i>	2 Med. (N. Y. C.)
Hubbell, Hiram Gaylord,	<i>Stamford,</i>	2 Med. (N. Y. C.)
Huber, Frederick William,	<i>Baltimore, Md.,</i>	4 Civil Eng.
Hudson, Andrew James, B.S.,	<i>New York City,</i>	4 Mech. Eng.
Hudson, Neal Morehouse,	<i>Weedsport,</i>	1 Elect. Eng.
Hue, Harold Peirce,	<i>Warren, Pa.,</i>	1 Mech. Eng.
Huestis, Edna Frances,	<i>Troy,</i>	1 Arts
Huff, Barton,	<i>New York City,</i>	1 Med. (N. Y. C.)
Huger, Alfred,	<i>Summerville, S. C.,</i>	Sr. Law
Hughes, Charles Reginald,	<i>Frederick, Md.,</i>	1 Civil Eng.
Hughes, David Arthur, B.L., M.L., Ph.D.,	<i>Ithaca,</i>	3 Veterinary
Hulburd, Lucius Sanford,	<i>Brasher Falls,</i>	4 Civil Eng.
Hull, Anna May,	<i>New Paltz,</i>	Sp. Arts
Hull, John Donald,	<i>Scranton, Pa.,</i>	4 Mech. Eng.
Humphrey, Fred Bemis,	<i>Elmira,</i>	Jr. Law
Humphreys, Eva Frances,	<i>Ludlowville,</i>	4 Arts
Hungerford, Jay Clark,	<i>Ithaca,</i>	2 Agriculture
Hunkins, Darius Sidney,	<i>St. Louis, Mo.,</i>	3 Mech. Eng.
Hunt, Andrew Dickson,	<i>New York City,</i>	2 Mech. Eng.
Hunt, Sanford Beebe,	<i>Chatham,</i>	1 Forestry
Hunt, Sylvester Henry,	<i>Long Branch, N. J.,</i>	3 Mech. Eng.
Hunter, Charles Welsh,	<i>Baltimore, Md.,</i>	2 Mech. Eng.
Hunter, Frank,	<i>Cornwall-on-Hudson,</i>	3 Arts
Hunter, Robert Williamson,	<i>Norfolk, Va.,</i>	2 Mech. Eng.
Huntoon, Frank McElroy,	<i>Newark,</i>	4 Med. (N. Y. C.)
Hurlbut, John,	<i>Ithaca,</i>	2 Mech. Eng.
Hutcheson, Louise, A.B.,	<i>Washington, D. C.,</i>	3 Med. (N. Y. C.)
Hutchison, James Hervey,	<i>Elkview, Pa.,</i>	3 Civil Eng.
Hutton, Clyde Demarest,	<i>Ridgewood, N. J.,</i>	1 Arts
Hutton, Robert Leroy,	<i>Ridgewood, N. J.,</i>	4 Arts, (2 Med.)
Hyde, Charles William,	<i>Corning,</i>	3 Arts
Hyde, Joseph Albert, Jr.,	<i>Deer Lodge, Mont.,</i>	1 Arts
Hyman, Charles,	<i>New York City,</i>	2 Med. (N. Y. C.)
Hyman, Samuel Max,	<i>New York City,</i>	2 Med. (N. Y. C.)
Illston, John William,	<i>Ithaca,</i>	Sp. Agriculture
Imbrie, William Morris, Jr.,	<i>South Orange, N. J.,</i>	3 Mech. Eng.
Ingham, Florence Dora,	<i>Ithaca,</i>	2 Arts
Ingham, Percy Bowman,	<i>Wilkes-Barre, Pa.,</i>	1 Arch.

Inman, Grace Edith,	<i>Plattsburg,</i>	4 Arts
Inslee, Ralph Hamilton,	<i>Newton, N. J.,</i>	2 Civil Eng.
Irish, Frederic Joseph,	<i>Paterson,</i>	1 Elect. Eng.
Isaacs, Harry Ezekiel,	<i>West Hoboken, N. J.,</i>	2 Med.(N.Y.C.)
Isham, Helen,	<i>Buffalo,</i>	4 Arts
Jack, Harry Matthews,	<i>Bradford, Pa.,</i>	1 Mech. Eng.
Jacobs, Edward Clarence,	<i>Delhi,</i>	3 Arts
Jacobs, Julius Lilien, B.S.,	<i>Atlanta, Tex.,</i>	3 Civil Eng.
Jachnowitz, Maurice Arthur,	<i>New York City,</i>	4 Med. (N. Y. C.)
Jackson, Herbert Spencer,	<i>Ithaca,</i>	2 Arts
Jackson, Nellie Wheeler,	<i>Reading, Pa.,</i>	Sp. Arts
James, Lewis Roscoe,	<i>Braddock, Pa.,</i>	3 Mech. Eng.
Jameson, Everett Williams,	<i>Buffalo,</i>	3 Arts
Jenkins, Alceste Roxanua,	<i>Brooklyn,</i>	2 Arts
Jenness, Edith Samantha,	<i>Brooklyn,</i>	3 Arts
Jennings, Hugh,	<i>Moosic, Pa.,</i>	Sp. Law
Jewett, Harold Frederick,	<i>Hoosick Falls,</i>	4 Mech. Eng,
Joachim, Henry,	<i>Brooklyn,</i>	3 Med. (N. Y. C.)
Johnson, Carlton Perry,	<i>Brooklyn,</i>	1 Arts
Johnson, Clinton Watkins,	<i>Niagara Falls,</i>	Sr. Law
Johnson, Dwight Fenn,	<i>Wolcott,</i>	4 Med. (N. Y. C.)
Johnson, Eugene Cooper,	<i>Ithaca,</i>	2 Civil Eng.
Johnson, Elisha Martin,	<i>Olean,</i>	1 Mech. Eng.
Johnson, Frances Ethel,	<i>Binghamton,</i>	2 Arts
Johnson, George Tewksbury,	<i>Portsmouth, O.,</i>	1 Mech. Eng.
Johnson, Harry Disbrow, Jr.,	<i>South Bend, Ind.,</i>	2 Elect. Eng.
Johnson, Lindley Wilkeson,	<i>Youngstown,</i>	1 Forestry
Johnson, Milton John,	<i>Jamestown,</i>	1 Med.
Johnson, Nathan Clarke,	<i>Pittston, Pa.,</i>	1 Mech. Eng.
Johnston, Andrew Langstoff,	<i>Richmond, Va.,</i>	3 Elect. Eng.
Johnston, John White,	<i>Rochester,</i>	3 Arts
Johnston, Oscar Percy, M.S., Ph.B.,	<i>Vancleve, Iowa,</i>	2 Medicine
Johnston, Robert Marsh,	<i>Muncie, Ind.,</i>	3 Mech. Eng.
Johnston, William Rendell, Jr.,	<i>East Orange, N. J.,</i>	2 Civil Eng.
Johnston, William Robert,	<i>Oak Park, Ill.,</i>	2 Arts
Jones, Annie,	<i>Eatonton, Ga.,</i>	Sp. Arts
Jones, Alfred Harrison,	<i>Ithaca,</i>	3 Arts
Jones, Arthur Lucas,	<i>Ithaca,</i>	3 Elect. Eng.
Jones, Arthur Locke,	<i>Buffalo,</i>	1 Mech. Eng.
Jones, Bevan,	<i>New York City,</i>	2 Civil Eng.
Jones, Bradley Fisher,	<i>Syracuse,</i>	4 Arts

Jones, George Francis, A.B.,	<i>Mountville, S. C.,</i>	1 Agr.
Jones, Harold Donnell,	<i>Portland, Me.,</i>	1 Civil Eng.
Jones, Ira Owen,	<i>Chicago, Ill.,</i>	1 Mech. Eng.
Jones, John Lucien,	<i>Buffalo,</i>	1 Mech. Eng.
Jones, Lloyd Balderston,	<i>West Grove, Pa.,</i>	3 Mech. Eng.
Jones, Sherman, A.B.,	<i>Hamilton,</i>	4 Elect. Eng.
Jones, Thomas Samuel, Jr.,	<i>Utica,</i>	3 Arts
Josephson, Joseph,	<i>New York City,</i>	1 Med. (N.Y.C.)
Joslyn, Raymund Elbert,	<i>Jersey City Heights, N. J.,</i>	2 Mech. Eng.
Joslyn, Royal Cuthbert,	<i>Jersey City Heights, N. J.,</i>	1 Civil Eng.
Judd, Caroline Whallon,	<i>Port Henry,</i>	1 Arts
Judd, Evarest Amasa,	<i>Batavia,</i>	Sr. Law
Judd, Harold Booth,	<i>Bethel, Conn.,</i>	3 Med. (N.Y.C.)
Judd, Mark Waldo,	<i>Batavia,</i>	1 Law
Judd, Mary Douglass,	<i>Port Henry,</i>	3 Arts
Judson, Katharine Berry,	<i>Ithaca,</i>	3 Arts
Justin, Joel DeWitt,	<i>Rochester,</i>	1 Mech. Eng.
Kaufmann, Marcel,	<i>New York City,</i>	1 Med. (N.Y.C.)
Kalwisky, William,	<i>Syracuse,</i>	1 Elect. Eng.
Karaline, Anna,	<i>New York City,</i>	2 Arts
Kaufhold, Frank,	<i>Newark, N. J.,</i>	1 Med.
Katzenstein, William, B.S.,	<i>New York City,</i>	4 Mech. Eng.
Kearns, Thomas Joseph, B.A.,	<i>Brooklyn,</i>	1 Med. (N.Y.C.)
Keebler, Kenneth,	<i>Kansas City, Mo.,</i>	1 Arts
Keegan, Lora Teressa,	<i>Ithaca,</i>	1 Agriculture
Keeney, Clarence Rufus,	<i>Rome,</i>	1 Forestry
Kees, Frederica Christiana,	<i>Newark, N. J.,</i>	4 Arts
Keet, Ernest Ellsworth,	<i>Saranac Lake,</i>	1 Med.
Keith, Arthur Rubel,	<i>Rome,</i>	2 Arts
Keller, Arthur Ripont,	<i>Buffalo,</i>	4 Civil Eng.
Keller, Lena Marguerite,	<i>Ilion,</i>	4 Arts
Kelleran, Charles Russell,	<i>Buffalo,</i>	1 Law
Kelleran, Sydney Hovey,	<i>Buffalo,</i>	Sr. Law
Kelley, Charles Earl,	<i>Dayton, O.,</i>	1 Law
Kelley, Elias Heathman,	<i>Dayton, O.,</i>	Jr. Law
Kelley, Manley Spencer, Jr.,	<i>Jamestown,</i>	1 Arts
Kelly, Ernest,	<i>Washington, D.C.,</i>	Sp. Agriculture
Kelly, James Bernard,	<i>Scranton, Pa.,</i>	2 Mech. Eng.
Kelly, James Lewis,	<i>Porterville,</i>	1 Civil Eng.
Kelly, John Francis,	<i>Scranton, Pa.,</i>	1 Arts
Kellogg, Alfred Ostrom,	<i>Dobbs Ferry,</i>	2 Mech. Eng.
Kellogg, Charles Potter,	<i>Grand Rapids, Mich.,</i>	3 Architecture

Kellogg, James Gifford,	<i>Chicago, Ill.,</i>	2 Mech. Eng.
Kelsey, Charles Everett,	<i>North Tonawanda,</i>	4 Arts
Kelsey, Earl Hewes,	<i>North Tonawanda,</i>	2 Arts
Kelsey, Ernest Westervelt,	<i>Ithaca,</i>	1 Law
Kelsey, Weston Maynard,	<i>Salamanca,</i>	1 Arts
Kemp, Maurice,	<i>Catasauqua, Pa.,</i>	1 Med. (N.Y.C.)
Kennedy, George De Hart,	<i>Buffalo,</i>	3 Med. (N.Y.C.)
Kennedy, William Garfield,	<i>Rib Lake, Wis.,</i>	1 Arts
Kennedy, William Mark,	<i>Oberlin, O.,</i>	4 Architecture
Kennehan, George Patrick,	<i>Brasher Falls,</i>	2 Mech. Eng.
Kenneweg, Albert Henry,	<i>Cumberland, Md.,</i>	1 Elect. Eng.
Kent, Ralph Sherlock, A.B.,	<i>Ithaca,</i>	Jr. Law
Kephart, Edwin Murray, B.S.,	<i>New Castle, Ky.,</i>	4 Elect. Eng.
Kern, John Frank Hamlet,	<i>Dunkirk,</i>	3 Arts
Kernan, Warwick Joseph, A.B.,	<i>Utica,</i>	1 Law
Kerr, Edith,	<i>Titusville, Pa.,</i>	1 Arts
Kerr, William Murray,	<i>New York City,</i>	2 Med. (N. Y. C.)
Ketcham, Cornelius Starlyu Newell,	<i>Pittsford,</i>	4 Elect. Eng.
Ketcham, Harry Burton,	<i>Middletown,</i>	1 Mech. Eng.
Ketchum, Lawrence Temple,	<i>Elmira,</i>	1 Mech. Eng.
Kiddie, John,	<i>Van Anda, B.C.,</i>	3 Civil Eng.
Kieb, Raymond Francis Charles,	<i>Lowville,</i>	3 Med. (N. Y. C.)
Kiep, Adeline Carrie,	<i>Brooklyn,</i>	2 Arts
Kilburn, Lyman Annise,	<i>Gowanda,</i>	Sr. Law
Kinavan, Josette Marie,	<i>Brooklyn,</i>	2 Arts
King, Clifford Marshall, A.B.,	<i>Sandusky, O.,</i>	3 Civil Eng.
King, Harry Swayne,	<i>Toledo, O.,</i>	1 Arts
King, Walter Edwards, A.B.,	<i>Kinsman, O.,</i>	1 Med.
Kingsland, Roger Leverick,	<i>Nutley, N. J.,</i>	1 Elect. Eng.
Kinne, Hiram Earl,	<i>Hartwick Seminary,</i>	2 Agriculture
Kinney, Carl Garfield,	<i>Newton, Kans.,</i>	4 Arts
Kinney, Jay P, A.B.,	<i>Snowdon,</i>	2 Forestry
Kinney, Price Witter,	<i>Lyons,</i>	1 Mech. Eng.
Kinsman, Cyrus Hillman,	<i>Plainfield, N. J.,</i>	2 Mech. Eng.
Kipp, Roy Henry,	<i>Shortsville,</i>	3 Mech. Eng.
Kirkland, Bert Persons,	<i>Smith's Mills,</i>	1 Forestry
Kissel, Jacob,	<i>Brooklyn,</i>	1 Med. (N. Y. C.)
Kissick, Joseph, Jr.,	<i>New York City,</i>	1 Mech. Eng.
Kitchen, Karl Kingsley,	<i>Cleveland, O.,</i>	1 Mech. Eng.
Kittle, John Sloane,	<i>Indianapolis, Ind.,</i>	1 Civil Eng.
Klaber, John James,	<i>New York City,</i>	2 Civil Eng.
Klausner, Alexander,	<i>New York City,</i>	1 Med. (N. Y. C.)

Klein, Morris James,	<i>New York City,</i>	2 Med. (N. Y. C.)
Kline, Bertha,	<i>Forest Home,</i>	3 Arts
Kling, Herbert Allen,	<i>Woodbine, Iowa,</i>	2 Mech. Eng.
Klock, Nellie Adah,	<i>St. Johnsville,</i>	1 Arts
Kluepfel, Philip Alexander,	<i>Utica,</i>	4 Arts
Knapp, John Wiltsie,	<i>Fairmount,</i>	Sr. Law
Knapp, Leland Garfield,	<i>Plattsburg,</i>	2 Mech. Eng.
Knapp, Ralph Waldo,	<i>Waverly,</i>	1 Med.
Knapp, Robert Shakelton,	<i>Waverly,</i>	1 Elect. Eng.
Knapp, Valentine Mott,	<i>North Clove,</i>	2 Veterinary
Kniskern, Walter Hamlin,	<i>Deposit,</i>	3 Mech. Eng.
Knowlton, Robert Henry,	<i>Utica,</i>	1 Civil Eng.
Knowlson, James Somerville, 2nd,	<i>Western Springs, Ill.,</i>	2 Mech. Eng.
Koehler, Charles George, Jr.,	<i>Brooklyn,</i>	3 Arts, (1 Med.)
Koehler, Mathilda Anna,	<i>Springland,</i>	2 Arts
Koehler, Percy Wunderlich,	<i>Brooklyn,</i>	1 Elect. Eng.
Koenig, Harry Lee, B.E.,	<i>Houston, Tex.,</i>	4 Mech. Eng.
Kohls, Otto William,	<i>Rochester,</i>	1 Elect. Eng.
Kohn, Arthur Hirsh,	<i>Philadelphia, Pa.,</i>	1 Civil Eng.
Kommel, Louis Moses,	<i>New York City,</i>	4 Med. (N. Y. C.)
Kouyoundjian, Haroutine,	<i>Bagdad, Asiatic Turkey,</i>	1 Mech. Eng.
Kramer, Edwin Weed,	<i>Patterson, La.,</i>	2 Civil Eng.
Kratzenstein, Hugo, A.B.,	<i>New York City,</i>	3 Civil Eng.
Krause, Mark Champion,	<i>Williamsport, Pa.,</i>	1 Arts
Krauter, Harold S.,	<i>Tobyhanna, Pa.,</i>	1 Mech. Eng.
Krumbhaar, Hugh Montgomery, B.E.,	<i>New Orleans, La.,</i>	4 Mech. Eng.
Krupitzky, Jacob Louis,	<i>Brooklyn,</i>	1 Med. (N. Y. C.)
Kugler, Clarence Blyler, Jr.,	<i>Ithaca,</i>	Sr. Law
Kuhlmeier, Walter Andrew,	<i>Chicago, Ill.,</i>	2 Elect. Eng.
Kuhn, Alfred George,	<i>Philadelphia, Pa.,</i>	1 Mech. Eng.
Kuhn, George Wilfrid,	<i>Brooklyn,</i>	2 Elect. Eng.
Kurtz, William Overton,	<i>Helena, Mont.,</i>	2 Elect. Eng.
Kuschke, Harry Trevor,	<i>Plymouth, Pa.,</i>	2 Elect. Eng.
Kuschke, Maude Louise, B.E., M.E.,	<i>Plymouth, Pa.,</i>	2 Arts
Ladd, Walter Manning,	<i>Buffalo,</i>	1 Arts
Lagdameo, Jenaro Espina, A.B.,	<i>Manilla, P. I.,</i>	Sp. Forestry
Laird, Ida Marie,	<i>Auburn,</i>	3 Arts, (1 Med.)
Lake, Howard Clarence,	<i>Jamestown,</i>	Jr. Law
Lamb, Henry Cleaveland,	<i>Cooperstown,</i>	4 Mech. Eng.
Lamb, Roy Dane,	<i>Chicago, Ill.,</i>	1 Elect. Eng.
Lambert, Sophia Wilhelmina,	<i>Brooklyn,</i>	2 Arts

Landa, Francisco,	<i>Habana, Cuba,</i>	1 Civil Eng.
Landers, Eugene,	<i>Upper Lisle,</i>	1 Mech. Eng.
Landmann, Margaretta Veldran,	<i>Oradell, N. J.,</i>	Sp. Arts
Lane, Richard Jenkins,	<i>Philadelphia, Pa.,</i>	2 Mech. Eng.
Landmesser, Charles Frederick,	<i>Newark, N. J.,</i>	1 Arts
Langdon, Armand Creamer,	<i>Brooklyn,</i>	2 Civil Eng.
Lange, Carl William.	<i>Galveston, Tex.,</i>	2 Elect. Eng.
Langfeld, Clarence Meyer,	<i>Baltimore, Md.,</i>	1 Elect. Eng.
Lantz, Eleanor,	<i>Newark, N. J.,</i>	2 Medicine
Lara, Edward Maurice,	<i>Staunton, Va.,</i>	2 Civil Eng.
Larkin, Katherine Veronica,	<i>Ithaca,</i>	1 Law
Larkin, Patrick Edward,	<i>Ithaca,</i>	1 Veterinary
Larson, Archie Milton,	<i>Willmar, Minn.,</i>	3 Mech. Eng.
Lasbury, Alma Louise,	<i>Broad Brook, Conn.,</i>	1 Med.
Lasher, Herbert,	<i>Griffin Corners,</i>	1 Arts
Lask, Frederic,	<i>New York City,</i>	3 Elect. Eng.
Lathrop, Henry Julian,	<i>Tottenville,</i>	1 Arts
Laverty, Ethel,	<i>Glens Falls,</i>	2 Arts
Law, Lito Willet,	<i>Brooklyn,</i>	2 Mech. Eng.
Lawrance, Elliot Wagstaff,	<i>Rochester,</i>	4 Med. (N. Y. C.)
Lawrence, Frank Elmaker,	<i>Savannah, Ga.,</i>	1 Civil Eng.
Lawrence, Howard Leslie,	<i>Syracuse,</i>	1 Veterinary
Lawrence, Norman Spear,	<i>Riverside, Ill.,</i>	1 Mech. Eng.
Lawrie, Rowland Hazard,	<i>Atlantic Highlands, N. J.,</i>	1 Arts
Lawsing, Julia Elsie,	<i>Richboro, Pa.,</i>	3 Arts
Lawson, George,	<i>New York City,</i>	1 Mech. Eng.
Lazarus, David,	<i>New York City,</i>	3 Med. (N. Y. C.)
Leavenworth, William Herbert,	<i>Syracuse,</i>	1 Mech. Eng.
Leavitt, Clyde, A.B.,	<i>Bellaire, Mich.,</i>	1 Forestry
Lee, Cazenove Gardner, Jr.,	<i>Washington, D.C.,</i>	1 Mech. Eng.
Lee, John McClellan,	<i>Pittsburg, Pa.,</i>	2 Mech. Eng.
Lee, Ora, Jr.,	<i>Albion,</i>	1 Agriculture
Lee, Porter Raymond,	<i>Buffalo,</i>	4 Arts
Lee, William Forrest,	<i>N Tonawanda,</i>	1 Arts
Lee, William Ross, A.B., A.M.,	<i>Gouverneur,</i>	1 Law
Lefebore, Emile Joseph, M.A.,	<i>Manchac, P. O., La.,</i>	1 Mech. Eng.
Lefens, Walter Conrad,	<i>Chicago, Ill.,</i>	2 Mech. Eng.
Le Fevre, Daniel Du Boise,	<i>Ithaca,</i>	3 Veterinary
Lefferts, Florence Daisy,	<i>Gloversville,</i>	4 Arts
Lehman, Allan S,	<i>New York City,</i>	1 Arts
Lehmann, Otto William,	<i>Chicago, Ill.,</i>	1 Law
Leighton, Frederick,	<i>Canandaigua,</i>	2 Mech. Eng.

Leighton, Henry,	<i>Canandaigua,</i>	1 Arts
de Leon, Lionel Henriquez,	<i>Washington, D. C.,</i>	1 Mech. Eng.
León, Ricardo,	<i>Oaxaca, Mexico,</i>	3 Mech. Eng.
Leonard, Edward Simeon,	<i>Oak Park, Ill.,</i>	1 Civil Eng.
Leonard, Bert Campfield,	<i>Seneca Falls,</i>	2 Arts
Levin, Samuel,	<i>New York City,</i>	1 Med. (N. Y. C.)
Levison, Isaac,	<i>New York City,</i>	Jr. Law
Levy, Abraham Aaron,	<i>New York City,</i>	4 Med. (N. Y. C.)
Levy, Bernie Meyer,	<i>Albany,</i>	1 Elect. Eng.
Levy, Lilly Zerline,	<i>Williamsport, Pa.,</i>	2 Arts
Levy, Samuel,	<i>Malone,</i>	Jr. Law
Lewis, Carrie May,	<i>Catskill,</i>	4 Arts
Lewis, Frederick,	<i>Norfolk, Va.,</i>	1 Mech. Eng.
Lewis, George William,	<i>Scranton, Pa.,</i>	1 Mech. Eng.
Lewis, John Howard,	<i>Portland, Ore.,</i>	4 Civil Eng.
Lewis, Lloyd Virgil,	<i>Vernon,</i>	2 Mech. Eng.
Lewis, Philip,	<i>Pittsburg, Pa.,</i>	1 Civil Eng.
Lewis, William Henry,	<i>Morristown, N. J.,</i>	1 Mech. Eng.
Lewis, William Newton,	<i>Brooklyn,</i>	3 Arts
Libby, Luther Isaac,	<i>Worcester, Mass.,</i>	1 Agriculture
Licht, Louis Frederick, Ph.G.,	<i>Brooklyn,</i>	4 Med. (N. Y. C.)
Lichtenthaeler, Frank Edward,	<i>Temple, Pa.,</i>	1 Arts
Liddle, Robert Dorn,	<i>Scranton, Pa.,</i>	Jr. Law
Lidgerwood, Lulu Jean,	<i>Putnam,</i>	1 Arts
Lidgerwood, Roy Law,	<i>Putnam,</i>	Sp. Agriculture
Lies, Bennett Frederick,	<i>Buffalo,</i>	Jr. Law
Lighthall, Raymond Joseph,	<i>Ithaca,</i>	2 Elect. Eng.
Linch, Charles,	<i>Ithaca,</i>	1 Veterinary
Lindman, Raymond Heald,	<i>Chicago, Ill.,</i>	1 Mech. Eng.
Lindsey, Maude,	<i>Lockport,</i>	1 Med.
Lines, Edwin Fuller,	<i>New Haven, Conn.,</i>	3 Arts
Lintz, William,	<i>New York City,</i>	1 Med. (N. Y. C.)
Lippman, Thomas Charles, Ph.G.,	<i>Long Island City,</i>	4 Med. (N. Y. C.)
Lippert, Frederick Charles,	<i>Phoenixville, Pa.,</i>	2 Mech. Eng.
Little, Clarence Duane,	<i>Montclair, N. J.,</i>	2 Elect. Eng.
Locke, Harold Franklin,	<i>Ticonderoga,</i>	1 Mech. Eng.
Locke, Lura May,	<i>Wellsboro, Pa.,</i>	2 Arts
Locke, Mabel,	<i>Wellsboro, Pa.,</i>	2 Arts
Loeber, Edith,	<i>New Orleans, La.,</i>	4 Arts, (2 Med.)
Loeber, Florence, A. B.,	<i>New Orleans, La.,</i>	Jr. Law
Loewe, Dietrich Carl,	<i>Danbury, Conn.,</i>	1 Civil Eng.
Loewenthal, William Herman,	<i>Evansville, Ind.,</i>	2 Mech. Eng.

London, Julius,	<i>New York City,</i>	2 Med. (N.Y.C.)
Longbothum, George Thornton,	<i>Fort Salonga,</i>	1 Med.
Longnecker, Benjamin Franklin,	<i>Delta, O.,</i>	4 Arts
Loomis, Francis James,	<i>Phoenix,</i>	3 Veterinary
Loomis, Leroy Howard,	<i>Cleveland, O.,</i>	2 Mech. Eng.
Loop, Howard Scott,	<i>North East, Pa.,</i>	2 Agriculture
Lord, Addison Purdie,	<i>Utica,</i>	1 Arts
Lorenz, James Nicholas,	<i>Uhrichsville, O.,</i>	1 Arts
Loughridge, Clyde Higbee,	<i>Pittsburg, Pa.,</i>	3 Elect. Eng.
Lowe, Henry Leland,	<i>Indianapolis, Ind.,</i>	4 Mech. Eng.
Lowndes, Andrew Jackson,	<i>Baltimore, Md.,</i>	2 Mech. Eng.
Lowry, Arthur Thompson,	<i>Berwick, Pa.,</i>	1 Mech. Eng.
Lucker, Grover,	<i>Brooklyn,</i>	1 Mech. Eng.
Ludlow, Justin Wyman, M.E.,	<i>Chicago, Ill.</i>	4 Civil Eng.
Ludwig, Robert Francis, A.B.,	<i>Chicopee, Mass.,</i>	4 Med. (N.Y.C.)
Lueder, Charles Augustus, D.V.M.,	<i>Wilkes Barre, Pa.,</i>	Sp. Agriculture
Lull, Gerard Bramley,	<i>Delhi,</i>	3 Forestry
Lundell, Gustave Ernst Fred,	<i>Poughkeepsie,</i>	4 Arts
Luther, George William,	<i>Olean,</i>	2 Mech. Eng.
Lyford, Charles Albert,	<i>Waverly,</i>	3 Forestry
Lyford, Percy Lang,	<i>Waverly,</i>	1 Forestry
Lynah, James,	<i>Savannah, Ga.,</i>	2 Elect. Eng.
Lyndon, Sophie Harriet,	<i>Fairport,</i>	1 Arts
Lyon, Charles Albert, A.B.,	<i>East Orange, N. J.,</i>	2 Elect. Eng.
Lyon, Fannie Dimmick,	<i>Port Jervis,</i>	Jr. Law
Lytle, Maude Edith,	<i>Washington, Pa.,</i>	Sp. Arts
Macbride, Beatrice Clark,	<i>New York City,</i>	4 Arts
McCarthy, Alice Margaret,	<i>Addison,</i>	2 Arts
McCarthy, John William, A.B.,	<i>Holyoke, Mass.,</i>	2 Med. (N.Y.C.)
McCarthy, William Timothy,	<i>New York City,</i>	1 Veterinary
McClenahan, Le Roy Register,	<i>Baltimore, Md.,</i>	2 Elect. Eng.
McCloskey, Alice Gertrude,	<i>Saratoga Spa.,</i>	Sp. Arts
McClune, Julia Eliza,	<i>Ithaca,</i>	3 Arts
McColl, Gilbert Beebe, B.A.,	<i>Winnipeg, Manitoba, Can.,</i>	2 Elect. Eng.
McCulloms, Max Reed,	<i>Newton, Ia.,</i>	2 Arts
McCollum, Eugene Lawrence,	<i>Lockport,</i>	1 Law
McCorkle, Josephine Cassandra,	<i>Evansville, Ind.,</i>	1 Medicine
McCorkle, John Thomas Riley,	<i>Canonsburg, Pa.,</i>	1 Mech. Eng.
McCormick, Bradley Thomas,	<i>Brookland, D. C.,</i>	4 Elect. Eng.
McCormick, Mary Gertrude,	<i>Monticello,</i>	1 Arts
McCourt, Walter Edward,	<i>Brooklyn,</i>	3 Arts
McCracken, George Lewis, M.E.,	<i>B.P., Twin Oaks, Pa.,</i>	4 Arts

McCreary, Elsie,	<i>Cohoes,</i>	3 Arts
McCurdy, George Earle,	<i>Dunbar, Pa.,</i>	2 Civil Eng.
McDermott, Marion,	<i>Ithaca,</i>	1 Arts
McDermott, George Rolland, Jr.,	<i>Ithaca,</i>	2 Mech. Eng.
McDonald, Alan, B.A.,	<i>Louisville, Ky.,</i>	2 Mech. Eng.
McDonald, Harry George,	<i>Granville,</i>	1 Arts
McDonald, John Joseph, Jr.,	<i>Chicago, Ill.,</i>	1 Arts
McDougall, Eric Walter,	<i>Montclair, N. J.,</i>	1 Mech. Eng.
McEvoy, James Francis,	<i>Bliss,</i>	2 Arts
McFerran, Caroline Hamlin,	<i>Gouverneur,</i>	3 Arts
MacGill, Caroline Elizabeth,	<i>Peterboro, Ont., Can.,</i>	3 Arts
McGlade, John Joseph	<i>New York City,</i>	2 Med. (N.Y.C.)
McGinity, John Thomas,	<i>Green Island,</i>	4 Mech. Eng.
McGinnis, Bernard Benedict,	<i>Genesee, Pa.,</i>	2 Arts
McGinnis, Ralph,	<i>Friendship,</i>	1 Veterinary
McGonegal, George Arthur, A.B.,	<i>Rochester,</i>	Jr. Law
McGonigal, Richard Killen,	<i>Troy,</i>	Sr. Law
MacGregor, Herbert Paterson,	<i>New York City,</i>	2 Med. (N.Y.C.)
McGuire, Peter Stephen,	<i>Buffalo,</i>	3 Arts
McHenry, Roy Congdon,	<i>Binghamton,</i>	1 Law
McIntosh, Robert, Ph.B.,	<i>Grinnell, Ia.,</i>	2 Mech. Eng.
Mack, Winfred Berdell,	<i>Ithaca,</i>	2 Veterinary
McKay, Charles Watson,	<i>Brooklyn,</i>	1 Mech. Eng.
McKay, Florence Lucinda,	<i>Ithaca,</i>	2 Arts, (1 Med.)
MacKellar, James Malcolm,	<i>Nyack,</i>	2 Med.
MacKellar, Thomas,	<i>Philadelphia, Pa.,</i>	2 Civil Eng.
McKenna, Joseph Augustine,	<i>New York City,</i>	1 Arts
MacKenzie, David Wallace, B.A.,	<i>Flat River, P. E. I., Can.,</i>	3 Med. (N.Y.C.)
McKinlay, Ned Scofield,	<i>Denver, Col.,</i>	1 Elect. Eng.
McKnight, Thomas Joseph,	<i>Dubuque, Ia.,</i>	2 Civil Eng.
McKoon, Morgan Lane,	<i>Long Eddy,</i>	4 Arts
McLachlen, Eugene Hall,	<i>Ithaca,</i>	Sr. Law
McLaren, Walter Austin,	<i>Brooklyn,</i>	1 Med. (N.Y.C.)
McLeary, Samuel Harvey,	<i>San Antonio, Tex.,</i>	3 Elect. Eng.
MacLeod, Murdock Douglas,	<i>Valley Field, P. E. I., Can.,</i>	4 Med. (N. Y. C.)
McLoughlin, Ray Pratt,	<i>Utica,</i>	1 Arts
McMeekan, David, Jr.,	<i>Brooklyn,</i>	3 Elect. Eng.
McMeekan, Walter,	<i>Brooklyn,</i>	1 Law
McMenamin, Francis Joseph,	<i>Bath,</i>	1 Med. (N. Y. C.)
McMurtrie, William Anderson, Ph.B.,	<i>Belvidere, N. J.,</i>	2 Med. (N. Y. C.)

McNair, Frederick Henry,	<i>Mt. Morris,</i>	2 Veterinary
McNamara, Helen Catherine,	<i>Binghamton,</i>	2 Arts
McNamara, John Aloysius,	<i>Ithaca,</i>	2 Veterinary
McNevins, John Alphonsus,	<i>New York City,</i>	1 Med. (N. Y. C.)
McNitt, Robert Joseph, A.B.,	<i>Logansport, Ind.,</i>	3 Elect. Eng.
McNitt, Willard Charles,	<i>Logansport, Ind.,</i>	2 Arts
McPherson, Henry Hume,	<i>Bergen,</i>	4 Mech. Eng.
McSparren, Charles Russell,	<i>Buffalo,</i>	Jr. Law
McTammany, Etta,	<i>Troy,</i>	2 Arts
Mabee, Cecil Watkins,	<i>Ithaca,</i>	1 Arts
Maceo, Antonio,	<i>Habana, Cuba,</i>	1 Mech. Eng.
Machlin, Morris,	<i>New York City,</i>	1 Med. (N. Y. C.)
Madden, John Alden,	<i>Ithaca,</i>	2 Veterinary
Magid, Maurice Oliver,	<i>New York City,</i>	2 Med. (N. Y. C.)
Magill, William Henry,	<i>New York City,</i>	4 Med. (N. Y. C.)
Maginnis, Edward Arthur,	<i>Chicago, Ill.,</i>	4 Mech. Eng.
Maher, William Elliott,	<i>Brewster,</i>	1 Medicine
Mainwaring, William Hamer,	<i>Miner's Mills, Pa.,</i>	2 Mech. Eng.
Major, Horace Fairchild,	<i>Ithaca,</i>	1 Arts
Makely, Metrah, Jr., A.B.,	<i>Edenton, No. Car.,</i>	1 Elect. Eng.
Mallon, Richard Sandford,	<i>Paterson, N. J.,</i>	2 Med. (N. Y. C.)
Mallory, Phillips Henry,	<i>Brooklyn,</i>	3 Architecture
Mallouf, Nasseem,	<i>New York City,</i>	1 Mech. Eng.
Malone, Allen Latta,	<i>Baltimore, Md.,</i>	2 Mech. Eng.
Malone, George Edward,	<i>Spencerport,</i>	4 Civil Eng.
Mann, Albert Russell,	<i>Pittsburg, Pa.</i>	Sp. Agriculture
Mann, Charles Maitland,	<i>New York City,</i>	2 Arts
Mann, Harvey Blaine,	<i>Lewistown, Pa.,</i>	1 Mech. Eng.
Mann, Manley Burr,	<i>Middleburg,</i>	Sr. Law
Mann, William Lowry, B.S. in E.E.,	<i>Cobham, Va.,</i>	4 Elect. Eng.
Mantel, Frank Alphonse,	<i>Auburn,</i>	1 Arts
Manville, William Willett,	<i>Newport News, Va.,</i>	1 Mech. Eng.
Margerum, Briton Albert,	<i>Philadelphia, Pa.,</i>	1 Mech. Eng.
Margolin, Louis,	<i>New York City,</i>	Sp. Forestry
Mark, Charles Jacob,	<i>New York City,</i>	1 Med. (N. Y. C.)
Markey, Edward Bond,	<i>Eaton, O.,</i>	1 Medicine
Markham, George Benedict, B.S.,	<i>New York City,</i>	2 Forestry
Markwitz, Abraham,	<i>Brooklyn,</i>	1 Med. (N. Y. C.)
Marquardt, Florence Anna,	<i>Brooklyn,</i>	2 Arts
Marsh, Charles Mercer,	<i>Morris Plains, N. J.,</i>	4 Elect. Eng.
Marsh, Reginald Edward,	<i>Glens Falls,</i>	1 Architecture
Marshall, Thomas Bayne,	<i>Allegheny, Pa.,</i>	2 Arts

Marsters, Charles Elbert,	<i>Brooklyn,</i>	1 Civil Eng.
Martin, Arthur Harold,	<i>Cooperstown,</i>	3 Arts, (2 Med.)
Martin, Caldwell,	<i>Denver, Colo.,</i>	1 Mech. Eng.
Martin, George Winfield,	<i>Tannersville,</i>	1 Law
Martin, Isabel,	<i>Auburn,</i>	4 Arts
Martin, Lawrence,	<i>Adams, Mass.,</i>	3 Arts
Martinez, Carlos Alfonso, B.S.,	<i>Hornos, Coah, Mexico,</i>	2 Mech. Eng.
Martinez y Martinez, Isaac Francisco,	<i>Mayagüez, Porto Rico,</i>	1 Law
Marvin, Ralph Erwin,	<i>Muskegon, Mich.,</i>	4 Civil Eng.
Marvin, Ross Gilmore,	<i>Elmira,</i>	1 Arts
Marx, August,	<i>Toledo, O.,</i>	4 Mech. Eng.
Marxnach, Jeopfilo, C. E.,	<i>San Juan, Porto Rico,</i>	3 Elect. Eng.
Mason, Alfred Lewis,	<i>Syracuse,</i>	1 Veterinary
Mason, Allen,	<i>Detroit, Mich.,</i>	3 Mech. Eng.
Mason, Edward Fraser,	<i>Owego,</i>	2 Mech. Eng.
Masters, Frank Harris, A.B.,	<i>Rossville, Ind.,</i>	3 Civil Eng.
Masters, Frank Wynne,	<i>New Orleans, La.,</i>	1 Forestry
Masterson, Wilmer Dallam,	<i>Galveston, Tex.,</i>	1 Arts
Mattoon, Wilbur Reed, A.B.,	<i>Tyrone,</i>	Sp. Forestry
Maxson, Cullen B,	<i>Jersey City, N. J.,</i>	3 Med.(N. Y. C.)
Maxwell, Howard,	<i>Columbus, O.,</i>	1 Mech. Eng.
Maybaum, Jacob,	<i>New York City,</i>	2 Med. (N.Y.C.)
Mayo, Edward Hanson,	<i>Indianapolis, Ind.,</i>	2 Mech. Eng.
Mayo, Geoffrey Wainman,	<i>Smethport, Pa.,</i>	1 Civil Eng.
Meade, George Cahill,	<i>Parish,</i>	Jr. Law
Mears, John Farnham,	<i>Scranton, Pa.,</i>	1 Mech. Eng.
Mechling, Benjamin Franklin, Jr.,	<i>Germantown, Pa.,</i>	1 Mech. Eng.
Meddaugh, Samuel Addison,	<i>Auburn,</i>	3 Mech. Eng.
Meeker, Lewis Edgar, Jr.,	<i>Brooklyn,</i>	3 Mech. Eng.
Mehling, Mortimer Francis,	<i>Cleveland, O.,</i>	1 Arts
Meissner, Scott Thadeus,	<i>Erie, Pa.,</i>	2 Mech. Eng.
Mellowes, Alfred Witherman,	<i>Dayton, O.,</i>	1 Mech. Eng.
Melvin, Carroll Loomis,	<i>Bradford, Pa.,</i>	1 Elect. Eng.
Menge, Sidney Lawrence,	<i>New Orleans, La.,</i>	1 Mech. Eng.
Merkin, Abraham,	<i>New York City,</i>	1 Civil Eng.
Mergenthaler, Fritz Lillian,	<i>Baltimore, Md.,</i>	2 Mech. Eng.
Merrill, Charles George,	<i>Ithaca,</i>	Sp. Painting
Merrill, George Bartges,	<i>Akron, O.,</i>	4 Mech. Eng.
Merrill, George Enoch, B.S.,	<i>Hampton Falls, N. H.,</i>	4 Agriculture
Merrill, Harry Raymond,	<i>Schenectady,</i>	Jr. Law
Merrill, Whitney,	<i>Brooklyn,</i>	4 Mech. Eng.
Merriman, Eugene Duette,	<i>Ithaca,</i>	1 Arts

Merritt, Eugene,	<i>Millbrook,</i>	4 Arts
Merritt, Louise Harriet Flanders,	<i>Malone,</i>	3 Arts
Messer, Anna Teresa,	<i>Ithaca,</i>	2 Arts
Meyer, Edgar Joseph,	<i>New York City,</i>	1 Elect. Eng.
Meyer, Matilda Caroline,	<i>Brooklyn,</i>	2 Arts
Middleditch, Lyman,	<i>South Orange, N. J.,</i>	2 Mech. Eng.
Middleton, Joseph Henry,	<i>Troy,</i>	4 Arts
Milks, Howard Jay,	<i>Candor,</i>	2 Veterinary
Milbank, Samuel,	<i>New York City,</i>	3 Med. (N.Y.C.)
Millen, Charles,	<i>Ithaca,</i>	3 Veterinary
Miller, Arthur Frederick,	<i>Buffalo,</i>	2 Mech. Eng.
Miller, Bruce McCutcheon,	<i>Allegheny, Pa.,</i>	4 Civil Eng.
Miller, David Deppen,	<i>Wooster, O.,</i>	1 Mech. Eng.
Miller, Frederick,	<i>Mt. Vernon,</i>	2 Mech. Eng.
Miller, Gladys,	<i>Ithaca,</i>	3 Arts
Miller, Reba Jane,	<i>West Brighton,</i>	2 Arts
Mills, Chester Lee,	<i>Hume,</i>	4 Arts
Mills, Frederic Alden,	<i>Brooklyn,</i>	1 Arts
Mills, Frederick Peter,	<i>Mt. Morris,</i>	Jr. Law
Mills, Minnie Mary,	<i>Owego,</i>	1 Medicine
Miltimore, Edward,	<i>Catskill,</i>	2 Med. (N.Y.C.)
Minard, Edwy Le Roy,	<i>Boonton, N. J.,</i>	1 Med. (N.Y.C.)
Miner, George Harry, B. Agr.,	<i>New York Mills,</i>	3 Veterinary
Minott, Enos Samuel Forrester,	<i>New York City,</i>	1 Med. (N.Y.C.)
Mintz, Jay Jerome,	<i>Ithaca,</i>	1 Mech. Eng.
Mirick, Carlos Brown,	<i>Washington, D. C.,</i>	2 Elect. Eng.
Miskella, William James,	<i>Cass Lake, Minn.,</i>	2 Elect. Eng.
Mitchell, Frank Davis,	<i>Mt. Vernon,</i>	3 Arts
Mitchell, Harold Gouvenier,	<i>Los Angeles, Cal.,</i>	Sp. Agriculture
Mitchell, James Reid, Jr.,	<i>Mt. Vernon,</i>	1 Arts
Mitchell, William Hobart,	<i>New York City,</i>	1 Med. (N.Y.C.)
Mix, David Cameron,	<i>Ithaca,</i>	2 Elect. Eng.
Mohan, John Francis,	<i>Bellevue, Pa.,</i>	4 Med. (N.Y.C.)
Molatch, Otto Allan,	<i>Brooklyn,</i>	3 Arts
Moler, Albert Daniel,	<i>Ithaca,</i>	1 Painting
Monagle, Catharine Louise,	<i>Norwich,</i>	3 Arts
Monje, Arthur,	<i>Sante Fé, Argentine Republic,</i>	3 Civil Eng.
Monroe, John Duncan,	<i>Andes,</i>	1 Law
Montgomery, Dudley,	<i>New York City,</i>	1 Elect. Eng.
Montgomery, James Joseph,	<i>Watertown,</i>	3 Civil Eng.
Montgomery, Warren,	<i>New York City,</i>	2 Elect. Eng.
Moody, Robert Maxwell,	<i>Titusville, Pa.,</i>	1 Arts

Moody, William Howard,	<i>Saratoga Springs,</i>	2 Arts
Moore, Elbert Owen,	<i>Pueblo, Colo.,</i>	3 Mech. Eng.
Moore, Schuyler Richard,	<i>Trumansburg,</i>	3 Arts
Moore, William George,	<i>Portsmouth, O.,</i>	1 Mech. Eng.
Moore, Willie Tabb,	<i>Marion, Ala.,</i>	Sp. Arts
Moran, Harry Powell, B.S.,	<i>New York City,</i>	4 Mech. Eng.
Moran, John Malcolm,	<i>Seattle, Wash.,</i>	1 Mech. Eng.
Morehouse, Walter Gould,	<i>Westfield, N. J.,</i>	1 Veterinary
Morewood, John Rhodes,	<i>New York City,</i>	Sp. Agr.
Morgan, Alfred Cookman,	<i>Concord, Del.,</i>	3 Agr.
Morgan, George Frederick,	<i>Seaford, Del.,</i>	Sp. Painting
Morgan, Henry Harrison, Jr.,	<i>Bridgeville, Del.,</i>	Sp. Arts
Morgan, William Albery, Jr.,	<i>Buffalo,</i>	2 Mech. Eng.
Morgenstern, Adolph,	<i>New York City,</i>	1 Med. (N.Y.C.)
Morrison, Clark, Jr.,	<i>Oswego,</i>	2 Mech. Eng.
Morrison, James,	<i>Cincinnati, O.,</i>	2 Mech. Eng.
Morrison, Olive Butler,	<i>Washington, D. C.,</i>	4 Arts
Morse, Edwin Knox,	<i>Moravia,</i>	Sp. Agr.
Morse, Henry New,	<i>Brooklyn,</i>	1 Arts
Morse, Lawrence Gordon,	<i>Philadelphia, Pa.,</i>	1 Mech. Eng.
Morse, Raymond Parmalee,	<i>Brooklyn,</i>	4 Mech. Eng.
Morton, Neil,	<i>Groton,</i>	2 Mech. Eng.
Moses, Susan Williams,	<i>Raleigh, N. C.,</i>	4 Arts
Moskowitz, Abraham,	<i>Brooklyn,</i>	4 Med. (N. Y. C.)
Moskowitz, Samuel,	<i>New York City,</i>	1 Med. (N. Y. C.)
Moss, Sherwood Conkling,	<i>Buffalo,</i>	1 Elect. Eng.
Mothershead, John Leland	<i>Indianapolis, Ind.,</i>	4 Mech. Eng.
Mott, Charles Earle,	<i>Oneida,</i>	4 Architecture
Moulson, Charles Edward, A.B.,	<i>Rochester,</i>	3 Mech. Eng.
Mount, Louis Burgh,	<i>Troy,</i>	2 Med., (N. Y. C.)
Mourning, Garland Hubbard,	<i>Louisville, Ky.,</i>	2 Mech. Eng.
Mowat, John Frederic,	<i>Peoria, Ill.,</i>	3 Arts
Moxley, William Francis,	<i>Elmira,</i>	1 Elect. Eng.
Moyer, Thomas Jefferson,	<i>Fort Plain,</i>	1 Arts
Mudge, Alfred Eugene, Jr.,	<i>Brooklyn,</i>	3 Arts
Mudge, James Douglass,	<i>Harpersville,</i>	1 Mech. Eng.
Mueden, George Frederic,	<i>Washington, D. C.,</i>	3 Civil Eng.
Mueden, Rudolf Eduard,	<i>Washington, D. C.,</i>	4 Mech. Eng.
Mueller, Curt Berthold,	<i>Cleveland, O.,</i>	2 Mech. Eng.
Muller, George,	<i>Brooklyn,</i>	1 Law
Muller, Theodore,	<i>New York City,</i>	1 Med. (N.Y.C.)
Mulroy, William Leo,	<i>Marcellus,</i>	1 Mech. Eng.

Mundy, Roswell Flowers,	<i>Chicago, Ill.,</i>	3 Mech. Eng.
Munroe, Edward,	<i>Chicago, Ill.,</i>	2 Elect. Eng.
Munson, David Curtiss,	<i>Medina,</i>	1 Arts
Murchie, Percy,	<i>Brooklyn,</i>	1 Arts
Murphy, Frank Sylvester,	<i>Holley,</i>	Sp. Agriculture
Murphy, Joseph Gleeson,	<i>Detroit, Mich.,</i>	1 Arts
Murphy, William Andrew,	<i>Joliet, Ill.,</i>	3 Arts
Murray, Clare D,	<i>De Ruyter,</i>	1 Civil Eng.
Murray, Charles Edward,	<i>Wilkes-Barre, Pa.,</i>	4 Mech. Eng.
Murray, Katherine Francis,	<i>Ithaca,</i>	2 Arts
Murray, Wilbur Albion,	<i>Tottenville,</i>	1 Mech. Eng.
Murset, Charles William,	<i>Port Jervis,</i>	2 Medicine
Musgrove, John Culver,	<i>Pittsfield, Mass.,</i>	3 Elect. Eng.
Musson, Lucia Birdsall,	<i>Binghamton,</i>	4 Arts
Myers, Curtis Clark,	<i>Buffalo,</i>	4 Mech. Eng.
Myers, Elizabeth Aerial,	<i>Frankfort,</i>	2 Arts
Myers, Philip,	<i>Kingston, Pa.,</i>	1 Mech. Eng.
Myers, William Beach,	<i>Dubuque, Ia.,</i>	1 Civil Eng.
Nachmann, Albert Louis,	<i>New York City,</i>	1 Elect. Eng.
Nagel, Harry Coville,	<i>Norwich,</i>	3 Mech. Eng.
Nathan, George Jean,	<i>Cleveland, O.,</i>	3 Arts
Nattrass, Robert Birnn,	<i>Hoboken, N. J.,</i>	2 Med. (N.Y.C.)
Nay, George Nelson,	<i>Jericho, Vt.,</i>	1 Law
Neary, James Eugene,	<i>Schenectady,</i>	1 Elect. Eng.
Nechamkin, Alexander,	<i>New York City,</i>	2 Med. (N.Y.C.)
Neff, William,	<i>Walton,</i>	4 Arts
Neilson, George William,	<i>Philadelphia, Pa.,</i>	1 Mech. Eng.
Nelbach, George Joseph,	<i>Utica,</i>	2 Arts
Nell, Edwin Brydon,	<i>Rochester,</i>	4 Arts
Nellis, Frank Edward,	<i>Chicago, Ill.,</i>	1 Mech. Eng.
Nelson, Egbert Vernon,	<i>Cold Spring,</i>	Sr. Law
Netzorg, Sol Charles,	<i>Ithaca, Mich.,</i>	2 Mech. Eng.
Neu, John Jerome,	<i>New York City,</i>	1 Med. (N.Y.C.)
Newberry, Andrew White,	<i>Sandusky, O.,</i>	2 Arts
Newbury, George Chapman,	<i>Goshen,</i>	1 Mech. Eng.
Newcomb, Robert Cook,	<i>Whitehall,</i>	1 Elect. Eng.
Newcomb, Wallace Ranlette,	<i>Cherry Creek,</i>	2 Arts
Newhall, John,	<i>Glencoe, Ill.,</i>	1 Arts
Newman, Edmund Taylor,	<i>Buffalo,</i>	2 Arts
Newman, Frederick Jerome,	<i>Buffalo,</i>	2 Arts
Newman, Thomas S,	<i>Hopedale, Mass.,</i>	4 Civil Eng.
Newton, George Albert,	<i>St. James,</i>	2 Med. (N.Y.C.)

Newton, Jason Howard,	<i>Springfield, Mass.,</i>	1 Mech. Eng.
Newton, Wilbur W,	<i>Pueblo, Colo.,</i>	1 Arts
Nicholl, John Seymour,	<i>Rochester,</i>	1 Arts
Nichols, Carroll Leja,	<i>Brooklyn,</i>	3 Med. (N.Y.C.)
Nichols, Clayton Worthington, Jr.,	<i>Camden, N. J.,</i>	1 Mech. Eng.
Nichols, Elizabeth,	<i>Ithaca,</i>	2 Arts
Nichols, Robert Preston,	<i>Ithaca,</i>	1 Arts
Nickerson, Charles Willis,	<i>Stony Point,</i>	1 Mech. Eng.
Nightingale, Julia Huntington	<i>Grenelle, Passaic, N. J.,</i>	1 Agriculture
Niles, Nathaniel Leo, Ph.B.,	<i>Providence, R. I.,</i>	2 Med. (N.Y.C.)
Nitchie, Charles Carlton,	<i>Evanston, Ill.,</i>	2 Arts
Nitchie, Francis Raymond,	<i>Evanston, Ill.,</i>	1 Arts
North, Robert,	<i>Batavia,</i>	1 Architecture
Norton, Charles Finney,	<i>Rochester,</i>	Sp. Agriculture
Norton, Eben,	<i>Brockport,</i>	Sp. Agriculture
Norton, Irvin,	<i>Camden,</i>	2 Elect. Eng.
Norton, Thomas Joseph, A.B.,	<i>Lee, Mass.,</i>	2 Med. (N.Y.C.)
Norwood, Harry Yorke,	<i>Allegany,</i>	4 Arts
Nourse, Edwin Griswold,	<i>Downer's Grove, Ill.,</i>	2 Arts
Nowak, Walter William,	<i>Buffalo,</i>	2 Elect. Eng.
Noyes, Nicholas Hartman,	<i>Dansville,</i>	1 Arts
Nusbaum, Jerome,	<i>Newark, N. J.,</i>	1 Medicine
Nutting, Raymond,	<i>Brooklyn,</i>	1 Mech. Eng.
Oakleaf, Josephus Le Roy,	<i>Moline, Ill.,</i>	1 Law
Oakley, Edward Halsey,	<i>Owego,</i>	1 Law
Oberndorf, Clarence Paul,	<i>New York City,</i>	3 Arts, (1 Med.)
Oberrender, Stanley Tellman,	<i>Drifton, Pa.,</i>	1 Mech. Eng.
O'Brien, Avery,	<i>Pittsburg, Pa.,</i>	Sp. Agr.
Ocampo, Vincente, V.S.,	<i>Buenos-Aires, Arg. Rep.,</i>	Sp. Vet.
O'Day, Sylvester Francis, A.B.,	<i>Binghamton,</i>	3 Med. (N.Y.C.)
Odell, Jay Bernard,	<i>New York City,</i>	3 Arts
Odell, Letitia Rebekah,	<i>Jamestown,</i>	2 Arts
Offutt, Mitchem Webb,	<i>Georgetown, Ky.,</i>	4 Mech. Eng.
Ogden, Horace Sansbury,	<i>Washington, D. C.,</i>	1 Arch.
Ogier, George Rufus,	<i>Baltimore, Md.,</i>	1 Civil Eng.
Okerstrom, Ouiga Edith,	<i>Denver, Colo.,</i>	4 Arts
Olds, Norman Evry,	<i>Fort Wayne, Ind.,</i>	2 Civil Eng.
Oliver, Mark,	<i>Chicago, Ill.,</i>	Jr. Law
Olsen, Thorsten Yhlen,	<i>Philadelphia, Pa.,</i>	4 Mech. Eng.
O'Neill, Grace,	<i>Albany,</i>	3 Arts
O'Neill, James George,	<i>Geneva,</i>	4 Arts
Orvis, Warner Dayton,	<i>New York City,</i>	1 Mech. Eng.
Osborne, Alfred Barber,	<i>Oneonta,</i>	4 Civil Eng.

Osborne, Curtis Ralph,	<i>Athens, Pa.,</i>	2 Elect. Eng.
Ostby, Raymond Engelhart,	<i>Providence, R. I.,</i>	1 Mech. Eng.
Ostos, Luciano,	<i>Tampico, Tamps, Mex.,</i>	Sp. Agr.
Oswald, Frederick William, Jr.,	<i>Brooklyn,</i>	2 Arts
Ott, George Frederick, Jr.,	<i>Phila., Pa.,</i>	3 Mech. Eng.
Ott, Oran Whitman,	<i>Oak Park Ill.,</i>	4 Mech. Eng.
Ottley, Alice Maria,	<i>Seneca Castle,</i>	3 Arts
Overbaugh, Mabel Ada,	<i>Amsterdam,</i>	2 Arts
Overman, Edward Benton,	<i>Springfield, Mass.,</i>	2 Arts
Overman, Max Cyrus,	<i>Springfield, Mass.,</i>	2 Arts
Owen, Ira June,	<i>Oak Park, Ill.,</i>	1 Mech. Eng.
Owens, Harold VanDyke,	<i>Utica,</i>	1 Civil Eng.
Owens, Harry Christmas,	<i>Morristown, N. J.,</i>	Jr. Law
Owsley, Alice Evelyn,	<i>Skaneateles,</i>	3 Arts
Pacheco, Joviano Augusto d'Amaval,	<i>S. Carlos, Brazil,</i>	1 Arts
Packard, Daniel Barry, A.B.,	<i>Greenville, Pa.,</i>	3 Civil Eng.
Paine, Henry Ellsworth,	<i>Cleveland, O.,</i>	2 Mech. Eng.
Palmer, Albert D Selee,	<i>Morristown,</i>	1 Law
Palmer, Elnora May,	<i>Ithaca,</i>	2 Arts
Palmer, Eugene Preston, Jr.,	<i>Chicago, Ill.,</i>	1 Mech. Eng.
Palmer, Lewis Eugene,	<i>Seneca Falls,</i>	2 Arts
Palmer, Maude Raymond,	<i>Ithaca,</i>	Sp. Agriculture
Palmer, Robert Wayne,	<i>Seneca Falls,</i>	4 Arts
Palmer, William Hailes,	<i>Mechanicville,</i>	4 Med. (N.Y.C.)
Palmié, Marguerite Thiel,	<i>Brooklyn,</i>	3 Arts
Paltun, Samuel,	<i>New York City,</i>	1 Med. (N.Y.C.)
Pappe, Theodore Frankel,	<i>Sioux City, Ia.,</i>	2 Arts
Park, Mary Beeler,	<i>Speedville, Ky.,</i>	4 Arts
Parker, Esther Emily,	<i>Matteawan,</i>	2 Arts, (1 Med.)
Parker, James Griswold,	<i>Cape Vincent,</i>	Jr. Law
Parker, James Heber, P.D.,	<i>Reading, Pa.,</i>	2 Arts
Parmenter, Louie Allen,	<i>Corinth,</i>	3 Med. (N.Y.C.)
Parsons, George, A.B.,	<i>Winnebago, Ill.,</i>	3 Elect. Eng.
Paskett, Winifred Llewellyn,	<i>Palmyra,</i>	2 Arts
Patterson, Graham Creighton,	<i>Pittsburg, Pa.,</i>	3 Arts
Patterson, George William, Jr.,	<i>Honeoye,</i>	Sp. Arts
Patterson, Robert Rhoads,	<i>Geneseo,</i>	4 Arts, (2 Med.)
Pattison, Roy Stuart,	<i>Mayville,</i>	4 Elect. Eng.
Pavek, John Wesley,	<i>West Point,</i>	1 Civil Eng.
Pawling, Jesse Randolph,	<i>Watertown,</i>	2 Arts
Payne, Charles Rockwell, A.B.,	<i>Wadhams Mills,</i>	2 Medicine
Payne, Florence Belle Earle,	<i>Gouverneur,</i>	2 Arts

Peace, William Stearly,	<i>Philadelphia, Pa.,</i>	Jr. Law
Pearson, Henry, B.S.,	<i>Tuscaloosa, Ala.,</i>	4 Med. (N.Y.C.)
Pearson, John Calder,	<i>Ithaca,</i>	4 Arts
Pease, George Norman,	<i>Portland, Ore.,</i>	3 Arts
Peck, Allen John,	<i>Ithaca,</i>	3 Mech. Eng.
Peck, Ellery Newell, A.B.,	<i>Ithaca,</i>	3 Med. (N.Y.C.)
Peck, Fred Eldred,	<i>Wolfville, N. S., Can.,</i>	Sp. Agr.
Peck, Howard,	<i>East Orange, N. J.,</i>	1 Arts
Peck, Ross Sanders,	<i>Brookton,</i>	3 Mech. Eng.
Peer, Samuel Sherman,	<i>Ithaca,</i>	1 Law
Pendergast, Walter Mikael,	<i>Phoenix,</i>	1 Veterinary
Pennell, Hannah Sharpless,	<i>Wawa, Pa.,</i>	3 Arts
Pennock, Frank Rheiner,	<i>Chittenango,</i>	Sr. Law
Pepper, Rebecca Clementina, B.P.,	<i>Georgetown, Del.,</i>	Sp. Arts
Perkins, Darwin Clare,	<i>Alexander,</i>	2 Arts, (1 Medicine)
Perky, Scott Hancock,	<i>Niagara Falls,</i>	Sp. Agriculture
Perry, Charles Frederick, S.B.,	<i>Worcester, Mass.,</i>	3 Mech. Eng.
Perry, John Wesley, B.S.,	<i>Charlotte, N. C.,</i>	1 Veterinary
Perry, Leslie Donald,	<i>Carthage,</i>	1 Arts
Peters, Frederic Hallock,	<i>Binghamton,</i>	1 Arts
Peterson, Charles Gilbert,	<i>Lockport,</i>	1 Mech. Eng.
Pettit, Irving Coles,	<i>Baldwins,</i>	4 Elect. Eng.
Pfeiffer, William,	<i>Brooklyn,</i>	4 Med. (N. Y. C.)
Philips, Joseph Bond,	<i>Kennett Square, Pa.,</i>	1 Elect. Eng.
Phillips, Arthur Morton,	<i>New Haven, Pa.,</i>	3 Elect. Eng.
Phillips, Earle W.	<i>Savannah,</i>	2 Medicine
Phillips, Milton Jonathan,	<i>Bristol,</i>	4 Mech. Eng.
Pidgeon, John Redmond,	<i>Oswego,</i>	Jr. Law
Pierce, Eunice Martha,	<i>Cohocton,</i>	Sp. Arts
Pierce, Howard Castner,	<i>Worcester, Mass.,</i>	1 Elect. Eng.
Pierce, Paul Leon, B.S.,	<i>Chattanooga, Tenn.,</i>	1 Civil Eng.
Pierce, William Edward,	<i>Port Chester,</i>	2 Elect. Eng.
Pierson, Grace Rappleye,	<i>Trumansburg,</i>	3 Arts
Pinckard, Ryburn,	<i>Birmingham, Ala.,</i>	1 Mech. Eng.
Pinco, Charles Nathaniel,	<i>Brooklyn,</i>	4 Civil Eng.
Pino Farrera, Francisco, Jr.,	<i>City of Mexico, Mexico,</i>	2 Civil Eng.
Piper, Clarence Brett,	<i>Minneapolis, Minn.,</i>	1 Law
Pitcairn, Robert,	<i>Pittsburg, Pa.,</i>	3 Mech. Eng.
Pitcher, Frederic Clifford,	<i>Brooklyn,</i>	2 Arts
Pitzman, Harold Wislizenus,	<i>St. Louis, Mo.,</i>	2 Civil Eng.
Placek, Louis Joseph,	<i>New York City,</i>	1 Med. (N.Y.C.)
Platt, Roger Burchard,	<i>Bath,</i>	1 Arts

Platts, George Washington Stearns,	<i>Rindge, N. H.,</i>	2 Civil Eng.
Plume, Clarence Apgar,	<i>Caldwell, N. J.,</i>	1 Med. (N. Y. C.)
Plumer, Herbert Foster,	<i>Braintree, Mass.,</i>	2 Civil Eng.
Poate, Ernest Marsh,	<i>Rushford,</i>	2 Medicine
Poate, Frederick William,	<i>Rushford,</i>	3 Elect. Eng.
Pohlman, Augustus Grote, M.D.,	<i>Buffalo,</i>	3 Arts
Pollack, Charles Maurice,	<i>Brooklyn,</i>	1 Med. (N. Y. C.)
• Pomeroy, Fred Lawrence, Jr.,	<i>Buffalo,</i>	4 Elect. Eng.
Pond, Willard Fred,	<i>Rochester,</i>	2 Civil Eng.
Poole, Ray Burrows,	<i>Utica,</i>	1 Civil Eng.
Poor, Ben Perley,	<i>Burlington, Ia.,</i>	4 Arts
Porter, Floyd John,	<i>Ithaca,</i>	2 Agriculture
Porter, Harry Franklin,	<i>Bridgeport, Conn.,</i>	1 Civil Eng.
Porter, Henry Joshua,	<i>Windsor Locks, Conn.,</i>	2 Elect. Eng.
Post, George Adams, Jr.,	<i>New York City,</i>	1 Mech. Eng.
Potosky, Walter David,	<i>New York City,</i>	3 Mech. Eng.
Potter, Arnold James Brown,	<i>Penn Yan,</i>	Jr. Law
Potter, Carolyn Grace,	<i>Ithaca,</i>	1 Arts
Potter, George Howarth,	<i>Brooklyn,</i>	4 Arts
Potts, Abbie Findlay,	<i>Troy,</i>	1 Arts
Powell, Phillip Bayard,	<i>Clinton,</i>	Sp. Agr.
Powers, Allan Raymond, B.S.,	<i>San Francisco, Cal.,</i>	2 Forestry
Powers, Hiram Henry,	<i>Potsdam,</i>	Sp. Agr.
Pratt, Lee Sheldon,	<i>Sherman,</i>	3 Arts
Pratt, Ransom,	<i>Elmira,</i>	2 Mech. Eng.
Pratt, Winslow Shipman,	<i>Albion,</i>	3 Civil Eng.
Pray, Fred James,	<i>Sherburne,</i>	1 Veterinary
Precht, Edward,	<i>New York City,</i>	2 Med. (N. Y. C.)
Presho, Charles Henry,	<i>Ulysses, Pa.,</i>	4 Arts
Preston, Sylvester Cosgrave,	<i>Pittsburg, Pa.,</i>	1 Mech. Eng.
Price, Adelbert J,	<i>Dundee,</i>	1 Med.
Price, Ernest Valois,	<i>Jamestown,</i>	3 Architecture
Price, William Herbert,	<i>West Phila., Pa.,</i>	1 Mech. Eng.
Price, William Kelley,	<i>Kingston,</i>	1 Mech. Eng.
Prime, Edward,	<i>Huntington,</i>	1 Arch.
Prince, Alice Louise,	<i>Vineland, N. J.,</i>	2 Arts
Prince, Howard Love,	<i>Byron Center,</i>	1 Medicine
Proseus, Edna Louise,	<i>Fishers,</i>	4 Arts
Prussing, Rudolph Ernest,	<i>Chicago, Ill.,</i>	2 Mech. Eng.
Pruyn, William Cool,	<i>Glens Falls,</i>	4 Arts
Purcell, Henry, Jr.,	<i>Watertown,</i>	4 Arts
Purcell, William Gray,	<i>Oak Park, Ill.,</i>	4 Architecture
Purdue, Margaret Jane,	<i>E. Orange, N. J.,</i>	Sp. Arts

Purvis, Lillian Maude,	<i>Dryden,</i>	3 Arts
Putnam, Alice E,	<i>Washington, D. C.,</i>	Sp. Agriculture
Quackenbush, Paul Henry,	<i>Herkimer,</i>	2 Mech. Eng.
Quaife, Francis Wilbur,	<i>Ilion,</i>	Sr. Law
Quale, Howes James,	<i>Silver Creek,</i>	1 Civil Eng.
Quick, Howard Ludlow,	<i>Brooklyn,</i>	4 Mech. Eng.
Quigley, James Knight,	<i>Trumansburg,</i>	4 Med. (N. Y. C.)
Quinn, Patrick John,	<i>Oswego,</i>	1 Medicine
Radcliff, Lewis,	<i>Savannah,</i>	1 Forestry
Raidabaugh, John Adam,	<i>Sparrows Point, Md.,</i>	2 Mech. Eng:
Raiguel, Edward Boyer,	<i>Reading, Pa.,</i>	2 Civil Eng.
Rally, Lloyd Anthony,	<i>Albany,</i>	3 Architecture
Ralph, John Joseph,	<i>Jamaica,</i>	1 Mech. Eng.
Ramage, Samuel Young, Jr.,	<i>Oil City, Pa.,</i>	Sp. Law
Ramel, George Regis,	<i>New York City,</i>	2 Mech. Eng.
Ramsdell, Thomas Spencer,	<i>Housatonic, Mass.,</i>	2 Mech. Eng.
Ramsey, Joseph Henry,	<i>Howes Cave,</i>	1 Mech. Eng.
Ramskill, Jerome Hinds,	<i>Washington, D. C.,</i>	Sp. Forestry
Rand, Benjamin Garfield,	<i>N. Tonawanda,</i>	2 Mech. Eng.
Rand, Charles Lyman,	<i>Brooklyn,</i>	3 Arts
Randolph, John,	<i>Niagara Falls,</i>	4 Arts
Rankin, Robert,	<i>Ithaca,</i>	3 Elect. Eng.
Ransehousen, Lyman Arthur,	<i>Springfield, Mass.,</i>	1 Arts
Ransom, Leigh Collins,	<i>Dannemora,</i>	2 Arts, (1 Med.)
Ransom, William Lynn,	<i>Jamestown,</i>	Jr. Law
Rastall, Walter Henry,	<i>Chicago, Ill.,</i>	3 Mech. Eng.
Ratchford, Norman,	<i>West Nanticoke, Pa.,</i>	2 Agriculture
Rath, Walter Franklin,	<i>Ackley, Ia.,</i>	2 Elect. Eng.
Ratnoff, Hymon Leon,	<i>New York City,</i>	1 Med. (N.Y.C.)
Rattle, Paul Stuart,	<i>Oak Park, Ill.,</i>	2 Mech. Eng.
Ratzan, Michael Napoleon,	<i>New York City,</i>	1 Med. (N.Y.C.)
Ray, Anna Elizabeth, A.B., A.M.,	<i>New York City,</i>	1 Medicine
Raynsford, Robert Parker,	<i>Montrose, Pa.,</i>	2 Elect. Eng.
Read, Effie Alberta,	<i>Haverhill, Mass.,</i>	4 Arts
Read, Herbert John,	<i>Bethel, Conn.,</i>	1 Mech. Eng.
Reardon, Nye Bates,	<i>Brooklyn,</i>	2 Civil Eng.
Redmond, Hugh,	<i>Camillus,</i>	4 Civil Eng.
Redmond, John Richard,	<i>Greene,</i>	1 Law
Reece, William Asher,	<i>Christchurch, New Zealand,</i>	2 Elect. Eng.
Reed, Chester Turner,	<i>Worcester, Mass.,</i>	4 Mech. Eng.
Reed, James Irwin, Jr.,	<i>Schenectady,</i>	1 Med. (N.Y.C.)
Reese, Dale Fleming,	<i>Newark, N. J.,</i>	2 Mech. Eng.

Reid, Walker,	<i>Greenwich,</i>	1 Arts
Reidy, Thomas Joseph,	<i>Ithaca,</i>	1 Forestry
Reidy, William Joseph,	<i>Ithaca,</i>	Sp. Agriculture
Rein, Bernard,	<i>Brooklyn,</i>	2 Med. (N.Y.C.)
Reinhart, William Jefferis,	<i>Paterson, N. J.,</i>	4 Elect. Eng.
Reis, James J.,	<i>Cincinnati, O.,</i>	3 Arts
Reitze, Chester Nelson,	<i>Seattle, Wash.,</i>	2 Civil Eng.
Remick, Frederick Ninian,	<i>Geneva,</i>	1 Mech. Eng.
Renner, Emil Arthur,	<i>Youngstown, O.,</i>	1 Law
Renold, Charles Garouno,	<i>Manchester, England,</i>	1 Mech. Eng.
Renwick, Allyn King,	<i>Ben Avon, Pa.,</i>	1 Arts
Reppert, Charles Miller,	<i>Allegheny, Pa.,</i>	2 Civil Eng.
Rex, William Frederick, Ph.G.,	<i>Brooklyn,</i>	2 Med. (N.Y.C.)
Reynolds, Frank Earl,	<i>Ithaca,</i>	1 Forestry
Reynolds, William Warwick,	<i>Washington, D. C.,</i>	1 Civil Eng.
Rhodes, Charles Foster,	<i>Marcellus,</i>	4 Mech. Eng.
Rice, George Whitmore,	<i>Ithaca,</i>	4 Mech. Eng.
Rice, Howard Cameron,	<i>Buffalo,</i>	2 Elect. Eng.
Rich, Melvin,	<i>Washington, D. C.,</i>	1 Civil Eng.
Richards, Francis Howe,	<i>Enfield, Mass.,</i>	Sp. Agriculture
Richards, John Harold,	<i>Whitehall,</i>	2 Medicine
Richardson, Frank Howard,	<i>Brooklyn,</i>	3 Arts, (1 Med.)
Richardson, Harold Jay,	<i>Lowville,</i>	2 Arts
Richtmyer, Floyd Karker,	<i>Cobleskill,</i>	3 Arts
Rick, Charles Maderia,	<i>Reading, Pa.,</i>	2 Mech. Eng.
Rickard, Le Ray Sidney,	<i>Cobleskill,</i>	1 Civil Eng.
Riedel, Heien Clara,	<i>Brooklyn,</i>	4 Arts
Riegel, Ross Milton,	<i>Harrisburg, Pa.,</i>	3 Civil Eng.
Rindsfoos, Charles Siesel,	<i>Circleville, O.,</i>	1 Civil Eng.
Ripley, Allen Bradford,	<i>Chicago, Ill.,</i>	4 Arts
Ritter, Alice Emily Borgfeldt,	<i>Brooklyn,</i>	Sp. Arts
Ritter, Isidore,	<i>New York City,</i>	2 Med. (N.Y.C.)
Ritter, Rollin Von,	<i>Durango, Colo.,</i>	4 Elect. Eng.
Ritzwoller, Eugene Max,	<i>Peoria, Ill.,</i>	1 Mech. Eng.
Roat, Grover Cleveland,	<i>Rushville,</i>	1 Elect. Eng.
Robb, John Watkins,	<i>Jackson, Mich.,</i>	4 Arts
Robbins, John Loring,	<i>Great Barrington, Mass.,</i>	1 Arts
Roberts, Charles Alphonso,	<i>Lakeville, Conn.,</i>	3 Elect. Eng.
Roberts, James Louis,	<i>Hempstead,</i>	1 Agriculture
Roberts, Thomas Burroughs,	<i>Ithaca,</i>	4 Arts
Robertshaw, John Clement,	<i>Elmira,</i>	3 Arts
Robertson, Fred Eugene,	<i>Eagle Bridge,</i>	Sp. Agriculture

Robertson, Ralph Kenyon,	<i>Buffalo,</i>	3 Arts
Robertson, Ralph Noyes, S.B.,	<i>Leadville, Colo.,</i>	2 Mech. Eng.
Robinson, Emma Crasto, B.S.,	<i>Mt. Vernon,</i>	Sp. Arts
Robinson, Frank Crawl,	<i>Wellsboro, Pa.,</i>	3 Arts
Robinson, Harry Baker,	<i>Gowanda,</i>	1 Arts
Robinson, Henry Ulysses,	<i>New York City,</i>	2 Med. (N.Y.C.)
Robinson, John Alden,	<i>Ithaca,</i>	3 Med. (N.Y.C.)
Robinson, Martin,	<i>New York City,</i>	1 Med. (N.Y.C.)
Robinson, Mary Huntting,	<i>Ithaca,</i>	1 Medicine
Robinson, Ralph,	<i>Ithaca,</i>	2 Medicine
Robinson, William Alexander,	<i>Sterling, Ill.,</i>	2 Mech. Eng.
Robinson, William Christopher,	<i>Holland Patent,</i>	2 Elect. Eng.
Robson, Albert Norvin,	<i>Ilion,</i>	1 Forestry
Roby, Harold Page,	<i>Cleveland, O.,</i>	1 Forestry
Rockwell, Henry Norris,	<i>Pike,</i>	1 Law
Rockwell, James Chapman,	<i>Syracuse,</i>	2 Mech. Eng.
Rockwood, Harry Langdon,	<i>Olean,</i>	1 Medicine
Roddewig, George Washington,	<i>Davenport, Ia.,</i>	1 Mech. Eng.
Rodgers, Ralph Chapman,	<i>Binghamton,</i>	2 Mech. Eng.
Roe, Mayo Eugene,	<i>Elyria, O.,</i>	1 Mech. Eng.
Roe, Willis Warren,	<i>Wolcott,</i>	4 Arts
Roess, Martin John,	<i>Oil City, Pa.,</i>	4 Arts
Rogers, Clarence Arthur,	<i>Bergen,</i>	2 Agriculture
Rogers, Clarence Ramsey,	<i>Corry, Pa.,</i>	2 Elect. Eng.
Rogers, Edgar,	<i>Sagaponack,</i>	2 Civil Eng.
Rogers, Edgar Allan,	<i>Salt Lake City, Utah,</i>	1 Law
Rogers, Henry Albert,	<i>Sherborn, Mass.,</i>	4 Mech. Eng.
Rogers, Harvey Griffin,	<i>Michigan City, Ind.,</i>	4 Arts
Rogers, Henry Pliny, Jr.,	<i>Salamanca,</i>	1 Architecture
Rogers, Jerome Dwight,	<i>Penn Yan,</i>	1 Law
Rogers, Job Robert,	<i>New York City,</i>	3 Civil Eng.
Rogers, Robert Wilson,	<i>New York City,</i>	3 Mech. Eng.
Rogers, William Woollard,	<i>New York City,</i>	2 Arts
Rohdenburg, George Louis,	<i>New York City,</i>	2 Med. (N. Y. C.)
Roig, Harold Joseph,	<i>Poughkeepsie,</i>	1 Law
Rollins, Ethel,	<i>New York City,</i>	2 Arts, (1 Med.)
Rolston, Margaret, B.S.,	<i>Chattanooga, Tenn.,</i>	1 Arts
Romansky, Benjamin,	<i>New York City,</i>	4 Med. (N. Y. C.)
Roney, William Wheeler,	<i>New York City,</i>	2 Mech. Eng.
Root, Richard Weir,	<i>Minneapolis, Minn.,</i>	1 Civil Eng.
Rope, Frederick William,	<i>Buffalo,</i>	3 Arts
Rose, Clarence Edward,	<i>Little Rock, Ark.,</i>	2 Mech. Eng.

Rose, Evangeline Darling,	<i>Port Jefferson,</i>	2 Arts
Rose, George Stanton,	<i>Yonkers,</i>	3 Elect. Eng.
Rose, Joseph Hanson,	<i>Pittsburg, Pa.,</i>	1 Arts
Rose, William Walter,	<i>So. Orange, N. J.,</i>	3 Med. (N. Y. C.)
Rosenberg, Herman,	<i>New York City,</i>	4 Med. (N. Y. C.)
Rosenberg, Jerome Davis,	<i>New York City,</i>	4 Arts
Rosenberg, Samuel,	<i>New York City,</i>	2 Med. (N. Y. C.)
Rosenblüth, Jacob,	<i>New York City,</i>	2 Med. (N. Y. C.)
Rosencranz, Richard,	<i>Evansville, Ind.,</i>	1 Arts
Rosenheim, Minna,	<i>Baltimore, Md.,</i>	2 Arts
Rosenthal, Isidor, Phar. G.,	<i>New York City,</i>	3 Med. (N. Y. C.)
Ross, George Hilliard,	<i>Edgewater, N. J.,</i>	1 Arts
Ross, Harold Ellis,	<i>Smithboro,</i>	1 Agriculture
Rossiter, Maida,	<i>Chicago, Ill.,</i>	4 Arts
Rossman, Allen M,	<i>Hudson,</i>	2 Arts
Rossman, Sidney,	<i>Brooklyn,</i>	2 Arts
Roth, Rodolfo,	<i>Buenos Aires, Argentine Rep.,</i>	1 Elect. Eng.
Rothkowitz, Joseph,	<i>New York City,</i>	2 Med. (N. Y. C.)
Rothkugel, Max,	<i>Schlesien, Austria,</i>	Sp. Forestry
Rounds, Donald McGregor,	<i>Des Moines, Ia.,</i>	4 Civil Eng.
Rowe, William Alfonso,	<i>Newark, N. J.,</i>	4 Mech. Eng.
Rowland, Harry Shepard,	<i>Montclair, N. J.,</i>	1 Elect. Eng.
Rubira, Adriano Woodruff,	<i>Mobile, Ala.,</i>	1 Mech. Eng.
Ruch, Valentine, Jr.,	<i>Englewood, N. J.,</i>	4 Med. (N. Y. C.)
Rudich, Mark,	<i>Brooklyn,</i>	1 Arts
Runkle, Gordon,	<i>Cambridge, Mass.,</i>	3 Agriculture
Russ, George Henry, Jr.,	<i>Scranton, Pa.,</i>	Sp. Law
Russell, Irvine Justin,	<i>East Nichols,</i>	2 Med. (N. Y. C.)
Russell, William McKenzie,	<i>Great Barrington, Mass.,</i>	1 Arts
Russianoff, Max Jacob,	<i>New York City,</i>	1 Med. (N. Y. C.)
Rutherford, Harry William,	<i>Waddington,</i>	1 Civil Eng.
Rutledge, Andrew, Jr.,	<i>Rockford, Ill.,</i>	Jr. Law
Ryder, Edward Kirke,	<i>Worcester,</i>	3 Arts
Rymph, James Budd,	<i>Hyde Park,</i>	Sp. Agriculture
Ryon, Henry,	<i>Brooklyn,</i>	2 Civil Eng.
Ryon, Robert,	<i>Pottsville, Pa.,</i>	4 Arts
Sabine, George Holland,	<i>Dayton, O.,</i>	4 Arts
Sackett, Homer Samuel,	<i>Avon,</i>	1 Forestry
Sailor, Horace Price,	<i>Chicago, Ill.,</i>	1 Mech. Eng.
Sailor, Robert Warren,	<i>Chicago, Ill.,</i>	1 Arts
St. Clair, Steele Blair,	<i>Latrobe, Pa.,</i>	1 Civil Eng.
Salisbury, Orange James, Jr.,	<i>Salt Lake City, Utah,</i>	2 Mech. Eng.

Salisbury, Robert Walker,	<i>Salt Lake City, Utah,</i>	2 Mech. Eng.
Samish, Elmer Gabriel,	<i>St. Louis, Mo.,</i>	1 Mech. Eng.
Samuelson, Aaron,	<i>New York City,</i>	1 Med. (N.Y.C.)
Sanborn, Franklyn Holioway,	<i>Astoria, Ore.,</i>	1 Arts.
Sanders, Walter Edward, A.B.,	<i>Detroit, Mich.,</i>	4 Mech. Eng.
Sanderson, Julius Courtlon,	<i>Cleveland, O.,</i>	1 Forestry
Sanford, Chester Milton,	<i>Ithaca,</i>	2 Arts
Sanford, Lester Morse,	<i>New York City,</i>	2 Civil Eng.
Sanford, Merton Jarvis,	<i>Center Lisle,</i>	3 Med. (N.Y.C.)
Sanger, George Hutchins,	<i>Naugatuck, Conn.,</i>	1 Mech. Eng.
Santee, Harold Elmore,	<i>Hornellsville,</i>	3 Arts, (1 Med.)
Savacool, William Laforge,	<i>Stapleton,</i>	2 Civil Eng.
Savory, Gerald, B.A.,	<i>Banbury, Eng.,</i>	3 Elect. Eng.
Sawyer, Nelson William,	<i>Morris,</i>	3 Elect. Eng.
Sayce, Archibald Herbert,	<i>New York City,</i>	2 Mech. Eng.
Scarr, John, Jr.,	<i>Paterson, N. J.,</i>	2 Mech. Eng.
Schaaf, Albert Herman,	<i>Fort Wayne, Ind.,</i>	1 Elect. Eng.
Schade, James Walter,	<i>Brooklyn,</i>	3 Arts
Schaefer, Joseph Harvey,	<i>Liverpool,</i>	1 Elect. Eng.
Scharf, William Willcox,	<i>Brooklyn,</i>	1 Arts
Scharfmann, Pauline,	<i>Brooklyn,</i>	3 Med. (N.Y.C.)
Scheidenhelm, Fred William,	<i>Mendota, Ill.,</i>	2 Arts
Schein, Nathan,	<i>Pittsburg, Pa.,</i>	1 Civil Eng.
Schenck, Florence Marion,	<i>Fulton,</i>	1 Arts
Schenck, Harry Irvin,	<i>Dayton, O.,</i>	4 Architecture
Schiff, Leo Francis,	<i>Brooklyn,</i>	1 Med. (N.Y.C.)
Schlemmer, Edmund,	<i>Cincinnati, O.,</i>	4 Mech. Eng.
Schlenker, Charles Jacob,	<i>Batavia,</i>	1 Civil Eng.
Schmidlapp, William Horace,	<i>Cincinnati, O.,</i>	1 Mech. Eng.
Schmidt, John Lorenz,	<i>Indianapolis, Ind.,</i>	2 Arts
Schneider, Frederick,	<i>Bedford, O.,</i>	1 Mech. Eng.
Schoellkopf, Jacob Frederick,	<i>Buffalo,</i>	2 Arts
Schoellkopf, Paul Arthur,	<i>Niagara Falls,</i>	1 Arts
Schoenborn, Henry Anthony,	<i>Hackensack, N. J.,</i>	1 Law
Schoenborn, William Robert,	<i>Hackensack, N. J.,</i>	2 Mech. Eng.
Schoenijahn, Robert Polk,	<i>Brooklyn,</i>	1 Mech. Eng.
Scholes, Daniel Ransom,	<i>Chicago, Ill.,</i>	2 Mech. Eng.
Schoonover, Clifford, A.B.,	<i>New York City,</i>	1 Med. (N.Y.C.)
Schreiber, Leonard George,	<i>Cincinnati, O.,</i>	1 Civil Eng.
Schrott, John B, Jr.,	<i>Gowanda,</i>	1 Mech. Eng.
Schutt, Warren Ellis,	<i>Ithaca,</i>	2 Arts
Schwab, Florance Joseph, M.A.,	<i>New Orleans, La.,</i>	4 Elect. Eng.

Schwab, Leo,	<i>New York City,</i>	1 Med. (N.Y.C.)
Schwartz, Frank Herbert,	<i>Albany,</i>	1 Mech. Eng.
Schwartzman, Samuel,	<i>New York City,</i>	4 Med. (N.Y.C.)
Scofield, Herbert Henry,	<i>Bemus Point,</i>	1 Mech. Eng.
Scott, Frank Leslie,	<i>Morristown,</i>	Jr. Law
Scott, Mabel,	<i>Newark, N. J.,</i>	2 Medicine
Scott, Maxwell Williams,	<i>Dunkirk,</i>	4 Arts
Scoville, Henry Foster,	<i>New Canaan, Conn.,</i>	1 Mech. Eng.
Scranton, William Henry,	<i>Scranton, Pa.,</i>	4 Arts
Seaman, Arthur M,	<i>Trumansburg,</i>	2 Veterinary
Seaman, Benjamin Franklin,	<i>Matteawan,</i>	3 Med. (N.Y.C.)
Searing, Benjamin Haff, A.B.,	<i>Glen Ridge, N. J.,</i>	4 Med. (N.Y.C.)
Sears, Carlton Heald,	<i>Ithaca,</i>	4 Arts
Sears, Frank Martin,	<i>Holyoke, Mass.,</i>	2 Mech. Eng.
Sears, Keith,	<i>Searsburg,</i>	4 Med. (N.Y.C.)
Sears, Robert Bartlett,	<i>Binghamton,</i>	4 Arts
Sebring, Edgar Delos,	<i>Newfield,</i>	Jr. Law
Seeley, Grace Alvana,	<i>Spencer,</i>	3 Arts
Seely, Charles Alfred,	<i>Spencer,</i>	3 Elect. Eng.
Seely, Louise Helen,	<i>Jersey City, N. J.,</i>	Sp. Arts
Seelye, Blanche Eggleston,	<i>Ithaca,</i>	2 Arts
Seelye, Elwyn Eggleston,	<i>Ithaca,</i>	3 Civil Eng.
Seidell, William Charles,	<i>Peterboro,</i>	1 Civil Eng.
Seipp, Edwin Alexander,	<i>Chicago, Ill.,</i>	2 Architecture
Seitz, Fred Gallagher	<i>Philadelphia, Pa.,</i>	2 Mech. Eng.
Seix-Rosaly, Jaime.	<i>Fonce, Puerto Rico,</i>	Jr. Law
Sekiguchi, Yaekichi,	<i>Tokio, Japan,</i>	4 Mech. Eng.
Selden, Katharine Emily,	<i>Catskill,</i>	2 Arts
Selig, Samson,	<i>Troy,</i>	1 Arts
Semon, William Hart,	<i>Cleveland, O.,</i>	1 Architecture
Serrell, Ernest,	<i>Bayonne, N. J.,</i>	2 Mech. Eng.
Serviss, Garret Putnam, Jr.,	<i>Brooklyn,</i>	2 Civil Eng.
Sewards, Theophite Francis,	<i>New York City,</i>	3 Agr.
Seymour, Charles Kinne,	<i>Chatham,</i>	4 Mech. Eng.
Seymour, Charles Mason,	<i>Chicago, Ill.,</i>	1 Mech. Eng.
Shafer, James C Forsythe,	<i>Montgomery,</i>	2 Civil Eng.
Shalders, Roberto James, C.E.,	<i>Ithaca,</i>	3 Mech. Eng.
Shallcross, Warren Mims,	<i>Louisville, Ky.,</i>	1 Mech. Eng.
Shane, Bernard, B.S.,	<i>New York City,</i>	2 Civil Eng.
Shanley, John Francis, Jr.,	<i>Newark, N. J.,</i>	3 Arts
Shanly, Mary Edward,	<i>Binghamton,</i>	1 Arts
Shattuck, Alvin,	<i>Brooklyn,</i>	2 Veterinary

Shattuck, Herbert Carpenter,	<i>Ithaca,</i>	4 Arts
Shattuck, Hobart Parker,	<i>Brooklyn,</i>	4 Med. (N.Y.C.)
Shaw, Arthur Peer,	<i>Cherry Creek,</i>	Sr. Law
Shaw, Charles Frederick,	<i>West Henrietta,</i>	1 Agr.
Shaw, Charles Perrin,	<i>Detroit, Mich.,</i>	2 Mech. Eng.
Shaw, James Cicero,	<i>Hondo, Tex.,</i>	3 Mech. Eng.
Shaw, Joseph Duty, B.S.,	<i>Hondo, Tex.,</i>	3 Elect. Eng.
Shaw, Norman Lowrie,	<i>Glenshaw, Pa.,</i>	1 Mech. Eng.
Shaw, William Francis, B.S.,	<i>Hondo, Tex.,</i>	3 Mech. Eng.
Sheble, John Howard, Jr.,	<i>Philadelpaia, Pa.,</i>	1 Civil Eng.
Shedden, John Stephen, B.S.,	<i>Rock Springs, Wyo.,</i>	1 Mech. Eng.
Sheffield, Frederick Duane,	<i>Warsaw,</i>	1 Arts
Sheitlis, Benjamin,	<i>New York City,</i>	4 Med. (N.Y.C.)
Sheldon, Ralph Edward,	<i>Ithaca,</i>	2 Forestry
Sheldon, William Hills,	<i>Auburn,</i>	1 Medicine
Shepard, Leonard Griffin,	<i>Washington, D. C.,</i>	3 Mech. Eng.
Shepard, William Chambers,	<i>Washington, D. C.,</i>	2 Forestry
Shepherd, Vera Louise,	<i>Ithaca,</i>	2 Arts
Shepperson, Mary Clement,	<i>Hagerman, N. M.,</i>	Sp. Agriculture
Shields Norwood Rarason,	<i>Camden, N. J.,</i>	3 Agriculture
Shiland, Elmer James,	<i>Coila,</i>	4 Mech. Eng.
Shimmell, Mary,	<i>Harrisburg, Pa.,</i>	4 Arts
Shirely, James Joseph,	<i>Arizaba, Mexico,</i>	3 Mech. Eng.
Shreve, Ralph Febrey,	<i>Washington, D. C.,</i>	1 Civil Eng.
Shumway, Arthur Keller,	<i>Rochester,</i>	3 Civil Eng.
Shute, Sarah Pierson,	<i>Gloversville,</i>	1 Arts
Sibley, Jessie Gillies,	<i>Cuba,</i>	2 Arts
Sibley, Walter Adelbert,	<i>South Bend, Ind.,</i>	1 Mech. Eng.
Sibson, Horace Evans,	<i>Philadelphia, Pa.,</i>	4 Mech. Eug.
Sickmon, May Christine,	<i>Buffalo,</i>	1 Law
Sidley, Thomas Hill,	<i>Chicago, Ill.,</i>	4 Elect. Eng.
Siebold, Albert Frank,	<i>Buffalo,</i>	2 Forestry
Siegel, Abram,	<i>New York City,</i>	1 Med. (N.Y.C.)
Siefke, Frederick,	<i>Brooklyn,</i>	3 Mech. Eng.
Sill, William Miller,	<i>Jamestown,</i>	1 Medicine
Simmons, Alice Pendergast,	<i>Gloversville,</i>	1 Arts
Simmons, Lilla Gertrude,	<i>Worcester, Mass.,</i>	2 Arts
Simmons, Solomon,	<i>Cortland,</i>	1 Law
Simmons, William Howard,	<i>Oil City, Pa.,</i>	2 Arts
Simons, Arthur Burdette,	<i>Sidney,</i>	Jr. Law
Simons, Fred Bertrand,	<i>Volney,</i>	3 Veterinary
Simpkins, Simon,	<i>New York City,</i>	Sp. Agriculture

Simpson, Dwight Swain,	<i>Minneapolis, Minn.</i> , 1 Mech. Eng.
Simpson, Ray Clinton,	<i>Vincennes, Ind.</i> , 2 Agriculture
Sitler, Grace,	<i>Binghamton</i> , 4 Arts
Skinner, Albert Merriman,	<i>Albany</i> , 1 Architecture
Slater, Joseph Nelson,	<i>Buffalo</i> , 4 Civil Eng.
Slauson, Harold Whiting,	<i>Middletown</i> , 1 Mech. Eng.
Slavin, Michael,	<i>Passaic, N. J.</i> , 1 Med. (N. Y. C.)
Slavit, Joseph,	<i>Brooklyn</i> , 3 Med. (N. Y. C.)
Sleeth, Montgomery,	<i>Wilmerding, Pa.</i> 1 Elect. Eng.
Sleicher, Charles Albert,	<i>Lansingburg</i> , 3 Arts
Sloan, Robert Shunk,	<i>Ithaca</i> , 1 Forestry
Sloat, Halbert Maitland,	<i>Mt. Vernon</i> , 2 Arts
Slocombe, Edwin Mitchell,	<i>New Haven, Conn.</i> , 3 Arts
Slocum, Chester Arthur,	<i>Long Branch, N. J.</i> , 1 Mech. Eng.
Slocum, Rob Roy,	<i>Ithaca</i> , 1 Forestry
Smallwood, John Bell,	<i>LeRoy</i> , 4 Arts
Smiley, Arthur Rose,	<i>Brooklyn</i> , 1 Arts
Smit, Frank,	<i>Paterson, N. J.</i> , Jr. Law
Smith, Anna LaVerne,	<i>Sidney</i> , 2 Arts
Smith, Arthur Hale,	<i>Shortsville</i> , Sr. Law
Smith, Barrett,	<i>New York City</i> , 3 Mech. Eng.
Smith, Burr LaMonte,	<i>Hornellsville</i> , 4 Arts
Smith, Dean Philip,	<i>Louisiana, Mo.</i> , 1 Elect. Eng.
Smith, Edwin Kennedy,	<i>Nashville, Tenn.</i> , 1 Mech. Eng.
Smith, Ernest Ireland, Jr.,	<i>Kennedy</i> , 3 Veterinary
Smith, Fletcher Eugene	<i>Forest Home</i> , 1 Veterinary
Smith, Harry Edwin,	<i>Ithaca</i> , 2 Mech. Eng.
Smith, Harry George,	<i>Buffalo</i> , 1 Mech. Eng.
Smith, Helen Forsythe,	<i>N. Tonawanda</i> , 3 Arts
Smith, Henry Edmond,	<i>Baltimore, Md.</i> , 1 Civil Eng.
Smith, Howard Charles,	<i>Applegate</i> , 3 Arts
Smith, Jacob George,	<i>Freeville</i> , 4 Arts
Smith, Jay Lewis,	<i>Port Jervis</i> , 3 Arts
Smith, John B, Jr.,	<i>Plymouth, Pa.</i> , 4 Elect. Eng.
Smith, John Homer,	<i>Brewster</i> , 2 Arts
Smith, John VanWagner,	<i>White Plains</i> , 2 Med. (N. Y. C.)
Smith, Joseph Dickenson Clair,	<i>Dobbs Ferry</i> , 4 Mech. Eng.
Smith, Lawrence Ross,	<i>Arcade</i> , 1 Forestry
Smith, Lucy Gilson,	<i>Oswego</i> , 3 Arts
Smith, Manasseh, Jr.,	<i>Woodfords, Me.</i> , 2 Forestry
Smith, Mark Elmer,	<i>Erie, Pa.</i> , 1 Mech. Eng.
Smith, Mary Porter,	<i>Adams</i> , 1 Arts

Smith, Morgan Babcock,	<i>Syracuse,</i>	2 Arts
Smith, Robert Armstrong, Jr.,	<i>Brooklyn,</i>	2 Elect. Eng.
Smith, Roger Green, B.S.,	<i>Washington, D.C.,</i>	4 Arts
Smith, Samuel Newell, Jr.,	<i>Providence, R. I.,</i>	2 Med. (N.Y.C.)
Smith, Stanton Gould,	<i>Richwood, West Va.,</i>	1 Forestry
Smith, Thomas Mersereau,	<i>Union Springs,</i>	Jr. Law
Smith, Warren George,	<i>Oneonta,</i>	1 Med. (N.Y.C.)
Smithe, Percy Allis Winans,	<i>Ithaca,</i>	4 Arts, (2 Med.)
Smutz, Laura Katharine,	<i>Tidioute, Pa.,</i>	3 Arts
Sneckenberger, Earl Miner, B.Ph.,	<i>Tiffin, O.,</i>	1 Civil Eng.
Snider, Warner Garfield,	<i>Cleveland, O.,</i>	3 Mech. Eng.
Snow, Arch Miller,	<i>Boonville,</i>	1 Civil Eng.
Snow, Edward James,	<i>Montclair, N. J.,</i>	2 Elect. Eng.
Snow, Jessie,	<i>Toledo, O.,</i>	4 Arts
Snow, Mary Louise,	<i>Fulton,</i>	4 Arts
Snowden, William Hugh,	<i>Bayonne, N. J.,</i>	1 Law
Snowdon, Ralph Cuthbert,	<i>Scranton, Pa.,</i>	3 Arts
Snyder, Floyd Christian,	<i>Massilon, O.,</i>	1 Elect. Eng.
Snyder, Harold Jay,	<i>Schoharie,</i>	1 Veterinary
Snyder, Herbert Turner,	<i>Baltimore, Md.,</i>	3 Elect. Eng.
Snyder, John,	<i>Plumsteadville, Pa.,</i>	1 Architecture
Snyder, Leo Harter,	<i>Herkimer,</i>	1 Mech. Eng.
Snyder, William Clark,	<i>Binghamton,</i>	3 Arts, (1 Med.)
Soch, Emma Marion,	<i>Forestville,</i>	2 Agriculture
Somerville, John Snape,	<i>Evanston, Ill.,</i>	1 Mech. Eng.
Sommer, Harry Frank,	<i>New York City,</i>	4 Arts
Sophian, Abraham,	<i>New York City,</i>	1 Med. (N.Y.C.)
Sowles, Lewis William,	<i>Salt Lake City, Utah,</i>	1 Elect. Eng.
Specht, William Henry, D.D.S.,	<i>New York City,</i>	1 Med. (N.Y.C.)
Speed, Lorenzo Dowe,	<i>Ithaca,</i>	1 Elect. Eng.
Speiden, Eben Childs,	<i>Marshall, Va.,</i>	2 Mech. Eng.
Spencer, Charlotte Elizabeth,	<i>Jasper,</i>	2 Arts
Spencer, Clarence Garfield,	<i>Lee, Mass.,</i>	2 Mech. Eng.
Spencer, Oliver Chancy,	<i>Seattle, Wash.,</i>	1 Mech. Eng.
Speyer, Alexander Crail,	<i>Pittsburg, Pa.,</i>	1 Arts
Spicer, Clarence Winfred,	<i>Edelstein, Ill.,</i>	Sp. Mech. Eng.
Sporer, Joseph Lorenz,	<i>Owego,</i>	1 Arts
Sprague, Mary Winifred,	<i>New Berlin,</i>	3 Arts
Springer, John Jacob,	<i>Cincinnati, O.,</i>	4 Mech. Eng.
Squier, Clarence Cecil,	<i>Ithaca,</i>	1 Law
Squires, Charles Anthony, A.B.,	<i>New York City,</i>	3 Med. (N.Y.C.)
Staats, Edward Pomeroy,	<i>Cooperstown,</i>	1 Elect. Eng.

Stabler, Herbert Osborne,	<i>Spencerville, Md.,</i>	Sp. Forestry
Stace, Archibald Kidston,	<i>Worcester, Mass.,</i>	1 Arts
Stafford, James Prendergast,	<i>Jamestown,</i>	1 Law
Stanbrough, Duncan Goldsmith,	<i>New York City,</i>	2 Mech. Eng.
Stanion, D Curtis,	<i>Ithaca,</i>	Sp. Agriculture
Stanley, Grant, B.S.,	<i>Meriden, Conn.,</i>	3 Med. (N.Y.C.)
Stanley, Johnston,	<i>St. Johnsbury, Vt.,</i>	3 Arts
Stark, George William,	<i>Little Falls,</i>	1 Medicine
Starr, Arthur,	<i>Sewickley, Pa.,</i>	1 Civil Eng.
Startz, Benjamin,	<i>New York City,</i>	1 Med. (N.Y.C.)
Stearns, David Pyott,	<i>Chicago, Ill.,</i>	1 Mech. Eng.
Stearns, Ellis Johnson, B.E.,	<i>New Orleans, La.,</i>	4 Mech. Eng.
Stearns, Florence Tabor,	<i>Brooklyn,</i>	1 Arts
Stearns, John,	<i>Denver, Colo.,</i>	1 Civil Eng.
Stechmann, Frederick William,	<i>New York City,</i>	2 Med. (N.Y.C.)
Steckel, Leopold,	<i>New York City,</i>	Sp. Agriculture
Stecker, Margaret Loomis,	<i>Mt. Vernon,</i>	1 Arts
Steel, William Foster,	<i>Mt. Vernon,</i>	3 Mech. Eng.
Steele, Edward Albert,	<i>Philadelphia, Pa.,</i>	1 Mech. Eng.
Steers, Edna Louise,	<i>Brooklyn,</i>	3 Arts
Stein, Herbert Edward,	<i>New York City,</i>	2 Med. (N.Y.C.)
Steiner, Sydney,	<i>Brooklyn,</i>	3 Med. (N.Y.C.)
von Steinwehr, Fred,	<i>Cincinnati, O.,</i>	1 Elect. Eng.
Stephens, Fitch Hibbard,	<i>Ithaca,</i>	1 Law
Stephens, Ross Wilmer,	<i>Canisteo,</i>	2 Arts
Stern, Harold Gross,	<i>Spokane, Wash.,</i>	1 Mech. Eng.
Stevens, Benjamin,	<i>New York City,</i>	1 Med. (N.Y.C.)
Stevens, Donald French,	<i>St. Paul, Minn.,</i>	2 Civil Eng.
Stevens, William Clifford,	<i>Portland, Me.,</i>	1 Mech. Eng.
Stewart, George Robinson,	<i>Allegheny, Pa.,</i>	3 Elect. Eng.
Stiefel, Isaac,	<i>New York City,</i>	4 Med. (N.Y.C.)
Stigner, Per, A.B.,	<i>New York City,</i>	Sp. Med. (N.Y.C.)
Stiles, Sylvester Pierce,	<i>Philadelphia, Pa.,</i>	1 Elect. Eng.
Stillman, Austin Frank,	<i>Brooklyn,</i>	1 Mech. Eng.
Stirling, Vincent Reynolds,	<i>Oil City, Pa.,</i>	2 Civil Eng.
Stockwell, Walter Edward,	<i>Cortland,</i>	4 Elect. Eng.
Stokes, Samuel Evans, Jr.,	<i>Germantown, Pa.,</i>	1 Arts
Stolte, Johanna Cathrine,	<i>Mt. Vernon,</i>	2 Arts
Stone, Archibald,	<i>Binghamton,</i>	1 Agr.
Stone, Albert Winfield,	<i>Binghamton,</i>	3 Mech. Eng.
Stone, Delia May,	<i>Ithaca,</i>	3 Arts
Stone, Helen Lovica,	<i>Ithaca,</i>	1 Arts

Storz, Joseph Frank,	<i>Wilkes-Barre, Pa.,</i>	1 Civil Eng.
Stoughton, Elisabeth Alden,	<i>Hartford, Conn.,</i>	1 Arts
Stow, William Loomis, Jr.,	<i>Buffalo,</i>	Jr. Law
Stowell, Elisabeth,	<i>Black Creek,</i>	Sp. Arts
Strachstein, Abraham,	<i>New York City,</i>	4 Med. (N.Y.C.)
Strane, James Albert,	<i>St. Paul, Minn.,</i>	1 Mech. Eng.
Strang, William Frederick,	<i>Malcom,</i>	3 Arts
Stratton, Harry Frost,	<i>Tiffin, O.,</i>	4 Mech. Eng.
Stratton, Julian Arthur,	<i>Oxford,</i>	3 Elect. Eng.
Straus, Joseph Henry, Jr.,	<i>Baltimore, Md.,</i>	3 Architecture
Streep, Isaac,	<i>New York City,</i>	4 Med. (N.Y.C.)
Street, George Tatum, A.B.,	<i>Ithaca,</i>	4 Mech. Eng.
Strong, Cora,	<i>Walhalla, S. C.,</i>	4 Arts
Strong, James Gregory,	<i>Cleveland, O.,</i>	1 Mech. Eng.
Strong, Levi Wilton,	<i>Amsterdam,</i>	Jr. Law
Strong, Vedder,	<i>Amsterdam,</i>	Jr. Law
Stroud, Bert Brenette, B.S., D.Sc.,	<i>Ithaca,</i>	3 Veterinary
Strowger, Ernest Palmer,	<i>Brighton,</i>	2 Civil Eng.
Stuckey, Robert Lincoln,	<i>Buffalo,</i>	2 Mech. Eng.
Sturdevant, James Hiram,	<i>Ithaca,</i>	3 Civil Eng.
Sturdevant, John Thomson,	<i>Wilkes-Barre, Pa.,</i>	Sr. Law
Sullivan, John Leo,	<i>Stockton,</i>	Jr. Law
Sunderbruch, Jens Frederick,	<i>Davenport, Ia.,</i>	1 Arts
Sunstein, Leon Cleveland,	<i>Allegheny, Pa.,</i>	1 Arts
Sutton, Anna Alice,	<i>Ithaca,</i>	1 Arts
Sutton, Reeva Alice,	<i>Dundee,</i>	3 Arts
Swan, Cecil Jarvis,	<i>Elmira,</i>	3 Arts
Swan, William Lincoln, Jr.,	<i>Oyster Bay,</i>	1 Elect. Eng.
Swartz, Francis Edward,	<i>Marlboro,</i>	Sr. Law
Sweet, Richard Leigh,	<i>Waterloo,</i>	1 Mech. Eng.
Sweeney, Robert,	<i>Indianapolis, Ind.,</i>	1 Law
Sweeton, Agnes Getty,	<i>Philadelphia, Pa.,</i>	4 Arts
Swift, Douglas,	<i>Cuba,</i>	3 Arts
Swiggett, Edward Mansfield,	<i>Morrow, O.,</i>	1 Agriculture
Sze, Soa Chiang Thomas,	<i>Shanghai, China,</i>	2 Mech. Eng.
Taber, Silas,	<i>Auburn,</i>	4 Elect. Eng.
Taber, William Battey,	<i>Brooklyn,</i>	1 Arts
Tailby, George Walter,	<i>Ithaca,</i>	1 Agriculture
Taintor, Archie Raymond,	<i>Elizabeth, N. J.,</i>	3 Arts
Takami, Tayohiko Campbell,	<i>Kumamoto, Japan,</i>	2 Med. (N.Y.C.)
Talboys, Henry Hanscome,	<i>Eveleth, Minn.,</i>	1 Mech. Eng.
Tallmadge, Claud Paul,	<i>West Groton,</i>	4 Arts

Tallmadge, Carl E,	<i>West Groton,</i>	1 Forestry
Tallman, Carl Cornwell,	<i>Auburn,</i>	1 Arts
Tallman, John Bradford,	<i>Auburn,</i>	Sr. Law
Taylor, Charles Henry,	<i>Camillus,</i>	1 Veterinary
Taylor, Charles Keen,	<i>Philadelphia, Pa.,</i>	2 Mech. Eng.
Taylor, Gordon McDougall,	<i>Scranton, Pa.,</i>	1 Mech. Eng.
Taylor, Hayes Clark,	<i>Doe Run, Pa.,</i>	1 Agriculture
Taylor, J Parker,	<i>Penn Yan,</i>	4 Elect. Eng.
Taylor, Nelson Vinton,	<i>Salisbury, N. C.,</i>	2 Arts
Taylor, Royden Johnston, B. E.,	<i>Indiana, Pa.,</i>	4 Civil Eng.
Taylor, Wickham,	<i>Norfolk, Va.,</i>	1 Architecture
Taylor, William Richard,	<i>Brooklyn,</i>	2 Civil Eng.
Tefft, Henry Delano,	<i>Norwich,</i>	4 Arts
Tefft, Hester Pardee,	<i>Little Falls,</i>	1 Arts
Teller, Chester Jacob, A.B.,	<i>Philadelphia, Pa.,</i>	2 Arts
Teller, Leopold Hirsh, B.S. in E.,	<i>Philadelphia, Pa.,</i>	1 Law
Teller, Spencer Jay,	<i>Unadilla,</i>	1 Mech. Eng.
Temple, Herbert Asher,	<i>Seneca,</i>	1 Elect. Eng.
Tennant, Arthur Smith,	<i>Westfield,</i>	Sr. Law
Terry, Parker Sherley,	<i>Louisville, Ky.,</i>	1 Arts
Thomas, Allen Job,	<i>Greenwich,</i>	1 Arts
Thomas, Frederick Walker,	<i>Bayonne, N. J.,</i>	2 Civil Eng.
Thomas, James Blaine,	<i>Elyria, O.,</i>	3 Civil Eng.
Thomas, John Thomas,	<i>Scranton, Pa.,</i>	1 Mech. Eng.
Thomas, Royal David,	<i>Oakmont, Pa.,</i>	1 Elect. Eng.
Thomas, William Henry,	<i>Elyria, O.,</i>	2 Mech. Eng.
Thompson, Alexander Holt,	<i>Sherman, Tex.,</i>	1 Law
Thompson, Byron Lyman,	<i>Syracuse,</i>	4 Mech. Eng.
Thompson, Carrie Wilber, A.B.,	<i>Highland Falls,</i>	3 Med. (N. Y. C.)
Thompson, Charles Lewis,	<i>South Otselic,</i>	1 Elect. Eng.
Thompson, Eustis Henry,	<i>Baltimore, Md.,</i>	2 Mech. Eng.
Thompson, F Van,	<i>Marcellus,</i>	1 Forestry
Thompson, Harrison Coffin,	<i>Daytona, Fla.,</i>	1 Elec. Eng.
Thompson, Hoxie Harry, B.S.,	<i>Sherman, Tex.,</i>	3 Civil Eng.
Thompson, Mulford Conklin,	<i>Attlebury,</i>	1 Veterinary
Thompson, Ransford Clark,	<i>Oil City, Pa.,</i>	4 Arts
Thompson, Robert Henry Dewight,	<i>Westfield,</i>	1 Civil Eng.
Thompson, William James,	<i>Brooklyn,</i>	Sp. Agriculture
Thompson, Walter Ira,	<i>Holland Patent,</i>	3 Agriculture
Thomson, Ralph Moore,	<i>Brooklyn,</i>	2 Civil Eng.
Thorpe, Walter Franklin, B. Agr.,	<i>New Haven, Conn.,</i>	4 Agriculture
Thrall, William Austin, Jr.,	<i>Chicago, Ill.,</i>	1 Elect. Eng.

Thro, Frederick Henry,	<i>Ithaca,</i>	4 Arts
Thro, William Crooks, B.S.A., A.M.,	<i>Ithaca,</i>	1 Medicine
Throop, Henry Grosvenor,	<i>Lebanon,</i>	2 Civil Eng.
Tibbetts, Harland Bryant,	<i>Ithaca,</i>	3 Arts
Tietje, Arthur Jerrold,	<i>Dayton, O.,</i>	4 Arts
Tietze, Samuel,	<i>New York City,</i>	1 Med. (N.Y.C.)
Tiffany, John Blakeslee, B.S.A.,	<i>Hop Bottom, Pa.,</i>	2 Veterinary
Tiffany, Nathan Newton,	<i>Bridge Hampton,</i>	2 Civil Eng.
Timmermau, Ray,	<i>Fort Plain,</i>	1 Mech. Eng.
Tinkler, John, Jr.,	<i>Deposit,</i>	2 Arts, (1 Med.)
Titcomb, Roland Elbert,	<i>Rowley, Mass.,</i>	3 Mech. Eng.
Titus, Charles Israel,	<i>West Windsor,</i>	2 Med. (N.Y.C.)
Titus, Silas Joseph,	<i>Syracuse,</i>	1 Elect. Eng.
Titus, Wetmore Holloway,	<i>Plainfield, N. J.,</i>	2 Mech. Eng.
Todd, John William,	<i>Pittsburg, Pa.,</i>	1 Mech. Eng.
Todd, Leona Estella,	<i>Rochester,</i>	4 Arts, (2 Med.)
Tolin, Richard Morton,	<i>Indianapolis, Ind.,</i>	2 Arts
Tolles, Frank Clifton,	<i>Brooklyn,</i>	2 Civil Eng.
Tomkins, Lucy Neiley,	<i>Stoney Point,</i>	4 Arts
Tompkins, George Nelson,	<i>Ossining,</i>	4 Med. (N.Y.C.)
Tompkins, Howard Campbell,	<i>Brooklyn,</i>	2 Civil Eng.
Tonks, Eliza,	<i>New York City,</i>	4 Arts
Tope, John Wesley, Jr.,	<i>Oak Park, Ill.,</i>	1 Arts
Topping, Claude Hamilton,	<i>No. Harpersfield,</i>	2 Med. (N.Y.C.)
Topping, Elizabeth Russell,	<i>Ithaca,</i>	1 Arts
Torian, Thomas Richard, A.B., B.S.,	<i>Midway, Va.,</i>	4 Elect. Eng.
Torres, Antonio Constacio, B.A.,	<i>Manila, P. I.,</i>	1 Law
Tourison, Charles Edward,	<i>Philadelphia, Pa.,</i>	2 Civil Eng.
Tourison, George Bartle,	<i>Philadelphia, Pa.,</i>	4 Architecture
Tousey, Thomas Grant,	<i>Pittsford,</i>	1 Medicine
Townsend, Anna B,	<i>Washington, D.C.,</i>	4 Arts
Townsend, Stephen Herbert,	<i>Glen Head,</i>	4 Elect. Eng.
Tracy, John Cadman,	<i>Hudson,</i>	1 Arts
Tracy, Reginald Pierce,	<i>New York City,</i>	1 Elect. Eng.
Tracy, Walter Hoyt,	<i>Towanda, Pa.,</i>	2 Civil Eng.
Traum, Jacob,	<i>New York City,</i>	1 Veterinary
Trautschold, Gordon Manfred,	<i>Montclair, N. J.,</i>	1 Arch.
Travers, Henry Adelbert,	<i>Saratoga Springs,</i>	1 Elect. Eng.
Travieso, Martin, A.B.,	<i>Mayagüez, Puerto Rico,</i>	Sr. Law
Treacy, John Lear,	<i>Helena, Mont.,</i>	1 Arts
Tree, Edna Gertrude,	<i>Ithaca,</i>	4 Arts
Trimby, Edward James,	<i>Washington Mills,</i>	2 Elect. Eng.

Troy, Andrew Charles Francis,	<i>Brooklyn,</i>	4 Arts
Trumbull, Roscoe Hale,	<i>Denver, Colo.,</i>	1 Civil Eng.
Tubbs, Warren,	<i>Osceola, Pa.,</i>	3 Arts
Tuck, Charles Henry,	<i>Ogdensburg,</i>	1 Arts
Tucker, Lillian Blanche,	<i>Gowanda,</i>	2 Arts
Tudela, Gabriel,	<i>Lima, Peru,</i>	1 Mech. Eng.
Tunison, Richard Guy, Ph.G.,	<i>New York City,</i>	1 Med. (N.Y.C.)
Turner, George Follett,	<i>Brooklyn,</i>	1 Arts
Turner, George Harbottle,	<i>Auburn,</i>	Sr. Law
Turner, Kenneth Bertrand,	<i>Scriba,</i>	4 Civil Eng.
Turner, Ralph Coit,	<i>Marietta, O.,</i>	1 Mech. Eng.
Tydeman, Stephen James,	<i>Bloomfield, N. J.,</i>	1 Mech. Eng.
Tydeman, William Alfred,	<i>Bloomfield, N. J.,</i>	4 Mech. Eng.
Tyng, Elizabeth McJimsey, B.S.,	<i>New York City,</i>	4 Arts
Uihlein, Robert August,	<i>Milwaukee, Wis.,</i>	1 Law
Ulrich, John Linck,	<i>Brooklyn,</i>	1 Med. (N.Y.C.)
Umstad, Wilfred LeRoy,	<i>Norristown, Pa.,</i>	1 Elect. Eng.
Underhill, George Gardner,	<i>Albany,</i>	1 Civil Eng.
Underwood, Harold Barnes,	<i>Jamestown,</i>	1 Arts
Underwood, Harry Gregory,	<i>New York City,</i>	1 Law
Underwood, Helen Willoughby,	<i>New York City,</i>	1 Arts
Underwood, Russell Sage,	<i>Baltimore, Md.,</i>	4 Arts
Unger, Arthur Sidney,	<i>New York City,</i>	2 Med. (N.Y.C.)
Upton, George Burr,	<i>Ithaca,</i>	3 Mech. Eng.
Urner, Frank Arnold,	<i>Elizabeth, N. J.,</i>	4 Arts
Urner, Jonas Paul,	<i>Frederick, Md.,</i>	3 Civil Eng.
Utley, Mildred Jeanne,	<i>Gloversville,</i>	2 Arts
Utting, George Arthur,	<i>Saranac Lake,</i>	Sr. Law
Utz, Charles Phillips,	<i>Pittsford,</i>	3 Civil Eng.
Vail, George Ira,	<i>Cleveland, O.,</i>	1 Forestry
Vail, Owen,	<i>Bath,</i>	Jr. Law
Vail, Roger Sherman,	<i>Highland Park, Ill.,</i>	1 Arts
Van Alstyne, Thomas Jefferson,	<i>Whittier, Cal.,</i>	1 Elect. Eng.
Van Buren, De Witt,	<i>Kingston,</i>	1 Law
Vanderlyn, Joseph Hasbrouck,	<i>New Paltz,</i>	4 Arts
Van Deventer, John Herbert,	<i>Buffalo,</i>	1 Mech. Eng.
Van Dyck, Edward Spaulding,	<i>Valatie,</i>	Jr. Law
van Löben Sels, Ernst Diederick,	<i>Oakland, Cal.,</i>	3 Mech. Eng.
van Löben Sels, Maurits Carel Constantyn,	<i>Oakland, Cal.,</i>	3 Agriculture
van Loon, Hendrik Willem,	<i>The Hague, Holland,</i>	1 Arts
Van Mater, Henry Field,	<i>Atlantic Highlands, N. J.,</i>	1 Med. (N.Y.C.)
Vanneman, Charles Reeve,	<i>Havre-de-Grace, Md.,</i>	4 Civil Eng.

Van Nostrand, Leonard G,	<i>Binghamton,</i>	2 Mech. Eng.
de Varona, Joseph Leo,	<i>New York City,</i>	2 Med. (N.Y.C.)
Van Vleet, Montgomery Sandford,	<i>Ovid,</i>	3 Elect. Eng.
Van Wagenen, Henry Tracy,	<i>Oxford,</i>	3 Elect. Eng.
Van Sant, Belle,	<i>Newtown, Pa.,</i>	Sp. Arts
Van Zile, Frank M,	<i>Caledonia,</i>	1 Mech. Eng.
Vatet, Oscar Valentine,	<i>Brooklyn,</i>	2 Architecture
Vaughan, Ernest Masters,	<i>Brooklyn,</i>	1 Med. (N.Y.C.)
Vaughan, Leonard Holden,	<i>Chicago, Ill.,</i>	3 Arts
Vawter, William Arthur, 2nd,	<i>Chicago, Ill.,</i>	2 Arts
Veerhoff, Otto Louis,	<i>Washington, D. C.,</i>	1 Arts
Velarde y Cobian, Manuel Carlos,	<i>Lima, Peru,</i>	3 Elect. Eng.
Vernon, John,	<i>Brooklyn,</i>	1 Mech. Eng.
Veser, Lucius Otto, B.A.,	<i>Seattle, Wash.,</i>	4 Elect. Eng.
Vickers, Harry William,	<i>Canojaharie,</i>	4 Med. (N.Y.C.)
Viertels, Ephraim, B.S.,	<i>New York City,</i>	2 Civil Eng.
Viles, Lawrence Motley,	<i>Lake Forest, Ill.,</i>	3 Elect. Eng.
Vincent, Harold Blanchard,	<i>Lutherville, Md.,</i>	3 Elect. Eng.
Vincent, Harry Fowler,	<i>Odell, Ill.,</i>	3 Arts
Vincent, Sidney Coombe,	<i>Lutherville, Md.,</i>	2 Mech. Eng.
Vinton, James Chapin,	<i>Canal Dover, O.,</i>	3 Elect. Eng.
Vogt, Walter Eugene,	<i>Brooklyn,</i>	4 Med. (N.Y.C.)
Volk, Lester David,	<i>Brooklyn,</i>	1 Med. (N.Y.C.)
Vonnegut, Anton,	<i>Indianapolis, Ind.,</i>	2 Mech. Eng.
Vonnegut, Arthur,	<i>Indianapolis, Ind.,</i>	1 Arts
Voris, William Slade,	<i>Akron, O.,</i>	1 Arts
Vose, Robert Emory,	<i>New Orleans, La.,</i>	2 Mech. Eng.
Wadsworth, Edward Arthur,	<i>Newark, N. J.,</i>	1 Mech. Eng.
Wagner, George,	<i>Water Valley, Miss.,</i>	1 Elect. Eng.
Wagner, Otto,	<i>New York City,</i>	4 Med. (N.Y.C.)
Waite, Mary Violet,	<i>Hartford, Conn.,</i>	2 Arts
Wake, Frederick Greene,	<i>Auburn,</i>	1 Medicine
Walbran, Christopher James, Jr.,	<i>Brooklyn,</i>	1 Mech. Eng.
Walker, Alfred Augustus,	<i>Birmingham, Ala.,</i>	2 Med. (N.Y.C.)
Walker, Charles Leopold,	<i>North Evans,</i>	3 Civil Eng.
Walker, Edward Everett,	<i>Erie, Pa.,</i>	1 Mech. Eng.
Walker, Fernando Murray, B.A.,	<i>Cordoba, Arg. Rep.,</i>	2 Elect. Eng.
Walker, George Wilfred,	<i>Waverly,</i>	1 Elect. Eng.
Walker, Harry Abram,	<i>New York City,</i>	2 Medicine
Wall, Eleanor Gertrude,	<i>Ithaca,</i>	2 Arts
Wallace, Frederick Ashly,	<i>Washington, D. C.,</i>	1 Mech. Eng.
Wallace, Lindsay Hugh,	<i>Cleveland, O.,</i>	1 Mech. Eng.

Wallace, William Lewis, Jr.,	<i>Orange, N. J.,</i>	1 Mech. Eng.
Wallach, William Isidore,	<i>New York City,</i>	1 Med. (N.Y.C.)
Wallin, Daisy Florence,	<i>Gilbertsville,</i>	4 Arts
Wallis, Frank Gilbert,	<i>Elmer, Pa.,</i>	1 Arts
Walmsley, Fred Dowling,	<i>Brasher Falls,</i>	2 Veterinary
Walsh, William Edward,	<i>Marcellus,</i>	2 Med. (N.Y.C.)
Walton, Kate,	<i>Phoenicia,</i>	1 Arts
Wandling, Vera,	<i>Ithaca,</i>	4 Arts
Wankel, George Canning,	<i>Utica,</i>	2 Medicine
Ward, Lawrence Colin,	<i>Newark, N. J.,</i>	1 Mech. Eng.
Ward Walter Keefer,	<i>Ravena,</i>	1 Civil Eng.
Ward, William James,	<i>Montclair, N. J.,</i>	4 Agriculture
Wardwell, Arthur Soper,	<i>Rome,</i>	2 Mech. Eng.
Warner, Austin McRaven, A.B.,	<i>Vicksburg, Miss.,</i>	2 Mech. Eng.
Warner, Carrie Adele,	<i>Rochester,</i>	3 Arts
Warner, Earle Spear, B.L.,	<i>Clifton Springs,</i>	1 Law
Warner, Fred Leon,	<i>Fairport,</i>	3 Arts
Warner, Harold Saleno,	<i>Buffalo,</i>	2 Arts
Warner, Irving,	<i>Wilmington, Del.,</i>	3 Mech. Eng.
Warner, Joseph DeWitt,	<i>New York City,</i>	4 Arts
Warner, Lea Pusey,	<i>Wilmington, Del.,</i>	4 Mech. Eng.
Warner, Maurice Lee,	<i>Beacon Falls, Conn.,</i>	1 Mech. Eng.
Warner, William Jay,	<i>Springville,</i>	4 Arts
Warren, Chester Ingersoll,	<i>Troy,</i>	2 Mech. Eng.
Warren, George Frederick, Jr., B.Sc.,	<i>Harvard, Neb.,</i>	4 Agriculture
Warren, George Sessions,	<i>Worcester, Mass.,</i>	2 Mech. Eng.
Warren, Walter Garfield,	<i>Chicago, Ill.,</i>	4 Arts
Wasch, Milton Goodman,	<i>Brooklyn,</i>	2 Med. (N. Y. C.)
Waterall, Howard Lehman,	<i>Philadelphia, Pa.,</i>	1 Mech. Eng.
Waterbury, Warren C,	<i>Whitesboro,</i>	2 Arts
Waterman, Charlotte Cornelia,	<i>Hudson,</i>	4 Arts
Waters, Elsie,	<i>Rochester,</i>	1 Arts
Waters, Herman Bierce,	<i>Bozeman, Mont.,</i>	4 Elect. Eng.
Watrous, Louise Electa,	<i>Montrose, Pa.,</i>	3 Arts
Watt, Avice McIntosh,	<i>Brooklyn,</i>	3 Arts
Watt, Harold Woodruff,	<i>Wilkes-Barre, Pa.,</i>	1 Mech. Eng.
Watt, Homer Andrew,	<i>Wilkes-Barre, Pa.,</i>	1 Arts
Waud, Ernest Othnel Pester,	<i>New York City,</i>	1 Mech. Eng.
Way, Cassius, B.Agr.,	<i>Ithaca,</i>	2 Arts
Weatherlow, Hugh Edgar,	<i>Yorkshire,</i>	1 Civil Eng.
Weaver, Philip Victor,	<i>Brooklyn,</i>	1 Veterinary
Webb, Eric Hastings,	<i>Wellsboro, Pa.,</i>	3 Arts

Webb, Hubert Greaves,	<i>Ithaca,</i>	2 Elect. Eng.
Webb, Louis Albert,	<i>Pasadena, Cal.,</i>	3 Mech. Eng.
Webb, Seth William,	<i>Sugar Hill,</i>	1 Civil Eng.
Webbe, Robert St. Clare Stanley,	<i>New York City,</i>	1 Med. (N.Y.C.)
Weber, Bernace Bensley, Jr.,	<i>Salamanca,</i>	3 Civil Eng.
Weber, Edward William,	<i>Mt. Vernon,</i>	4 Med. (N.Y.C.)
Weber, Raxley F.,	<i>Salamanca,</i>	4 Arts
Weber, Rudolf Lorenz,	<i>Paterson, N. J.,</i>	2 Mech. Eng.
Webster, Charles Henry,	<i>West Laurens,</i>	3 Med. (N.Y.C.)
Webster, Earnest Herbert,	<i>Duluth, Minn.,</i>	1 Mech. Eng.
Webster, Towner Keeney, Jr.,	<i>Evanston, Ill.,</i>	4 Mech. Eng.
Weed, Alfred Cleveland,	<i>New Hartford,</i>	3 Forestry
Weed, Ruth May,	<i>North Rose,</i>	1 Arts
Weidman, J Hynds,	<i>Syracuse,</i>	2 Civil Eng.
Weidner, Carl Robert,	<i>Buffalo,</i>	3 Civil Eng.
Weiffenbach, Norman Conrad,	<i>Dayton, O.,</i>	Sp. Arch.
Weil, Abraham,	<i>Niagara Falls,</i>	Sr. Law
Weil, Helene,	<i>Goldsboro, N. C.,</i>	2 Arts
Weiner, Edwin Morris Richard,	<i>Kingston,</i>	2 Elect. Eng.
Weiss, Howard Frederick,	<i>Paterson, N. J.,</i>	2 Forestry
Welborn, Edgar Calvert, A.B.,	<i>Philadelphia, Pa.,</i>	4 Mech. Eng.
Welch, George Morgan,	<i>Passaic, N. J.,</i>	4 Arts
Welch, Leon Cowles,	<i>Greene,</i>	1 Mech. Eng.
Weldgen, Nicholas John,	<i>Batavia,</i>	1 Law
Weller, Aaron,	<i>New York City,</i>	3 Med. (N.Y.C.)
Weller, Nellie Frances,	<i>Ilion,</i>	1 Arts
Weller, Ralph Charles,	<i>Troy, O.,</i>	1 Mech. Eng.
Welles, Edward Murray,	<i>Addison,</i>	2 Arts, (1 Med.)
Welles, Matthias Hollenbeck,	<i>Big Flats,</i>	3 Arts
Wellman, Holley Garfield,	<i>Cleveland, O.,</i>	2 Mech. Eng.
Wells, David Torrey,	<i>Cazenovia,</i>	3 Arts
Wells, John Hilbish,	<i>Tiffin, O.,</i>	4 Mech. Eng.
Welsh, Everett Cartwright,	<i>Philadelphia, Pa.,</i>	2 Mech. Eng.
Wensley, Edna,	<i>Albany,</i>	3 Arts
Wentworth, John Elwood,	<i>Harrison, Me.,</i>	4 Arts
Werner, Charles Kuhn,	<i>New York City,</i>	1 Arts
Wernicke, Carl Leopold, B.E.,	<i>New Orleans, La.,</i>	4 Elect. Eng.
Westcott, Adelaide May,	<i>Knox Centre, Me.,</i>	2 Medicine
Wessman, George Anthony,	<i>New York City,</i>	3 Mech. Eng.
Wesson, Douglas Bertram,	<i>Springfield, Mass.,</i>	1 Mech. Eng.
West, Frank,	<i>Buffalo,</i>	3 Elect. Eng.
West, Louis Coulton,	<i>Evanston, Ill.,</i>	1 Mech. Eng.

Westcott, Ella Barker,	<i>Buffalo,</i>	1 Arts
Westover, Harvey Leroy,	<i>Austerlitz,</i>	Sp. Agriculture
Wheeler, John,	<i>New York City,</i>	4 Mech. Eng.
Wheeler, Merton Rone,	<i>Salt Lake City, Utah,</i>	1 Elect. Eng.
Wheeler, Perley Samuel,	<i>Plattsburg,</i>	3 Arts
Wheeler, Portius Rollin,	<i>Peoria, Ill.,</i>	1 Arts
Wheeler, William Truesdale,	<i>Peoria, Ill.,</i>	4 Arts
Wheelock, William Dant,	<i>Kennedy,</i>	Sp. Agriculture
Whipple, Cyrus Avery, A.B., B.Pd.,	<i>Seattle, Wash.,</i>	4 Elect. Eng.
Whitbeck, Arthur Sidney,	<i>Rochester,</i>	4 Civil Eng.
Whitcomb, Don Salmon,	<i>Brooklyn,</i>	1 Arts
White, Alfred Winfield,	<i>Brooklyn,</i>	2 Med. (N.Y.C.)
White, Anna Maria,	<i>Utica,</i>	Sp. Agriculture
White, Carl Foster,	<i>Cleveland, O.,</i>	3 Architecture
White, Charles Carroll,	<i>Utica,</i>	2 Mech. Eng.
White, Elizabeth Brett,	<i>Otisville,</i>	3 Arts
White, Gorrell Robert,	<i>Auburn,</i>	2 Arts
White, John Jay, Jr.,	<i>Albany,</i>	2 Mech. Eng.
White, Leslie Leeroy,	<i>Oskaloosa, Ia.,</i>	2 Forestry
White, Theodore Parkman,	<i>New York City,</i>	2 Elect. Eng.
White, Wilfred Wallace, M.S.,	<i>Oskaloosa, Ia.,</i>	1 Forestry
White, Zella Mildred,	<i>Bradford, Pa.,</i>	3 Med. (N.Y.C.)
Whited, Harriet,	<i>Rochester,</i>	2 Arts
Whitehead, James Harold,	<i>Buffalo,</i>	1 Mech. Eng.
Whiting, George Scott,	<i>Brooklyn,</i>	1 Forestry
Whiting, Rex,	<i>Patchin,</i>	1 Veterinary
Whitney, Francis Luther,	<i>Elmira,</i>	1 Arts
Whitney, Jessamine Sophia,	<i>Union,</i>	2 Arts
Whitney, William Parker,	<i>Dayton, O.,</i>	3 Architecture
Whittaker, Elizabeth Leigh,	<i>Caroline Centre,</i>	2 Arts
Whittenmore, Andenried,	<i>St. Louis, Mo.,</i>	4 Mech. Eng.
Whittlesey, William Augustus, Jr.,	<i>Pittsfield, Mass.,</i>	3 Mech. Eng.
Wicks, James Monroe,	<i>Brooklyn,</i>	2 Med. (N.Y.C.)
Wicksman, Samuel,	<i>Brooklyn,</i>	1 Med. (N.Y.C.)
Wiederhold, Edward John,	<i>Schenectady,</i>	1 Mech. Eng.
Wien, Paul A,	<i>Mansfield, O.,</i>	1 Elect. Eng.
Wight, Frank Clinton,	<i>Washington, D. C.,</i>	3 Civil Eng.
Wight, Herbert, A.B.,	<i>Andes,</i>	1 Law
Wilbur, Bert Raymond,	<i>Clear Creek,</i>	3 Veterinary
Wilcox, Henry Hopson, Jr.,	<i>Potsdam,</i>	2 Medicine
Wilcox, Roscoe Squires,	<i>Bergen,</i>	2 Medicine
Wilder, Edward,	<i>Louisville, Ky.,</i>	1 Arts

Wilder, Edward Tucker,	<i>Elmhurst, Ill.,</i>	1 Mech. Eng.
Wilder, Erskine Phelps,	<i>Elmhurst, Ill.,</i>	2 Mech. Eng.
Wilder, La Verne Arthur,	<i>Ithaca,</i>	1 Elect. Eng.
Wilkeson, Mary Juana,	<i>Buffalo,</i>	Jr. Law
Wilkins, George Raymond,	<i>Buffalo,</i>	1 Law
Willcox, Abel Comstock,	<i>Smyrna,</i>	1 Arts
Williams, Albert Blake,	<i>Brooklyn,</i>	1 Mech. Eng.
Williams, Alan Gillespie,	<i>Indianapolis, Ind.,</i>	1 Mech. Eng.
Williams, Arthur Shaler, A. B.,	<i>New Haven, Conn.,</i>	3 Mech. Eng.
Williams, Asa Starkweather,	<i>New York City,</i>	4 Forestry
Williams, Burr Fiske,	<i>Brockport,</i>	1 Arts
Williams, Benjamin Oliver,	<i>Denver, Colo.,</i>	2 Arts
Williams, Charles Laurance,	<i>Plattsburg Barracks,</i>	1 Mech. Eng.
Williams, Donald Davol,	<i>Brooklyn,</i>	1 Mech. Eng.
Williams, Frank Davol,	<i>Brooklyn,</i>	4 Mech. Eng.
Williams, Harry J,	<i>Ithaca,</i>	Sp. Architecture
Williams, Lee, B.E.E.,	<i>Deer Lodge, Mont.,</i>	4 Elect. Eng.
Williams, Tudor Rosser,	<i>Scranton, Pa.,</i>	3 Civil Eng.
Williams, Rodney Ralph,	<i>Fredonia,</i>	1 Law
Williamson, Harry Clay,	<i>Willow Grove, W. Va.,</i>	Sp. Law
Williamson, John Kennedy,	<i>Bethel, Conn.,</i>	1 Mech. Eng.
Wilmot, Floyd Harley,	<i>Groton,</i>	Jr. Law
Wilmot, Mabel Esther,	<i>Brooklyn,</i>	2 Arts
Wilson, Charles Scoon,	<i>Hall's Corners,</i>	3 Arts
Wilson, David,	<i>Amsterdam,</i>	2 Medicine
Wilson, Griswold,	<i>Philadelphia, Pa.,</i>	1 Mech. Eng.
Wilson, John Bailey, B.S.,	<i>Philadelphia, Pa.,</i>	1 Civil Eng.
Wilson, John Crosier,	<i>Hall's Corners,</i>	1 Mech. Eng.
Wilson, James Henry,	<i>Amsterdam,</i>	3 Mech. Eng.
Wilson, James Parker,	<i>Green Grove, Pa.,</i>	1 Law
Wilson, McLeod Campbell,	<i>New York City,</i>	3 Med. (N.Y.C.)
Wilson, William Bertrand,	<i>Westfield,</i>	1 Forestry
Wilson, William Loudon,	<i>Brooklyn,</i>	1 Arts
Wineburgh, Charles, B.S.,	<i>New York City,</i>	3 Mech. Eng.
Windecker, Frederick C,	<i>Little Falls,</i>	3 Med. (N.Y.C.)
Wingo, Charles Evans, Jr.,	<i>Richmond, Va.,</i>	3 Elect. Eng.
Winship, Lef,	<i>Penn Yan,</i>	2 Civil Eng.
Winslow, Floyd Stone,	<i>Henrietta,</i>	1 Medicine
Wise, Harold Jacob,	<i>Wheeling, W. Va.,</i>	1 Mech. Eng.
Wismar, William Frederick, A. B.,	<i>Salt Lake City, Utah,</i>	2 Medicine
Wisner, John Horner, Jr.,	<i>Summit, N. J.,</i>	4 Mech. Eng.
Wixom, Elbert Cook,	<i>Perry City,</i>	4 Arts

Woglum, Russell Sage,	<i>Oneida,</i>	2 Forestry
Wolfe, Edith May,	<i>Rome,</i>	4 Arts
Wolfersperger, John Jacob,	<i>Sterling, Ill.,</i>	1 Arts
Wolff, Harold Alfred,	<i>New York City,</i>	4 Med. (N.Y.C.)
Wood, Charles Parkinson,	<i>Warrenton, Va.,</i>	3 Elect. Eng
Wood, Edson LeVerne,	<i>Savannah,</i>	1 Arts
Wood, Frank Elihu,	<i>Ithaca,</i>	Sr. Law
Wood, Graham Bryant,	<i>Camden, N. J.,</i>	1 Civil Eng.
Wood, George Milton, Jr.,	<i>Woodville,</i>	4 Arts
Wood, John, Jr.,	<i>Pottsville, Pa.,</i>	1 Mech. Eng.
Wood, Josh, B.S.,	<i>Hubbard, Tex.,</i>	4 Agr.
Wood, Mabel Janette,	<i>Ithaca,</i>	2 Arts
Wood, Rollin,	<i>Muncie, Ind.,</i>	2 Civil Eng.
Woodland, LeRoy,	<i>Chicago, Ill.,</i>	1 Elect. Eng.
Woods, David Shelley,	<i>Albion,</i>	1 Mech. Eng.
Woods, Grace Maude,	<i>Lockport,</i>	4 Arts
Woods, John Anderson,	<i>Kansas City, Mo.,</i>	1 Elect. Eng.
Woods, Samuel Hamilton,	<i>Port Jervis,</i>	1 Mech. Eng.
Woods, Willie,	<i>Tipton, Iowa,</i>	Sp. Arts
Woodward, Karl Wilson,	<i>Montclair, N. J.,</i>	3 Forestry
Woodward, Winsor French,	<i>Brooklyn,</i>	1 Arts
Woolf, William Buxton,	<i>Hyattsville, Md.,</i>	2 Elect. Eng.
Worden, Edmond Leon,	<i>Hoosick Falls,</i>	Sr. Law
Worden, Florence,	<i>Ithaca,</i>	3 Arts
Worts, Elizabeth Mannister,	<i>New York City,</i>	2 Medicine
Wosika, Leon Rodolph,	<i>Beatrice, Neb.,</i>	2 Elect. Eng.
Wray, Alfred Bussell,	<i>Elmira,</i>	2 Mech. Eng
Wrench, Jesse Erwin,	<i>Afton,</i>	2 Arts
Wright, Albert Hazeu,	<i>Hilton,</i>	3 Arts
Wright, Arthur Mullen,	<i>Lyndonville,</i>	4 Arts, (2 Med.)
Wright, Edward Albin,	<i>Lewiston,</i>	1 Mech. Eng.
Wright, Floyd Robbins, A.B.,	<i>Brooklyn,</i>	4 Med. (N.Y.C.)
Wright, George Creighton,	<i>Ogdensburg,</i>	4 Civil Eng.
Wright, Lynn George,	<i>Worcester,</i>	4 Arts
Wright, Moses James,	<i>Worthington, O.,</i>	Jr. Law
Wright, Richard Avery,	<i>Brooklyn,</i>	2 Mech. Eng.
Wright, Roy Rex,	<i>Saranac Lake,</i>	2 Arch.
Wyeth, Ola Mae,	<i>Charleston, Ill.,</i>	3 Arts
Wylie, Arthur Gove,	<i>Hudson,</i>	2 Elect. Eng.
Wylie, Clarence Raymond.	<i>Saginaw, Mich.,</i>	2 Mech. Eng.
Wynkoop, George Edmund,	<i>Bath,</i>	1 Law
Wysong, Thomas Shirley,	<i>Port Washington,</i>	1 Med. (N.Y.C.)

Wyvell, Manton Marble, A.B.,	<i>Alma,</i>	Jr. Law
Yale, Fred Silas,	<i>Brooklyn,</i>	4 Mech. Eng.
Yeager, William Harvey,	<i>Forty Fort, Pa.,</i>	1 Mech. Eng.
Yenger, William Cornell,	<i>Elmira,</i>	3 Elect. Eng.
York, Fritz Elerd,	<i>Varna,</i>	1 Veterinary
Yorkey, Charles John,	<i>Parish,</i>	1 Law
Yost, George Irving,	<i>Schuylerville,</i>	2 Medicine
Youens, Alfred Vincent,	<i>Galveston, Tex.,</i>	4 Elect. Eng.
Young, Andrew Dewing,	<i>Owego,</i>	2 Elect. Eng.
Young, Carrie Van Patten,	<i>Williamsport, Pa.,</i>	4 Arts
Young, James,	<i>Middletown, Pa.,</i>	1 Elect. Eng.
Young, Margaret Elizabeth,	<i>Marion,</i>	3 Arts
Zeiner, Eugene Jerome, Ph.G.,	<i>Brooklyn,</i>	4 Med. (N. Y. C.)
Zerns, Arthur Burtis,	<i>Watertown,</i>	2 Arts
Zimmer, Ludo Little,	<i>Weedsport,</i>	3 Veterinary
Zimmer, William Bernard,	<i>Rochester,</i>	4 Arts
Zimmer, Wilson Briggs,	<i>Gallupville,</i>	2 Medicine
Ziporkes, Joseph,	<i>New York City,</i>	2 Med. (N. Y. C.)
Ziporkes, William Jerome,	<i>New York City,</i>	4 Med. (N. Y. C.)
Zipp, Philip Henry,	<i>Baltimore, Md.,</i>	2 Elect. Eng.
Zittel, Walter Wadsworth,	<i>Buffalo,</i>	Jr. Law
Zucker, Morris, Ph.G.,	<i>New York City,</i>	4 Med. (N. Y. C.)
Zwetschkenbaum, Samuel,	<i>New York City,</i>	1 Med. (N. Y. C.)

STUDENTS IN THE SUMMER SESSION.

Adams, Clarence Smith,	<i>Warsaw</i>
Adrian, May Catherine,	<i>Brooklyn</i>
Alden, Charles,	<i>Hornellsville</i>
Alexander, Amanda W,	<i>Brooklyn</i>
Alexander, Durand Charles, Jr., A.B., 1901,	<i>Ithaca</i>
Allen, Carl George,	<i>Williamsport, Pa.</i>
Andrews, Don Ethelbert,	<i>Puzzler, Colo.</i>
Ansart, Louis Loomis, B.S., (<i>Pa. State Coll.</i>), 1898,	<i>Wilkes-Barre, Pa.</i>
Ard, Charles Edgar, B.S. in M.E., (<i>Ga. School of Tech.</i>), 1892,	<i>Agricultural College, Miss.</i>
Armstrong, Arthur Soper, A.B., 1902,	<i>Rome</i>
Armstrong, Walter Jonas,	<i>Rome</i>
Ashcraft, Alan Emerson,	<i>Chicago, Ill.</i>
Ashmun, Jennie Cordelia,	<i>Brooklyn</i>
Atwater, John Clarence, A.B., (<i>Syracuse Univ.</i>), 1898,	<i>Canandaigua</i>

Aulet, Augusto,	<i>Cienfuegos, Cuba</i>
Avery, Harry Bain,	<i>West Taghkanic</i>
Averell, Ethel Hunter,	<i>Brooklyn</i>
Badger, Henry Franklin, Jr.,	<i>Kalamazoo, Mich.</i>
Ballinger, Philippi Fazio,	<i>Washington, D. C.</i>
Bamberger, Edgar Sutro,	<i>Baltimore, Md.</i>
Barclay, Margaret Ethel,	<i>Brooklyn</i>
Barnes, Arthur Elijah, Ph.B., (<i>Union Coll.</i>), 1895, A.M., (<i>same</i>), 1899,	<i>Clyde</i>
Barnes, Caroline Francis,	<i>Fulton</i>
Barnum, Charlotte Elizabeth,	<i>Brooklyn</i>
Barnwell, Walter, M.A., (<i>Univ. of South</i>), 1891,	<i>Mt. Vernon</i>
Barroll, Henry Edward,	<i>Chicago, Ill.</i>
Bates, Emily Schofield,	<i>Chester, Pa.</i>
Bayer, Marie Louise,	<i>Brooklyn</i>
Bayer, Minnie,	<i>Brooklyn</i>
Bayne, George Henry, Jr.,	<i>Nutley, N. J.</i>
Beals, Edward Duncan,	<i>Orange, Cal.</i>
Beals, Roscoe Garfield,	<i>Westfield, Ind.</i>
Beardslee, Kenneth Phelps,	<i>Syracuse</i>
Beardslee, Ralph Prescott,	<i>Cleveland, Ohio</i>
Beauchamp, Virginia, A.B., (<i>Univ. of Mich.</i>), 1889, A.M., (<i>same</i>), 1894,	<i>Colo. Springs, Colo.</i>
Becker, Rudolph Conrad,	<i>New York City</i>
Beckwith, Elizabeth Reynolds, A.B., (<i>Vassar</i>), 1868,	<i>New York City</i>
Bennett, Lydia A,	<i>Leonia, N. J.</i>
Bergmann, Henry Fred,	<i>Buffalo</i>
Bessey, Mabelle Abbot,	<i>Brooklyn</i>
Bessey, May Isobel Parker, P.D.M., (<i>N. Y. Univ.</i>), 1891,	<i>Brooklyn</i>
Birch, Le Roy,	<i>Washington, D. C.</i>
Blahd, Mose Emmet,	<i>Cleveland, Ohio</i>
Blount, Harold Bruce,	<i>New York City</i>
Blount, Walter Eames,	<i>Washington, D. C.</i>
Blum, Solomon,	<i>Baltimore, Md.</i>
Bollenhagen, Marie Theodore,	<i>Brooklyn</i>
Bond, Harry Cuthbert, B.I., (<i>So. Ind. Inst.</i>), 1898,	<i>Shreveport, La.</i>
Boorstein, Joseph Aaron, A.B., (<i>City Coll. of N. Y.</i>), 1902,	<i>New York City</i>
Bosche, Frederick Darlington,	<i>Buffalo</i>
Bosworth, Edwin Mahlon,	<i>Pittsburg, Pa.</i>
Bourne, Ralph Hinckley,	<i>Cleveland, O.</i>

- Boyd, William Kenneth, A.B., (*Trinity Coll., New York City*), 1897,
 A. M. (*same*), 1898, *Durham, N. C.*
- Boyer, Russell Lanson, *Brooklyn*
- Bradfield, Wesley, A.B., (*Alma Coll.*), 1902, *Decatur, Mich.*
- Brady, George Edward Drullard, *Buffalo*
- Bragg, Virgil William, *Gordonsville, Va.*
- Brainard, Albert Sereno, *East Hartford, Conn.*
- Bralley, Walter Savier, M.E. & M. E., (*E.*), (*Va. Poly. Inst.*), 1902,
Walton Furnace, Va.
- Brandt, Paul, *Bienne, Switzerland*
- Brenner, Daisy Elizabeth, *New York City*
- Brenner, Edward Christopher, *New York City*
- Brewster, Percy Douglas, *East Orange, N. J.*
- Brock, Letta, A. B., (*Ill. Wesleyan Univ.*), 1900, *Bloomington, Ill.*
- Brown, George Washington, *Newberryport, Mass.*
- Brown, Olivine, *Salt Lake City, Utah*
- Brown, Sara Winifred, B.S., 1897, *Washington, D. C.*
- Brown, William Niver, *Cortland*
- Bruce, Harry Alexander, *Joliet, Ill.*
- Brummer, Sidney David, A.B., (*City Coll. of N. Y.*), 1899, A.M.,
 (*Columbia*), 1901, *New York City*
- Bruns, Gustave John, *Niagara Falls*
- Brubacher, Alice King, *New York City*
- Buck, Irwin, *Albany*
- Buffington, James William, *St. Louis, Mo.*
- Bull, May Josephine Rice, *Waterloo*
- Burgweger, Henry, *Buffalo*
- Burleigh, Gertrude Florence, A.B., (*Vassar*), 1901, *Springfield, Mass.*
- Burleigh, Ida Aurette, *Springfield, Mass.*
- Burnet, Mary Coleman, *Cincinnati, O.*
- Burnet, Margaretta, *Cincinnati, O.*
- Burnett, William John, *Brooklyn*
- Bynum, Ernest Taylor, Ph.D., (*Halle, Germany*), 1897,
Meadville, Pa.
- Cahill, Rose Hannah, *Brooklyn*
- Calderon, George Alvarez, *Washington, D. C.*
- Carpenter, Daniel Sheldon, A.B., (*Colgate*), 1892, Ph.B., (*Albany*
Normal Coll.), 1896, *Albany*
- Carter, Charles Edward, *Geneva, O.*
- Case, Clara Montague, *Brooklyn*
- Castle, Samuel Northup, A.B., (*Harvard*), 1901, *Honolulu, H. I.*
- Cavanaugh, Anna Beatrice, *Dayton, O.*

Chandler, Clarence Amasa,	<i>Charleroi, Pa.</i>
Charters, Samuel Barclay,	<i>Pittsburg, Pa.</i>
Chatfield, Hazen,	<i>Cornwall</i>
Chatfield, William Andrew,	<i>Cornwall</i>
Cheney, Frank Willis, Jr.,	<i>Jamestown</i>
Churchman, Rebecca Pierce,	<i>Newport, Del.</i>
Clemens, Lilian Adele,	<i>Bayonne, N. J.</i>
Clementson, Anna Burrell,	<i>Brooklyn</i>
Cleveland, Milo L,	<i>Brockport</i>
Close, Henry Brevoort,	<i>Yonkers</i>
Cochran, Fernald Charles,	<i>Ithaca</i>
Cochran, Grace May, B.S., (<i>Ill. Wesleyan Univ.</i>), 1901,	<i>Sullivan, Ill.</i>
Condon, Kate Angela,	<i>New York City</i>
Connolly, Frankanna,	<i>Washington, D. C.</i>
Copass, Francis, B.A., (<i>So. West Bapt. Univ.</i>) 1900, M.A. (<i>same</i>), 1901,	<i>Jackson, Tenn.</i>
Corbin, Horace,	<i>Oxford</i>
Corcilius, Josephine,	<i>Jamaica</i>
Costello, George Justin,	<i>Syracuse</i>
Cottrell, Royal Lu, Pd.B., (<i>Albany Nor. Coll.</i>) 1897, A.M., (<i>Alfred</i>), 1899, .	<i>Brooklyn</i>
Cowgill, Laura Francis,	<i>Paulsboro, N. J.</i>
Cox, Nelson Holt, B.S., (<i>Fla. Agr. Coll.</i>) 1896,	<i>Lake City, Fla.</i>
Crick, Stephen,	<i>New York City</i>
Criswell, Nancy Jane, A.B., (<i>Wilson College</i>), 1889	<i>Chambersburg, Pa.</i>
Crosier, George Stanley,	<i>Buffalo</i>
Crouse, Jay Lansing,	<i>Syracuse</i>
Cundey, Zeta Berenice,	<i>Philadelphia, Pa.</i>
Curry, Charles Henry,	<i>Pittsburg, Pa.</i>
Curtis, Marion Loudon,	<i>Rochester</i>
Curtis, William Elliott,	<i>Norwalk, Ct.</i>
Dalrymple, Henry Raymond, A.B., (<i>Colgate Univ.</i>), 1900,	<i>Montour Falls</i>
Dann, George Joseph, A.B., (<i>Union Coll.</i>), 1896, A.M., (<i>same</i>), 1899,	<i>Liberty</i>
Dargan, Frank Townes, M.S., (<i>Furman Univ.</i>), 1899,	<i>Greenville, S. C.</i>
Davenport, Frances Isabel,	<i>Buffalo</i>
Davis, Charles James,	<i>Auburn</i>
Davis, Mary Janet,	<i>Brooklyn</i>
Dean, Philip Redfield, A.B., (<i>Harvard</i>), 1895, .	<i>New York City</i>
DeGarmo, Robert Max,	<i>Ithaca</i>

Derr, Olin Fell,	<i>Wilkes-Barre, Pa.</i>
Devon, Madge,	<i>Lockland, O.</i>
Diggs, James Robert Lincoln, A.B., (<i>Bucknell Coll.</i>), 1898, A.M., (<i>same</i>), 1899,	<i>Washington, D. C.</i>
Dodge, John Orris,	<i>Dixon, Ill.</i>
Downs, Eunice,	<i>Brooklyn</i>
Doyle, John Thomas, LL.B., (<i>Columbian Univ.</i>), 1886, LL.M., (<i>same</i>), 1889, M.Dip., (<i>same</i>), 1900, D.C.L., (<i>same</i>), 1902,	<i>Washington, D. C.</i>
Draper, George Lester,	<i>Cleveland, O.</i>
Drey, Eugene Albert,	<i>St. Louis, Mo.</i>
Dubrenil, Alice Blanche,	<i>Normandy Heights, Md.</i>
Duckworth, Willard Demarest,	<i>New York City</i>
Dunkel, Kate,	<i>Richmond, Va.</i>
Dupré, Edith Garland, B.A., (<i>Newcomb Coll.</i>), 1900,	<i>Opelousas, La.</i>
Dupré, Isabel Lawrence,	<i>Opelousas, La.</i>
DuVal, Mollie,	<i>Baltimore, Md.</i>
Edgeworth, Jennie,	<i>Irvington, Ind.</i>
Edmond, Sarah,	<i>Cohocton</i>
Edson, Edward Gilroy,	<i>Kansas City, Mo.</i>
Edwards, Gaston Alonzo, B.S., (<i>A. & M. Coll.</i>), 1901,	<i>Raleigh, N. C.</i>
Egbert, Oscar Baldwin,	<i>Rosebank</i>
Ellis, John MacEwan,	<i>Hartford, Conn.</i>
Ellis, Wesley Rose,	<i>Johnstown, Pa.</i>
Emerson, Filip Law,	<i>Detroit, Mich.</i>
Emery, Mary Louise, A.B., (<i>Mt. Holyoke</i>), 1898,	<i>Warsaw</i>
Endemann, Gertrude,	<i>Brooklyn</i>
Estabrook, William Ludlow, B.A., (<i>Harvard</i>),	<i>Marysville, N. B.</i>
Evans, Chester Willard,	<i>San Francisco, Cal.</i>
Everett, Clara Jane,	<i>Remsen</i>
Fairchild, John Gifford,	<i>Monticello</i>
Fausey, John Rowlee,	<i>Norfolk, Conn.</i>
Ferguson, Alexander McGowen, B.S.H., (<i>A. & M. College</i>), 1894, M.S., (<i>same</i>), 1896,	<i>Austin, Tex.</i>
Ferguson, George Archer, A.B., (<i>Wabash, Coll.</i>), 1898,	<i>Indianapolis, Ind.</i>
Fetzer, Morrison, B.S., (<i>Davidson Coll.</i>), 1901,	<i>Concord, N. C.</i>
Fletcher, Sara Elizabeth,	<i>New York City</i>
Flynn, Charles Andrew,	<i>Troy</i>
Forsyth, Ralph Kay,	<i>Kingston</i>
Freeland, Martha Francis,	<i>Milford, N. J.,</i>
Frost, Alvah George, B.Pd., (<i>State Nor. Coll.</i>), 1900,	<i>Rhinebeck</i>

Gage, Henry Phelps,	<i>Ithaca</i>
Gage, Victor Raymond,	<i>Wilmette, Ill.</i>
Gambier, Louise Marc,	<i>New York City</i>
Gambier, Emilie Marc, B.A., (<i>N. Y. Nor. Coll.</i>), 1894,	<i>New York City</i>
Garabrant, Joseph Edwin,	<i>Bloomfield, N. J.</i>
Garrett, Richmond Vinton,	<i>Fremont, Neb.</i>
Gates, Reginald Ruggles,	<i>Middletown, Nova Scotia</i>
Genung, Ina Eloeen, Ph.B., 1891,	<i>Ithaca</i>
Georgi, Minna Marie,	<i>Buffalo</i>
Gephart, William Wilson,	<i>Bellefonte, Pa.</i>
Giesecke, Fred Otto Leopold,	<i>Buffalo</i>
Gilbert, Harold Addinsell,	<i>Brooklyn</i>
Gilchrist, William Bartow,	<i>Cleveland, O.</i>
Glass, Meta, A.M., (<i>Randolph-Macon Coll.</i>), 1899,	<i>Lynchburg, Va.</i>
Goldman, Carolyn Ida,	<i>New York City</i>
Goodrich, Clinton Raymond,	<i>Minonk, Ill.</i>
Goodwin, Abby May,	<i>Ithaca</i>
Goodwin, Ernest William,	<i>Shadwell, Va.</i>
Graham, Guy Herbert,	<i>Papillion, Nebr.</i>
Granbery, Eugene Thurman,	<i>New York City</i>
Grant, Lucile,	<i>Stamford</i>
Grant, Roderick David,	<i>Cleveland, O.</i>
Grauman, Emma,	<i>Louisville, Ky.</i>
Gray, Jennie Benthau, L.I., (<i>Peabody Normal</i>), 1893,	<i>Asheville, N. C.</i>
Green, Henry Edward,	<i>Hoosac</i>
Greenwood, Ernest Hervey,	<i>Williamsport, Pa.</i>
Gregg, George Woodlief,	<i>Batavia, O.</i>
Gregg, Willis Ray,	<i>Phoenix</i>
Gridley, Haines,	<i>Elmira</i>
Griffin, Daniel George,	<i>Watertown</i>
Gross, Louis,	<i>Troy</i>
Guildford, Charles Thomas, B.S., (<i>Wesleyan Univ.</i>), 1897,	<i>Ithaca</i>
Haines, Lena Ormelle,	<i>Lockport</i>
Hale, Harry Munro,	<i>Elbridge</i>
Hall, James Harvey, A.B., (<i>Dickinson, Coll.</i>), 1900,	<i>Cazenovia</i>
Halpin, Alice Francis,	<i>Deposit</i>
Halpin, Mary Belle,	<i>Odessa</i>
Hann, Arthur Edward,	<i>Summit, N. J.</i>
Hardin, Julia Helen, B.A., (<i>Oxford Coll.</i>), 1896,	<i>Charlottesville, Va.</i>
Harris, Jesse Eugene,	<i>West Upton, Mass.</i>
Harrison, Mary Ella,	<i>Baltimore, Md.</i>

Harrison, Roland Rathbun,	<i>Binghamton</i>
Hartman, Grace Lenore, A.B., (<i>Univ. of Wooster</i>), 1899,	<i>Wooster, O.</i>
Hartman, James Denniston,	<i>Hollidaysburg, Pa.</i>
Hartman, Leon Wilson, B.S., 1898, A.M., 1899,	<i>Ithaca</i>
Hawley, Lee Fred,	<i>East Randolph</i>
Hazen, Francis Mary,	<i>Middletown, Conn.</i>
Henderer, Willard Everett,	<i>Wilmington, Del.</i>
Hendrickson, Elizabeth,	<i>Queens</i>
Henning, Samuel Carl,	<i>Fargo, N. D.</i>
Henry, Bessie Wray,	<i>Philadelphia, Pa.</i>
Henry, John William,	<i>Canandaigua</i>
Hewitt, John Marshall,	<i>Marianna, Ark.</i>
High, Kate Eliza,	<i>Reading, Pa.</i>
Higley, Homer Ransom, B.S., (<i>Ohio Univ.</i>) 1892, M.S., (<i>same</i>) 1895,	<i>E. Stroudsburg, Pa.</i>
Hill, Emma Caroline, B.A., (<i>Converse Coll.</i>), 1898, M.E., (<i>same</i>), 1898,	<i>Greenwood, S. C.</i>
Hill, James DeWitt, Jr.,	<i>Scottsdale, Pa.</i>
Hinchey, Mary Anne, A.B., (<i>Normal Coll.</i>), 1892,	<i>New York City</i>
Hoage, Norma,	<i>Brooklyn</i>
Hobbs, Katharine Kemp,	<i>Denton, Md.</i>
Hodge, Seth Evans,	<i>Cincinnati, O.</i>
Hogan, William James,	<i>Oxford</i>
Holbrook, Martha,	<i>Owenton, Ky.</i>
Holdridge, Newton Clark, A.B., (<i>Colgate Univ.</i>), 1891, A.M., (<i>same</i>), 1895,	<i>Hammonton, N. J.</i>
Holliday, John Salisbury, A.B., (<i>W & J. Coll.</i>), 1897, A.M., (<i>same</i>), 1900,	<i>Wilkinsburg, Pa.</i>
Holly, Jane Forsyth,	<i>Brooklyn</i>
Holmes, Aldren Allgood, B.S., (<i>Univ. of No. Car.</i>), 1901,	<i>Atlanta, Ga.</i>
Hooker, Arline Burma,	<i>Ithaca</i>
Hopkins, Ina Camilla,	<i>Norwich</i>
Houghton, Theresa Gertrude,	<i>Washington, D. C.</i>
Howard, Frederic H P,	<i>Chicago, Ill.</i>
Hoyt, Raymond Dudley,	<i>Cambridge</i>
Hueston, Jessie Elliott, B.S., (<i>Nat. Normal Univ.</i>), 1883,	<i>Hamilton, Ohio</i>
Hughes, Charles Reginald,	<i>Frederick, Md.</i>
Hull, Anna May,	<i>Oswego</i>
Hume, Helen,	<i>Warsaw</i>
Hunt, Sanford Beebe,	<i>Chatham</i>
Hunt, Sylvester Henry,	<i>Long Branch, N. J.</i>

Inslee, Ralph Hamilton,	<i>Newton, N. J.</i>
Jackson, Nellie Wheeler,	<i>Reading, Pa.</i>
Jameson, Charles Baring, A.B., (<i>City Coll. of N. Y.</i>), 1896,	<i>New York City</i>
Johnson, Harry Disbrow, Jr.,	<i>South Bend, Ind.</i>
Johnson, John Samuel Adolphus, B.S., (<i>Va. Poly. Inst.</i>), 1898, M.E.,	<i>Cismount, Va.</i>
(<i>same</i>), 1899,	<i>Eatonton, Ga.</i>
Jones, Annie,	<i>Newark, N. J.</i>
Joslyn, Raymund Elbert,	<i>Newark, N. J.</i>
Joslyn, Royal Cuthbert,	<i>Greene</i>
Juliand, Laura Cornelia,	<i>Lebanon, Pa.</i>
Kauffman, Calvin Henry, A.B., (<i>Harvard</i>), 1896,	<i>Potsdam</i>
Keenan, Mary Allison,	<i>Ilion</i>
Keller, Lena Marguerite,	<i>Cumberland, Md.</i>
Kenneweg, Albert Henry,	
Kephart, Edwin Murray, B.S., (<i>Centre Coll. Ky.</i>), 1901,	<i>New Castle, Ky.</i>
Kerby, Harriet Adelia,	<i>Brooklyn</i>
Ketchum, Lawrence Temple,	<i>Elmira</i>
King, Anna Williams, A.B., 1901,	<i>Williamsport, Pa.</i>
Kirkland, Bert Persons,	<i>Smith's Mills</i>
Kitchen, Karl Kingsley,	<i>Cleveland, O.</i>
Kluepfel, Philip Alexander,	<i>Utica</i>
Koch, Ernest Herman, Jr., B.S., (<i>Univ. of Pa.</i>), 1897,	<i>Philadelphia, Pa.</i>
Krall, George Warren, M.S., (<i>Lancaster Nor.</i>), 1873,	<i>St. Louis, Mo.</i>
Kuhn, Alfred George,	<i>Philadelphia, Pa.</i>
Lacy, George Stuart,	<i>Ithaca</i>
Lamb, Charlie,	<i>Cairo, Mo.</i>
Lanahan, Henry, A.B., (<i>John Hopkins</i>), 1896,	<i>College Park, Md.</i>
Langdon, Armand Creamer,	<i>Brooklyn</i>
Lathrop, Mary Alinda, Ph.B., 1896,	<i>Ithaca</i>
Lawrence, Norman Spear,	<i>Riverside, Ill.</i>
Leavenworth, Will Herbert,	<i>Syracuse</i>
Lee, Marguerite Thouron, B.S., 1894,	<i>Brooklyn</i>
León, Ricardo,	<i>Oaxaca, Mexico</i>
Levy, Bernie Meyer,	<i>Albany</i>
Lewis, James Heath,	<i>Ivy Depot, Va.</i>
Lewis, Joseph Stocking, B.A., (<i>Canisius Coll.</i>), 1902,	<i>Buffalo</i>
Lewis, Maria,	<i>Pittsburg Pa.</i>
Lewis, Philip	<i>Pittsburg, Pa.</i>
Lewis, Katherine Marion,	<i>Baltimore, Md.</i>

- Lindsey, Maude, *Lockport*
 Lippe, Adolph, B.S., (*City Coll. of N. Y.*), 1896, *New York City*
 Loeber, Edith, *New Orleans, La.*
 Loew, Elias Avery, A.B., 1902, *New York City*
 Long, William Henry, Jr., A.M., (*Univ. of Texas*), 1900,
Denton, Texas
 Loomis, Leroy Howard, *Cleveland, O.*
 Low, Marie Sime, *New York City*
 Lyon, Charles Albert, A.B., (*Princeton*), 1901, *Orange, N. J.*
 Lyon, Lorenzo Grenville, A.B., (*Princeton*), 1892, A.M., (*same*), 1895,
Woodstown, N. J.
 McCarnes, Mabel Frances, M.E., (*State Normal, Slippery Rock*), 1895,
Slippery Rock, Pa.
 McCarthy, Anna Loretta, M.E., (*E. Stroudsburg Nor.*), 1898,
Mayfield, Pa.
 McCarthy, Francis Sylvester, M. of E., (*E. Stroudsburg Nor.*), 1896,
Mayfield, Pa.
 McColloms, Max Reed, *Newton, Iowa*
 McCorkle, John Thomas Riley, *Canonsburg, Pa.*
 McDowell, Fannie Black, A.M., (*Mt. Pleasant*), 1862,
Columbia, S. C.
 McElwain, Mary Belle, A.B., (*Wilson Coll.*), 1895, *Chambersburg, Pa.*
 MacHarg, John Brainerd, C.E., (*Cornell Univ.*), 1893, A.B., (*Hamil-*
ton), 1900, *Rome*
 McIntyre, Edith Anna, *Coventryville*
 MacKellar, Thomas, *Philadelphia, Pa.*
 McKnight, Thomas Joseph, *Dubuque, Iowa*
 McLeod, Daniel Fraser, *Guysboro, N. S.*
 McMeehan, David, Jr., *Brooklyn*
 McNitt, Robert Joseph, *Logansport, Ind.*
 Makepeace, Stanley, *Syracuse*
 Manfred, Maud Ethel, A.B., 1900, *Mansfield, O.*
 Markey, Edward Bond, *Eaton, O*
 Marsh, Lora Almira, Ph.B., (*Hillsdale Coll.*), 1899, *Keuka Park*
 Marsh, Myrtle Katheryn, A.B., (*Williamette Univ.*), 1896, A.B.
 (*Cornell Univ.*), 1902, *Salem, Oregon*
 Masters, Frank Wynne, *New Orleans, La.*
 Maurer, Henrietta Katherine, A.B., (*N. Y. Nor. Coll.*), 1897,
New York City
 Melvin, Emma, A.B., (*Univ. of Tenn.*), 1900, *Knoxville, Tenn.*
 Mergenthaler, Fritz Lillian, *Baltimore, Md.*
 Merrill, Joseph Francis, Ph.D., (*Johns Hopkins*), 1899,
Salt Lake City, Utah

Meyer, Edgar Joseph,	New York City
Middleditch, Lyman,	Orange, N. J.
Mider, Carrol Arthur, A.B., 1901,	Lowville
Miller, Frederic William, A.B., (<i>Univ. of Chicago</i>), 1898,	Keuka Park
Miller, Henry Joseph,	Washington, D. C.
Miller, James Gelivix, A.B., (<i>Dickinson Coll.</i>), 1897,	York, Pa.
Millette, John Thomas, B.Sc., (<i>Owens Coll., Manchester, Eng.</i>), 1887,	Brooklyn
Mills, Chester Lee,	Hume
Mills, Margaret Callahan, B.A., (<i>Wellesley</i>), 1901,	Middletown
Mills, Minnie Mary,	Owego
Moke, Sarah Hester,	Brooklyn
Monagle, Catherine Louise,	Norwich
Montgomery, Warren,	New York City
Moon, Truman Jesse,	Potsdam
Moore, Elbert Owen,	Pueblo, Colo.
Moore, Schuyler Richard,	Trumansburg
Morgan, Bertha,	Waverly
Morgan, Edith Winnie,	Allegheny, Pa.
Morton, Clarence Garfield,	Abington, Mass.
Mott, Charles Earle,	Oneida
Mott, Lucy Cleaveland, A.B., (<i>Wellesley</i>), 1896,	Oneida
Moyer, Herbert Baldwin, A.B., (<i>Bucknell</i>), 1897, A.M., (same), 1898,	Morristown, Pa.
Mulroy, William Leo,	Marcellus
Munroe, Edward,	Chicago, Ill
Murphy, William Andrew,	Joliet, Ill
Murray, Rose A,	Trenton, N. J
Myers, William Beach,	Dnbuque, Ia.
Neff, Isabel Howard,	Cincinnati, O.
Neuhaus, Henriette Albertina Johanna,	Brooklyn
Neumann, Henry, B.A., (<i>City Coll. of N. Y.</i>), 1900,	New York City
Nixon, Mary Smiley,	Washington, D. C.
North, Robert,	Batavia
Nutting, Raymond,	Brooklyn
Offutt, Mitchem Webb,	Georgetown, Ky.
O'Neill, Thomas Bernard,	New York City
Ortiz de Rozas, Alfredo,	Ithaca
Oswald, Orville Johnson, B.S., (<i>Albright Coll.</i>), 1896, Ph.B., (<i>Lafayette</i>), 1900,	Emerald, Pa.
Owen, Ira June,	Oak Park, Ill.
Page, Rose Wilmer,	Cobham, Va.

Paget, Horace Greeley, A.B., (<i>Princeton</i>), 1897,	<i>Towanda, Pa.</i>
Palmer, Charles Warner,	<i>Media, Pa.</i>
Park, Joseph Charles,	<i>Big Flats</i>
Park, Mary Beeler,	<i>Speedville, Ky.</i>
Parker, Marion Adeline,	<i>Cape Vincent</i>
Parrish, Margaret Louise,	<i>Naples</i>
Pasternak, Nathaniel, B.S., (<i>City Coll. of N. Y.</i>), 1898,	<i>New York City</i>
Paxson, Anna Richardson, B.L., (<i>Swarthmore, Coll.</i>), 1902,	<i>Langhorne, Pa.</i>
Payne, Katherine M, M.E., (<i>Univ. of Pa.</i>), 1893,	<i>Jersey City, N. J.</i>
Payzant, Catherine Mann,	<i>Burlington, N. S., Can.,</i>
Peck, Ross Sanders,	<i>Brookton</i>
Peirson, Mabel Burnham, B.S., 1900,	<i>Brockport</i>
Perrin, Emmet Mark Fred,	<i>Potsdam</i>
Perrin, Ernest Frank Parley,	<i>Potsdam</i>
Phillips, Arthur Morton,	<i>New Haven, Pa.</i>
Phillips, Milton Jonathan,	<i>Bristol</i>
Phillips, Sara Jay, A.B., (<i>Vassar</i>), 1897, A.M., (<i>Columbia</i>), 1899,	<i>Brooklyn</i>
Pierce, Eunice Martha,	<i>Cohocton</i>
Pierce, William Edward,	<i>Port Chester</i>
Pino Farrera, Francisco, Jr.,	<i>Mexico, Mex.</i>
Piper, Clarence Brett,	<i>Minneapolis, Minn.</i>
Pitcairn, Robert,	<i>Pittsburg, Pa.</i>
Pitzman, Harold Wislizenus,	<i>St. Louis, Mo.</i>
Platts, George Washington Stearns,	<i>Rindge, N. H.</i>
Power, Mabel Collins,	<i>Potsdam</i>
Prevear, Edward Chesemore,	<i>Leominster, Mass.</i>
Price, Ralph Ray, A.B., (<i>Baker Univ.</i>), 1896, A.M., (<i>Univ. of Kansas</i>), 1898,	<i>Baldwin, Kansas</i>
Prussing, Rudolph Ernst,	<i>Chicago, Ill.</i>
Puig, Louise Margarita, A.B., 1901,	<i>Brooklyn</i>
Purcell, Henry, Jr.,	<i>Watertown</i>
Quackenbush, Paul Henry,	<i>Herkimer</i>
Quick, Howard Ludlow,	<i>Brooklyn</i>
Ragland, Fannie Cabell,	<i>Richmond, Va.</i>
Ramel, George Regis,	<i>New York City</i>
Ramsdell, Thomas Spencer,	<i>Housatonic, Mass.</i>
Redmond, Hugh,	<i>Camillus</i>
Reece, William Asher,	<i>Christchurch, New Zealand</i>
Richards, Cora Alice, B.E., (<i>Kutztown Nor.</i>) 1896, M.E., (same). 1898,	<i>Maxatawny, Pa.</i>

Roberts, Charles,	<i>Pokeepsie</i>
Robinson, Adelaide King, A.B., (<i>Allegheny Coll.</i>), 1889, A.M., (<i>same</i>), 1892,	<i>Butler, Pa.</i>
Robinson, Clarissa Brown,	<i>Butler, Pa.</i>
Rodenbach, Thekla Caroline,	<i>Buffalo</i>
Rodgers, Ralph Chapman,	<i>Binghamton</i>
Root, Lydia Fidelia, A.B., 1896,	<i>Skaneateles</i>
Root, Richard Weir,	<i>Minneapolis, Minn.</i>
Rosenberg, Jerome Davis,	<i>Brooklyn</i>
Rosencranz, Richard,	<i>Evansville, Ind.</i>
Roth, Rodolfo,	<i>Buenos Aires, B. A.</i>
Russell, Elizabeth Lockwood, A.B., 1901,	<i>Watkins</i>
Savacool, William Laforge,	<i>Stapleton</i>
Sawyer, Nelson William,	<i>Morris</i>
Sayce, Archibald Herbert,	<i>New York City</i>
Scarr, John, Jr.,	<i>Paterson, N. J.</i>
Schlenker, Charles Jacob,	<i>Batavia</i>
Schluenzen, Magdelene,	<i>New York City</i>
Schoedde, Emma,	<i>West Troy</i>
Scholes, Daniel Ransom,	<i>Chicago, Ill.</i>
Schroder, Catherine,	<i>Brooklyn</i>
Schroder, Marie Lucie,	<i>Brooklyn</i>
Schwarberg, Mary Emma,	<i>Allegheny, Pa.</i>
Scott, Maxwell Williams,	<i>Ithaca</i>
Sears, Agnes, B.A., (<i>Grinnell Coll.</i>), 1898,	<i>Marshalltown, Iowa</i>
Sears, Robert Bartlett,	<i>Binghamton</i>
Seaton, Sara, A.B., (<i>Wellesley</i>), 1896,	<i>Cleveland, O.</i>
Seelman, Caroline Ruth,	<i>Brooklyn</i>
Seelman, Hannah Elizabeth, A.B., (<i>Wellesley</i>), 1898,	<i>Brooklyn,</i>
Seitz, Fred Gallagher,	<i>Philadelphia, Pa.</i>
Sekiguchi, Yaekichi,	<i>Tokio, Japan</i>
Serviss, Garrett Putnam, Jr.,	<i>Brooklyn</i>
Shaffer, James McAllister, A.M., (<i>S. W. Nor. Univ.</i>), 1892,	<i>Waynesboro, Pa.</i>
Shaw, Charles Perrin,	<i>Detroit, Mich.</i>
Shaw, Joseph Duty, B.S. (<i>Univ. of Texas</i>), 1901,	<i>Hondo, Texas</i>
Shaw, William Francis, B.S., (<i>Univ. of Texas</i>), 1902,	<i>Hondo, Texas</i>
Sheldon, Bessie Louise,	<i>Rupert, Vt.</i>
Sheldon, Laura Strong, Ph.B., (<i>Ottawa, Univ.</i>), 1899,	<i>Ottawa, Kan.</i>
Shiland, Elmer James,	<i>Coila</i>
Shipman, Mary Evelyn, B.S., (<i>Mt. Union Coll.</i>), 1899,	<i>Alliance, O.</i>
Sickles, Frederick James,	<i>Moscow</i>

- Simpson, Charles Frederick, *Potsdam*
 Simpson, Frank Morton, A.B., (*Bucknell*), 1895, M.S., (*same*), 1897,
Delhi
 Slover, Minnie Elisabeth, *Brooklyn*
 Smashey, May Eberhardt, *Englewood, N. J.*
 Smith, Bertram Garner, M.E., (*Edinboro Nor.*), 1898,
Youngsville, Pa.
 Smith, Floyd Cecil, Jr., *Alpine*
 Smith, John Homer, *Brewster*
 Smith, Kittie M, *No. Baltimore, O.*
 Smith, Lillie Scoresby, A.B., (*Syracuse*), 1891, *Auburn*
 Smith, Mary Helen, S.B., (*Oberlin*), 1887, M.A., (*same*), 1894,
Farmington, Ct.
 Smith, Seymour Lippincott, *Brooklyn*
 Snow, Jessie, *Toledo, O.*
 Southwell, William Lee, *Equinunk, Pa.*
 Spann, Jessie Evelyn, *Rushville, Ind.*
 Speiden, Eben Childs, *Marshall, Va.*
 Spicer, Clarence Winfred, *Edelstein, Ill.*
 Spooner, Marian Dessie, A.B., (*Western Univ., Oxford, O.*), 1898,
Glendale, O.
 Sprenkle, William Howard, B.S., (*Gettysburg Coll.*), 1898, M.S.,
 (*same*), 1901, *Edinboro, Pa.*
 Starr, George Gourley, A.B., (*Wooster Univ.*), 1901, *Wooster, O.*
 Stearns, David Pyott, *Chicago, Ill.*
 Stebbins, Ida Bell, *Brooklyn*
 Steel, William Foster, *Mt. Vernon*
 Steen, Mary E., *Trenton, N. J.*
 Stevens, Donald French, *St. Paul, Minn.*
 Stewart, Alexander Duncan, *New York City*
 Stocker, John Eugene, B.S., (*Lehigh*), 1895, *Bethlehem, Pa.*
 Stone, Imogen, *Clinton, La.*
 Stone, Lulu Mabel, Ph.B., 1895, *Brooklyn*
 Stone, Mary Matilda, A.B., (*Barnard*), 1896, *Brooklyn*
 Storm, Emma May, *Brooklyn*
 Strayer, Franklin Reese, A.B., (*Bucknell*), 1894, *Orange, N. J.*
 Strickler, Magdalene, A.B., (*Lebanon Valley Coll.*), 1894,
Lebanon, Pa.
 Swartz, John Wesley, A.B., (*Ohio Wesleyan*), 1896,
Tippecanoe City, O.
 Sweezy, Vesta Leland, A.B., (*N. Y. Nor. Coll.*), 1898,
New York City
 Taber, Silas, *Auburn*

Taveira, Horace Alfred,	<i>Habana, Cuba</i>
Taylor, Eliza Amelia,	<i>Bronxville</i>
Taylor, Florence Grace, A.B., (<i>DePauw Univ.</i>), 1898,	<i>Wabash, Ind.,</i>
Taylor, Jane Isabella,	<i>Bronxville</i>
Taylor, Marion Lee, A.B., (<i>Wellesley</i>), 1895, Pd.B., (<i>Albany Nor. Coll.</i>), 1901,	<i>Albany</i>
Taylor, Nelson Vinton,	<i>Salisbury, N. C.</i>
Thallimer, William Montefiore,	<i>Richmond, Va.</i>
Thayer, Stella Rocelia,	<i>Brooklyn</i>
Thom, Charles, Ph.D., (<i>Univ. of Mo.</i>), 1899,	<i>Minonk, Ill.</i>
Thomas, Frederick Walker,	<i>Bayonne, N. J.</i>
Thorne, Mary Margaret, B.E., (<i>Mansfield Nor.</i>), 1884,	<i>Waverly</i>
Thomson, Ralph Moore,	<i>Brooklyn</i>
Todd, Leona Estelle,	<i>Rochester</i>
Torian, Thomas Richard, A.B., (<i>Hampden-Sidney Coll.</i>), 1897, B.S., (<i>same</i>), 1897,	<i>Midway, Va.</i>
Torres, Antonio, B.A., (<i>Ataneo, Manila, P. I.</i>), 1901,	<i>Washington, D. C.</i>
Tourison, Charles Edward,	<i>Philadelphia, Pa.</i>
Tourison, George Bartle,	<i>Philadelphia, Pa.</i>
Towle, Elizabeth Williams, A.B., (<i>Bryn Mawr</i>), 1898, A.M., (<i>same</i>), 1899,	<i>Rockford, Ill.</i>
Towles, Carolyn Benson, A.B., (<i>Woman's Coll.</i>), 1893,	<i>Baltimore, Md.</i>
Town, Mary Rebecca, A.B., (<i>De Pauw</i>), 1899,	<i>Greencastle, Ind.</i>
Train, Carrie Louise,	<i>N. Collins</i>
Treat, Sidney Wellington,	<i>Chicago, Ill.</i>
Trowbridge, Cornelia Burton, B.S., 1899	<i>New Haven, Conn.</i>
Trowbridge, Janette,	<i>Westhaven, Conn.</i>
Tschabold, Frank Frederick,	<i>Niagara Falls</i>
Tucker, Lillian Blanche,	<i>Gowanda</i>
Tudela, Gabriel Varela,	<i>Lima, Peru</i>
Tweed, Alice de Bonneville,	<i>Williamstown, N. J.</i>
Twistman, Helene,	<i>New York City</i>
Tydeman, Stephen James,	<i>Bloomfield, N. J.</i>
Unger, Susie Cecilia,	<i>Rensslear</i>
Urner, Jonas Paul,	<i>Frederick, Md.</i>
Van Arsdale, May Belle,	<i>New York City</i>
Vandercook, Mary Elizabeth,	<i>Brooklyn</i>
Van Zandt, Fanny Brice,	<i>Trenton, N. J.</i>
Vawter, William Arthur, 2nd,	<i>Chicago, Ill.</i>
Vedder, Frank Hanley, Ph.B., 1899,	<i>Utica</i>
Viles, Lawrence Motley,	<i>Lake Forest, Ill.</i>
Vinton, James Chapin,	<i>Canal Dover, O.</i>

Wade, Lucy Virginia,	Moravia
Walker, George Wilfred,	Waverly
Waller, Elmer Briton, A.B., (<i>Union Coll.</i>), 1882, A.M., (<i>same</i>), 1892,	Maryville, Tenn.
Wandling, Vera,	Ithaca
Wardwell, Arthur Soper,	Rome
Warner, Arthur Hobart,	St. Paul, Minn.
Warner, Helen Ely,	Brooklyn
Warner, Maurice Lee,	Beacon Falls, Conn.
Warner, Chester Ingersoll,	Troy
Warren, Walter Garfield,	Chicago, Ill.
Weiner, Anna Louise,	Kingston
Wellman, Holley Garfield,	Cleveland, O.
Wells, Nellie Eugenia, B.A., (<i>Wellesley</i>), 1898,	Palmyra
Wells, Percy Addison,	Chicago, Ill.
Weston, Clara Paine, B.A., (<i>Dalhousie Coll.</i>), 1892,	Hammonton, N. J.
Wheat, Grace Alice,	Brooklyn
Wheat, Nina Ethel,	Brooklyn
Wheeler, Alice,	Trumansburg
Wheeler, Jane Maria,	Worcester, Mass.
Whetzel, Herbert Hice, A.B., (<i>Wabash Coll.</i>), 1902,	Avilla, Ind.
Whiteside, Donald Grant, B.S., (<i>City Coll. of N. Y.</i>), 1897,	New York City
Wien, Francis, A. B., (<i>City Coll. of N. Y.</i>), 1900,	New York City
Wilkinson, Thomas Gregg, A.B., (<i>S. C. Univ.</i>), 1889,	Bishopville, S. C.
Willard, Gladys, A.B., 1898,	Brooklyn
Williams, Benjamin Oliver,	Denver, Colo.
Williams, Tudor Rosser,	Scranton, Pa.
Williams, William Hill, B.A., (<i>Williams</i>), 1884, M.A., (<i>same</i>), 1887,	Platteville, Wis.
Wilson, Edward Clarkson, B.S., (<i>Swarthmore</i>), 1891,	Yardley, Pa.
Wilson, Griswold,	Philadelphia, Pa.
Wilson, Mary Rodifer, M.D., (<i>Med. Coll. of Ind.</i>), 1894, B.S., (<i>Cor-</i> <i>nell</i>), 1897,	London, England
Wilson, Olive B.,	Norwich
Wilson, William Loudon,	Brooklyn
Winkler, Charles Herman,	The Grove, Texas
Wixom, Elbert Cook	Perry City
Wood, Nancy Clafin,	Mendon, Mass.
Wooster, Benjamin Cooper,	Ridgewood, N. J.
Wylie, Arthur Gove,	Hudson
Yarnall, Stanley Rhoades, A.B., (<i>Haverford Coll.</i>), 1892, A.M., (<i>same</i>), 1893,	Germantown, Pa.

Yenger, William Cornell,	<i>Elmira</i>
Yocum, Wilbur Elmore, A.B., (<i>Fla. Agrl. Coll.</i>), 1898,	<i>Davenport, Ia.</i>
Youens, Alfred Vincent,	<i>Galveston, Tex.</i>
Young, Adelaide Taber, B.S., 1899,	<i>Wellsboro, Pa.</i>
Young, Charlotte Spencer, A.B., 1901,	<i>Cincinnati, O.</i>
Yung, James,	<i>Middletown, Pa.</i>
Zubiaur, Joseph Benjamin, Dr. in Law, (<i>Univ. of Buenos Aires</i>), 1884,	<i>Buenos Aires, Argen. Rep.</i>

SUMMER SCHOOL STUDENTS IN MEDICINE AT NEW YORK CITY.

Eisenberg, Isidore Ch.,	<i>New York City</i>
Kidd, William Stoner,	<i>New York City</i>
McCully, Rob Roy, M.D., (<i>Coll. Physicians and Surgeons</i>), 1901,	<i>New York City</i>
Manning, Isaac Hall, M.D., (<i>Long Island Coll.</i>), 1897,	<i>Chapel Hill, N. C.</i>
Noble, Harriet Isabel, M.D., (<i>Woman's Med. Coll., Pa.</i>), 1901,	<i>Brooklyn</i>
Poor, Daniel W, M.D., (<i>Coll. of Physicians and Surgeons</i>), 1894.	<i>Orange, N. J.</i>
Rae, Alexander,	<i>Brooklyn</i>
Smart, William Mitchell,	<i>Washington, D. C.</i>
Thomasson, Dennie Martin,	<i>New York City</i>

STUDENTS IN SUMMER TERM IN ENTOMOLOGY

Adamopoulos, Adam Constantine,	<i>Smyrna, Turkey</i>
Austin, Blanche Tudor, B.S., (<i>Wells College</i>), 1895,	<i>Cincinnati, O.</i>
Beal, Alvin Casey, B.S.A., (<i>Illinois</i>), 1897,	<i>Mt. Vernon, Ill.</i>
Bean, Arthur Malcolm, A.B., (<i>Iowa Coll.</i>), 1897,	<i>Pekin, Ia.</i>
Burch, Earl Grant, B.S., (<i>Syracuse</i>), 1894, M.S., (<i>same</i>), 1896,	<i>Fargo, N. D.</i>
Cipperly, Ella Maude,	<i>Wynantskill</i>
Close, Henry Brevoort,	<i>Yonkers</i>
Crosby, Cyrus Richard,	<i>Penn Yan</i>
Dempsey, Louise Magdalen,	<i>Albany</i>
Fagundes, Euclides,	<i>Sao Paulo, Brazil</i>
Fagundes, Waldomiro,	<i>Sao Paulo, Brazil</i>
Fletcher, Phileua Belle,	<i>Bainbridge</i>
Hankinson, Thomas Leroy, B.S., (<i>Mich. Agr. Coll.</i>), 1898, B.S., (<i>Cornell</i>), 1900,	<i>Hillsdale, Mich.</i>

Howard, Charles Walter,	Ogdensburg
Johannsen, Oskar Augustus, B.S., (<i>Univ. of Ill.</i>), 1894, A.M., (<i>Cornell</i>), 1902,	Ithaca
Mac Gillivray, Alexander Dyer, Ph.B., 1900,	Ithaca
Martin, George Washington, B.S., (<i>Wabash</i>), 1887, Ph.D., (<i>Univ. of Ind.</i>), 1892,	Nashville, Tenn.
Martin, James Otis, B.S.A., 1899,	Brooklyn
Morgan, Alfred Cookmau,	Concord, Del.
Okerstrom, Ouiga Edith,	Denver, Colo.
Powell, Phillip Bayard,	Clinton
Presho, Charles Henry,	Ulysses, Pa.
Riley, William Albert, B.S., (<i>DePauw Univ.</i>), 1897,	Greencastle, Ind.
Ruggles, Arthur Gordon, B.S.A., 1901,	Annapolis, N. S., Can.
Seely, Louise Helen,	Jersey City, N. J.
Scheffer, Theophilus H, B.S., (<i>Kansas State</i>), 1895,	Minneapolis, Kans.
Smithe, Percy Allis Winans,	Ithaca
Stone, Delia May,	Ithaca
Stowell, Elisabeth,	Black Creek
Townsend, Anna B,	Washington, D. C.
Van Sant, Belle,	Newtown, Pa.
Walton, Lee Barker, Ph.B., 1897, Ph.D., 1902,	Lakewood
Waterman, Charlotte Cornelia,	Hudson
Whittaker, Elizabeth Leigh,	Caroline Centre
Wilcox, Clara Louise, A.B., 1902,	Covert

STUDENTS IN SUMMER TERM IN PALEONTOLOGY.

Aller, Harry Day, B.Sc., (<i>Rutgers</i>), 1902,	Gladstone, N. J.
Breger, Copsy Leviuthal,	Brooklyn
Darling, Frederic Warren, A.B., 1902,	Buffalo
Foxworthy, Fred William, B.S., (<i>De Pauw</i>), 1899, A.M., (<i>Cornell</i>), 1902,	Greencastle, Ind.
Kelley, Charles Earl,	Dayton, O.
Mitchell, Evelyn Groesbuck, A.B., 1902,	E. Orange, N. J.
Pacheco, Joviano Augusto d'Amaval,	S. Carlos, Brazil
Randolph, John,	Niagara Falls
Ritter, Alice Emily Borgfeldt,	Brooklyn
Talbot, Miguon, A.B., (<i>Ohio State</i>), 1892,	Columbus, Ohio
Robinson, Emma Crasto, B.S., (<i>St. Lawrence Univ.</i>), 1896,	Mt. Vernon
Smith, Charles Edward, Ph.B., (<i>Albion</i>), 1895, A.M., (<i>Cornell Univ.</i>), 1902,	Ithaca

STUDENTS IN SHORT WINTER COURSE IN AGRICULTURE.

WINTER 1903.

Angell, Remsin Platt,	<i>Poughkeepsie</i>
Ansley, John Arthur,	<i>Penn Yan</i>
Armstrong, Charles William,	<i>Madrid Springs</i>
Bailey, Frederick Eugene,	<i>Deposit</i>
Bassett, Wilmer Wilson,	<i>Farmer</i>
Bell, Burt,	<i>Delhi</i>
Bodurtha, Francis Perry,	<i>Walton</i>
Bodurtha, Randolph John,	<i>Agawam, Mass.</i>
Bradley, Leroy Burr,	<i>Farmer</i>
Brittain, John,	<i>Fredericton, N. B.</i>
Brown, George Eddy,	<i>Hoosick</i>
Brown, William Irving,	<i>Brookfield</i>
Burdick, Clarence Mansel,	<i>No. Brookfield</i>
Burnett, Miles,	<i>Jefferson</i>
Butler, Frank Charles,	<i>Delancey</i>
Carpenter, Carlyle Mcnitt,	<i>Russia</i>
Clark, Edward,	<i>Fort Plain</i>
Clegg, Joseph D,	<i>Jefferson</i>
Cole, Claudius Coan,	<i>Romulous</i>
Colson, Edgar Fulton, B.Agr., (A. & M. College), 1901,	<i>Ansonville, N. C.</i>
Cook, Florence Margaret,	<i>Harriettstown</i>
Cooper, Samuel Fred,	<i>Smithboro</i>
Croop, Marvin,	<i>Clarence Centre</i>
Cross, Ledyard Cuyler,	<i>Rochester</i>
Crowell, Dewitt Garrison,	<i>Wallkill</i>
Cummings, Homer John,	<i>Brushton</i>
Curran, Samuel,	<i>Knoxville, Pa.</i>
Daly, Frederick Max,	<i>Otselic Centre</i>
Daehy, Dennis, Jr.,	<i>Peterboro</i>
Deay, Thomas Michael,	<i>Braman Corners</i>
Deyo, Joseph,	<i>Gardiner</i>
Deyoe, M C,	<i>Virgil</i>
Dillenbeck, Bert Jared,	<i>Randall</i>
Dillin, John Raymond,	<i>Dillin</i>
Dixson, Leon Edward,	<i>Mt. Vision</i>
Evans, Dannie Morgan,	<i>Freedom</i>
Ferris, Fred Wallace,	<i>Pavilion</i>
Fuller, George Damon, B.A., (McGill Univ.), 1901,	<i>Granby, Que., Canada</i>

Gage, Hubert Davis,	<i>So. New Berlin</i>
Garber, Benjamin Franklin,	<i>Mt. Joy, Pa.</i>
Gardner, George Arthur,	<i>Mt. Vision</i>
Gibson, James D,	<i>Whitney Crossing</i>
Gibson, John Wesley,	<i>Ottawa, Canada</i>
Gordon, Dean D,	<i>Rushford</i>
Green, Virgil Edward,	<i>Andover</i>
Greene, Harry Fay,	<i>Groton</i>
Halliday, Edgar James,	<i>Massena</i>
Hamilton, David Wiley, A.B., (Univ. of New Brunswick), 1901,	<i>Florenceville, N. B.</i>
Hamilton, Ira Earl,	<i>Jamestown</i>
Harkness, William Grant,	<i>Davenport</i>
Harter, Glenn,	<i>Otisco</i>
Harter, Irving Stanton,	<i>Otisco</i>
Hepworth, John Milo,	<i>Marlboro</i>
Hibbard, William Wallace,	<i>Mt. Morris</i>
Hitchcock, Nathaniel Joseph,	<i>Lebanon</i>
Hockridge, Walter,	<i>Plainfield, N. J.</i>
Hollis, DeForest J,	<i>Lacona</i>
Holmes, Rufus Bartlett, Jr.,	<i>Auburn</i>
Hotson, John William, B.A., (McMaster Univ.), 1901, A.M., (same), 1902,	<i>Innerkip, Ont., Canada</i>
Howes, Ernest Albert,	<i>Bowesville, Ont., Canada</i>
Huff, Charles,	<i>Moravia</i>
Hulse, Laurence Edward,	<i>Baiting Hollow</i>
Jackson, Harland H,	<i>Boonville</i>
Jackson, William,	<i>Gilboa</i>
Jones, John Walter,	<i>Pownal, P. E. I., Canada</i>
Jones, Morelle Crego,	<i>Stittville</i>
Jones, Shuler Manville,	<i>Smithville</i>
Kelly, Edward,	<i>Roxbury</i>
Knapp, John Henry,	<i>Sugar Loaf</i>
Langworthy, Charles,	<i>Alfred Station</i>
Lapham, Roy,	<i>La Grange</i>
Lewis, Charles Stanley,	<i>Demster</i>
Loveland, Edward,	<i>West Fulton</i>
Lyon, Waldo Marsden,	<i>Demster</i>
McGill, George Burkee,	<i>Middleton, N. S., Canada</i>
McLaury, Frank Hamilton,	<i>Stamford</i>
Makely, Irving Brown,	<i>Medusa</i>
Mason, Copenius Fuller,	<i>Rushford</i>
Merithew, Webster Franklin,	<i>Hermon</i>

Middleditch, Edna L,	<i>South Orange, N. J.</i>
Miller, Glenn Howard,	<i>Enfield</i>
Myers, William Harry,	<i>So. Livonia</i>
Neill, Thomas Taylor,	<i>Westfield</i>
Nichols, Colin E,	<i>Lewiston</i>
Olin, Ernest Durffee,	<i>Perry</i>
Oliver, Thomas Arthur,	<i>Waddington</i>
Oneal, Leon Frank,	<i>Hermon</i>
Palmer, Rensselaer Wilbur,	<i>Lake Side</i>
Perry, Orlo Hibbard,	<i>Stacy Basin</i>
Petrie, John Fay,	<i>Peterboro</i>
Phillips, Walter,	<i>Bristol</i>
Place, John Robert,	<i>Alpine</i>
Reist, John Clarence,	<i>Mt. Joy, Pa.</i>
Ross, Theodore, B.A., (Dalhousie College), 1899,	<i>Ross' Corner, P. E. I., Canada</i>
Safford, Myron Clark, Jr.,	<i>Salem</i>
Salisbury, Frank Arthur,	<i>Phelps</i>
Sanford, Charles Ward,	<i>Baiting Hollow</i>
Sawyer, Francis Burr,	<i>Smithville Flats</i>
Schlotzhauer, Albert Frederick,	<i>Canajoharie</i>
Scrambling, Arthur Madison,	<i>Treadwell</i>
Shaw, Percy James, B.A., (Dalhousie College), 1897,	<i>Berwick, N. S., Canada</i>
Shaylor, Charles Dayton,	<i>Jefferson</i>
Sheffield, Adelbert,	<i>Ithaca</i>
Shults, Loyd,	<i>Kanona</i>
Simons, Frank R,	<i>Barneveld</i>
Smith, Fred Witter,	<i>Berkshire</i>
Steele, Robert Edson,	<i>Pierrepoint Manor</i>
Stewart, Guy,	<i>Stamford</i>
Ticknor, Arthur Napoleon,	<i>Penelope</i>
Tomlinson, Edward John,	<i>McLean</i>
Urtel, Raymond William,	<i>Lockport</i>
Waterman, Loring Delos,	<i>Waterville</i>
Weaver, Leslie,	<i>Rock City</i>
Weegar, Orville Frank,	<i>Louisville</i>
Westervelt, Leon Albert,	<i>Taughannock Falls</i>
White, LeRoy Cooley,	<i>Delanson</i>
Wiese, David Nicholas,	<i>Wawarsing</i>
Wilmer, Bruce Mathew,	<i>Faulkner, Md.</i>
Worley, Ernest George,	<i>Billings Bridge, Ont., Canada</i>
York, Alexis,	<i>No. Brookfield</i>
Young, Burton James,	<i>Hobart</i>

STUDENTS IN SHORT COURSE IN VETERINARY SCIENCE FOR PRACTITIONERS.

WINTER 1902.

Connelly, Thomas A, D.V.S.,	<i>Troy</i>
Hunt, Fred Wilcox, D.V.S.,	<i>Reading Center</i>
Lambrechts, Thorfin, V.S., M.D.V.,	<i>Montevedio, Minn.</i>
MacNeil, James Brown, V.S.,	<i>Ballston Springs</i>
Springer, Urias S, V.S.	<i>Grand Rapids, Mich.</i>
Taylor, James Henry,	<i>Henrietta</i>
Turner, Joseph Wren, V.S.,	<i>Lyons</i>
Wescott, Albert Whitford	<i>Alfred Station</i>
York, F. E.	<i>N. Brookfield</i>
Zimmer, L. L.	<i>Weedsport</i>

WINTER, 1903.

Dr. T. S. Childs	<i>Saratoga</i>
Dr. S. L. Gelston	<i>Fort Assiniboine, Mont.</i>
Dr. C. R. White	<i>New Britain, Conn.</i>

GENERAL SUMMARY

Government, Teachers, and Other Officers.

TRUSTEES :—

Ex officio	9	
Elected—By the Board	20	
By the Alumni	10	
Total		39

TEACHERS :—

Professors	90	
Assistant Professors	43	
Lecturers	4	
Instructors	140	
Assistants, etc.	116	
Total	393	
Non-Resident Lecturers	41	

Whole number of Teachers 434

LIBRARY STAFF..... 16

OTHER OFFICERS..... 26

PREACHERS..... 27

Students.

GRADUATE DEPARTMENT :—

Fellows	26	
Scholars	17	
Graduates, candidates for Advanced Degrees.....	181	
Graduates not candidates for Degrees.....	20	

Total, deducting for 43 names counted twice..... 201

GRADUATE STUDENTS IN UNDERGRADUATE COURSES 224

Total Graduate Students 425

ACADEMIC DEPARTMENT :—

Senior Class	183	
Junior Class	167	
Sophomore Class.....	184	
Freshman Class.....	233	
Special Students	28	

Total..... 795

COLLEGE OF LAW :—

Senior Class	45
Junior Class	78
First Year Class	96
Special Students	5
Total	224

THE MEDICAL COLLEGE :—

Senior Class, New York City	60
Junior Class, New York City	66
Sophomore Class, New York City	68
Sophomore Class, Ithaca	47
Freshman Class, Ithaca	60
Freshman Class, New York City	87
Specials, New York City	5
Total	393

COLLEGE OF AGRICULTURE :—

Senior Class	7
Junior Class	9
Sophomore Class	15
Freshman Class	29
Special Students	53
Total	113

STATE COLLEGE OF VETERINARY MEDICINE :—

Third Year Class	12
Second Year Class	19
First Year Class	31
Special Students	1
Total	63

STATE COLLEGE OF FORESTRY :—

Senior Class	2
Junior Class	9
Sophomore Class	13
Freshman Class	36
Special Students	10
Total	70

COLLEGE OF ARCHITECTURE :—

Senior Class	8
Junior Class	10
Sophomore Class	5
Freshman Class	22
Special Students	4
First Year Painting	2
Special Painting	2
Total	53

COLLEGE OF CIVIL ENGINEERING :—

Senior Class	33
Junior Class	44
Sophomore Class	73
Freshman Class	103
Total	253

SIBLEY COLLEGE OF MECHANICAL ENGINEERING :—

Senior Class	139
Junior Class	137
Sophomore Class	249
Freshman Class	360
Special Students	5
Total	890

Total number of regular students, deducting for names counted twice

3017

ADDITIONAL ENROLLMENT.

Summer Session, 1902,	548
Summer School in Medicine, New York City, 1902,	9
Summer Term in Entomology, 1902,	35
Summer Term in Paleontology, 1902,	12
Short Winter Course in Agriculture, 1903,	121
Short Winter Course in Veterinary Science, 1903,	3

Geographical Summary.

New York	1751	Utah	10	Porto Rico	6
Pennsylvania	265	Maine	9	Philippines	2
Ohio	129	North Carolina	9	Canada	17
New Jersey	121	New Hampshire	8	Mexico	6
Illinois	109	West Virginia	8	Cuba	5
Massachusetts	54	Alabama	8	Argentine Rep.	4
Maryland	50	Nebraska	7	Brazil	3
Connecticut	49	Vermont	7	England	3
Dist. of Columbia	47	Wisconsin	7	Japan	3
Indiana	46	Rhode Island	6	Peru	2
Iowa	29	Georgia	5	Turkey	2
Michigan	22	Montana	5	Austria	1
Texas	21	Oregon	5	British Columbia ..	1
Virginia	20	South Carolina	5	China	1
Colorado	19	Tennessee	5	Holland	1
Kentucky	17	Arkansas	4	New Zealand	1
Missouri	16	Kansas	4	Russia	1
California	15	Mississippi	4	Sweden	1
Washington	15	Florida	3	Central America ..	1
Louisiana	14	New Mexico	1	India	1
Minnesota	13	North Dakota	1	Total	3017
Delaware	11	Wyoming	1		

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