THE REGISTER

Cornell University

1905-1906

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CALENDAR.

FIRST TERM—1905-1906.

Sept. 19 Tuesday	Entrance examinations begin.
Sept. 26 Tuesday	ACADEMIC YEAR BEGINS. Matriculation of New students. University Scholarship examinations begin.
Sept. 27 Wednesday	MATRICULATION of new students.
Sept. 27 Wednesday	REGISTRATION of students in the Medical College in New York City.
Sept. 28 Thursday	REGISTRATION of matriculated students.
Sept. 29 Friday	INSTRUCTION begins in all departments of the University at Ithaca. The President's annual address to the students at 12:00 M.
Nov. 30 Thursday	THANKSGIVING DAY.
Dec. 1 Friday	The latest date for announcing subjects of Theses for Advanced Degrees.
Dec. 22 Friday	The Christmas recess begins.
Jan. 2 Tuesday	Registration in the College of Agriculture for Winter Courses.
Jan. 3 Wednesday	Work resumed.
Jan. 10 Wednesday	The Ninety-four Memorial Prize Competition.
Jan. 11 Thursday	FOUNDER'S DAY.
Jan. 31 Wednesday	First term closes.

SECOND TERM—1905-1906.

Feb. 3	Saturday	REGISTRATION for second term.
Feb. 22	Thursday	WASHINGTON'S BIRTHDAY.
Mar. 20	Tuesday	Winter Courses in Agriculture end.
Mar. 24	Saturday	Easter recess begins.
Apr. 2	Monday	The latest date for presenting Woodford Orations.
Apr. 3	Tuesday	Work resumed.
Apr. 16	Monday	The latest date for receiving applications for Fellowships and Graduate Scholarships.
May 1	Tuesday	The latest date for presenting Theses for Advanced Degrees.
May 4	Friday	The Woodford Prize Competition.
May 25	Friday	The Eighty-six Memorial Prize Competition.
May 30	Wednesday	DECORATION DAY.
June 13	Wednesday	COMMENCEMENT of Medical College in New York City.
June 14	Thursday	Instruction ends.
June 17	Sunday	Baccalaureate sermon.
June 19	Tuesday	Class Day.
June 20	Wednesday	Alumni Day and Annual Meeting of the Trustees.
June 21	Thursday	THIRTY-EIGHTH ANNUAL COMMENCEMENT.

SUMMER SESSION—1906.

July 5	Thursday	Summer Session begins.
Aug. 15	Wednesday	Summer Session ends.

FIRST TERM—1906–1907.

Sept. 18 Tuesday	Entrance examinations begin.
Sept. 25 Tuesday	ACADEMIC YEAR BEGINS. Matriculation of New students. University Scholarship examinations begin.
Sept. 26 Wednesday	REGISTRATION of students in the Medical College in New York City.
Sept. 26 Wednesday	MATRICULATION of new students.
Sept. 27 Thursday	REGISTRATION of matriculated students.
Sept. 28 Friday	INSTRUCTION begins in all departments of the University at Ithaca. President's annual address to the students at 12:00 M.
Nov. — Thursday	THANKSGIVING DAY.
Dec. 1 Saturday	The latest date for announcing subjects of Theses for Advanced Degrees.
Dec. 21 Friday	The Christmas recess begins.
Jan. 2 Wednesday	Registration in the College of Agriculture for Winter Courses.
Jan. 3 Thursday	Work resumed.
Jan. 10 Thursday	The Ninety-four Memorial Prize Competition.
Jan. 11 Friday	FOUNDER'S DAY.
Jan. 30 Wednesday	First term closes.
Feb. 2 Saturday	REGISTRATION for second term.

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 script 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 the realization of his purpose. This union was effected by the act of April 27, 1865, establishing Cornell University, and appropriating to it the proceeds of the sale of the 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 mechanics 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 script" 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 acrue 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 Script 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 its 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 aud eleven thousand and forty-six and eighty-six-hundredths acres for four hundred and seventy thousand three hundred and sixty-four dollars aud 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 amonnt 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-six and seventy-nine-hundredths acres—the Board of Trustees, through the agency of their Land Committee (of which Henry W. Sage was long chairman), have already realized a net return of about four million eight hundred 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.

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The GOVERNOR of New York State,	*Ex-officio*	Albany
The LIEUTENANT-GOVERNOR of N. Y. State,	*Ex-officio*	Albany
The SPEAKER of the Assembly,	*Ex-officio*	Albany
The STATE COMMISSIONER of Education,	*Ex-officio*	Albany
The COMMISSIONER of Agriculture,	*Ex-officio*	Albany
The PRESIDENT of the State Agricultural Soc.,	*Ex-officio*	Albany
The LIBRARIAN of the Cornell Library,	*Ex-officio*	Ithaca
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CHARLES D. BOSTWICK, *Assistant Sec.-Treas.*

*Term of office (5 years) expires in 1906, the next group of six in 1007, etc., etc., (1) *B.*, elected by Board. (2) *A.*, elected by Alumni. (3) *G.*, elected by the New York State Grange for 1906-1907.

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CHARLES EZRA CORNELL,
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HENRY B. LORD,
CHARLES E. TREMAN,
ROBERT H. TREMAN,
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EMMONS L. WILLIAMS,.....*Secretary.*
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DEPARTMENTS AND FACULTIES.

1. THE UNIVERSITY.—Cornell University comprehends the following departments, to-wit: the Graduate Department, the College of Arts and Sciences, the College of Law, the Medical College, the New York State Veterinary College, the College of Agriculture, the College of Architecture, the College of Civil Engineering, the Sibley College of Mechanical Engineering and Mechanic Arts. The New York State Veterinary College is administered by Cornell University, and its 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, 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. 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 prescribe 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*

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*Deceased.

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WILLIAM GILMAN THOMPSON, Ph.,B., M.D., Professor of Medicine, 34 *East 31st Street, New York City*

GEORGE WOOLSEY, A.B., M.D., Professor of Anatomy and Clinical Surgery, 117 *East 36th Street, New York City*

HENRY PATTERSON LOOMIS, A.B., M.D., Professor of Materia Medica, Therapeutics, and Clinical Medicine, 58 *East 34th Street, New York City*

JAMES CLIFTON EDGAR, Ph.B., A.M., M.D., Professor of Obstetrics and Clinical Midwifery, 50 *East 34th Street, New York City*

FREDERICK GWYER, M.D., Professor of Operative and Clinical Surgery, 130 *East 38th Street, New York City*

IRVING SAMUEL HAYNES, Ph.B., M.D., Professor of Practical Anatomy, 1125 *Madison Avenue, New York City*

ALEXANDER LAMBERT, A.B., Ph.B., M.D., Professor of Clinical Medicine, 36 *East 31st Street, New York City*

CHARLES EDWARD NAMMACK, Ph.B., M.D., Professor of Clinical Medicine, 42 *East 29th Street, New York City*

FRANCIS WISNER MURRAY, A.B., M.D., Professor of Clinical Surgery, 32 *West 39th Street, New York City*

GEORGE THOMSON ELLIOT, A.B., M.D., Professor of Dermatology, 36 *East 35th Street, New York City*

CHARLES STEDMAN BULL, A.M., M.D., Professor of Ophthalmology, 47 *West 36th Street, New York City*

JOSEPH EDCIL WINTERS, M.D., Professor of Diseases of Children, 25 *West 37th Street, New York City*

NEWTON MELMAN SHAFFER, M.D., Professor of Orthopædic Surgery, 28 *East 38th Street, New York City*

CHARLES LOOMIS DANA, A.M., M.D., Professor of Neurology, 53 *West 53rd Street, New York City*

CHARLES HUNTOON KNIGHT, A.M., M.D., Professor of Laryngology and Rhinology, 147 *West 57th Street, New York City*

FREDERICK KAMMERER, M.D., Professor of Clinical Surgery, 51 *East 66th Street, New York City*

AUSTIN FLINT, M.D., LL.D., Professor of Physiology, 60 *East 34th Street, New York City*

FREDERIC SHEPARD DENNIS, A.B., M.D., F.R.C.S., Eng., Professor of Clinical Surgery, 542 *Madison Avenue, New York City*

SAMUEL ALEXANDER, A.M., M.D., Professor of Diseases of the Genito Urinary System, 168 *West 55th Street, New York City*

JAMES EWING, A.M., M.D., Professor of Pathology, 260 *West 57th Street, New York City*

HENRY SYLVESTER JACOBY, C.E., Professor of Bridge Engineering, 7 *Reservoir Avenue*

LOUIS MUNROE DENNIS, Ph.B., B.S., Professor of Inorganic Chemistry, 722 *University Avenue*

HERBERT WADE HIBBARD, A.B., A.M., M.E., Professor of Mechanical Engineering of Railways, *Cornell Heights*

ALEXANDER BRYAN JOHNSON, Ph.B., M.D., Professor of Clinical Surgery, 12 *East 58th Street, New York City*

PERCIVAL R BOLTON, Ph.B., M.D., Professor of Clinical Surgery, 43 *West 48th Street, New York City*

WARREN COLEMAN, A.B., M.D., Professor of Clinical Medicine, 58 *West 55th Street, New York City*

LEWIS ATTERBURY CONNER, Ph.B., M.D., Professor of Clinical Medicine, 53 *East 49th Street, New York City*

JOSEPH ELLIS TREVOR, A.M., Ph.D., Professor of Physical Chemistry, *The Circle*

JOHN CRAIG, M.S. in Agr., Professor of Horticulture, 3 *East Avenue*

JOHN ROBERT SITLINGTON STERRETT, Ph.D., LL.D., Professor of Greek, *Thurston Avenue*

CHARLES HENRY HULL, Ph.D., Professor of American History, [*Absent on Leave*]

FRANK ALBERT FETTER, A.B., Ph.D., Professor of Political Economy and Finance, *Cornell Heights*

FRANK IRVINE, B.S., LL.B., Professor of Practice and Procedure in the College of Law, 802 *East Seneca Street*

HENRY HIRAM WING, M.S. in Agr., Professor of Animal Husbandry, 3 *Reservoir Avenue*

PIERRE AUGUSTINE FISH, D.Sc., D.V.M., Professor of Veterinary Physiology and Pharmacology, 915 *East State Street*

WILLIAM RIDGELY ORNDORFF, A.B., Ph.D., Professor of Organic and Physiological Chemistry, 108 *Cascadilla Place*

WILDER DWIGHT BANCROFT, A.B., Ph.D., Professor of Physical Chemistry, 7 *East Avenue*

ERNEST MERRITT, M.E., Professor of Physics, 39 *East Avenue*

THOMAS FORSYTH HUNT, M.S., D.Agr., Professor of Agronomy and Manager of the University Farms, 37 *East Avenue*

GRANT SHERMAN HOPKINS, D.Sc., D.V.M., Professor of Veterinary Anatomy and Anatomical Methods, 125 *Dryden Road*

RAYMOND ALLEN PEARSON, M.S. in Agr., Professor of Dairy Industry, *Cascadilla Place*

HENRY SHALER WILLIAMS, Ph.D., Professor of Geology and Director of the Geological Museum, 9 *East Avenue*

CHARLES VAN PATTEN YOUNG, A.B., Acting Professor of Physical Culture and Director of the Gymnasium, 112 *Lake Street*

ALBERT WILLIAM SMITH, B.M.E., M.M.E., Director of Sibley College and Professor of Steam Engineering, 15 *East Avenue*

ABRAM TUCKER KERR, B.S., M.D., Professor of Anatomy, Secretary of Medical College at Ithaca, 61 *Wait Avenue*

FREDERICK WHITING, A.M., M.D., Professor of Otology, 47 *West 50th Street, New York City*

DEXTER SIMPSON KIMBALL, A.B., Professor of Machine Design, *The Circle*

JAMES McMAHON, A.M., Professor of Mathematics, 7 *Central Avenue*

JOHN HENRY TANNER, B.S., Ph.D., Professor of Mathematics, [*Absent on Leave*]

WILLIAM LINCOLN DREW, B.S., LL.B., Professor of Law, 13 *East Avenue*

MAURICE JACQUES PRÉVOT, Professor of Design in the College of Architecture, 5 *East Avenue*

FRANK ARTHUR BARTON, M.E., Capt. U. S. A., Professor of Military Science and Tactics, *Cornell Heights*

FREDERICK BEDELL, Ph.D., Professor of Applied Electricity, *Cornell Heights*

BERTRAM HENRY BUXTON, A.B., M.D., Professor of Experimental Pathology, 1 *West 101st Street New York City*

ADOLPH MEYER, M.D., LL.D., Professor of Mental Diseases, 35 *Mt. Morris Park, West, New York City*

CLARENCE AUGUSTINE MARTIN, Professor of Architecture in charge of the College of Architecture, *Edgecliff*

MAX FARRAND, Acting Professor of American History, 120 *Oak Avenue*

RALPH CHARLES HENRY CATTERALL, Ph.D., Professor of Modern European History, 5 *Central Avenue*

HENRY HUTCHINSON NORRIS, M.E., Professor of Electrical Engineering, 610 *East Buffalo Street*

CARL CLAPP THOMAS, M.E., Professor of Marine Engineering, 5 *Reservoir Avenue*

GEORGE ROBERT McDERMOTT, Professor of Naval Architecture, 216 *University Avenue*

GEORGE SYLVANUS MOLER, A.B., B.M.E., Assistant Professor of Physics, 408 *University Avenue*

HERBERT CHARLES ELMER, A.B., Ph.D., Assistant Professor of Latin, 113 *Oak Aveuue*

WILLIAM ALEXANDER HAMMOND, A.M., Ph.D., Assistant Professor of Ancient and Mediæval Philosophy and Æsthetics, and Secretary of the University Faculty, 29 *East Avenue*

WILLARD WINFIELD ROWLEE, B.L., D.Sc., Assistant Professor of Botany with special reference to Comparative Histology and Systematic Botany, 11 *East Avenue*

GILBERT DENNISON HARRIS, Ph.B., Assistant Professor of Palæontology and Stratigraphic Geology, 307 *Stewart Avenue*

ADAM CAPEN GILL, Ph.D., Assistant Professor of Mineralogy and Petography, *70 Thurston Avenue*

FREDERICK CLARKE PRESCOTT, A.B., Assistant Professor of the English Language and Literatue, 2 *Grove Place*

OLAF MARTINUS BRAUNER, Assistant Professor of Drawing and Painting in the College of Architecture, *88 Wait Avenue*

EVERETT WARD OLMSTED, Ph.B., Ph.D., Assistant Professor of the Romance Languages, *730 University Avenue*

HENRY NEELY OGDEN, C.E., Assistant Professor of Sanitary Engineering, 614 *University Avenue*

IVIN SICKELS, M.S., M.D., Assistant Professor of Chemistry and Physics, 17 *Lexington Avenne, New York City*

MARK VERNON SLINGERLAND, B.S. in Agr., Assistant Professor of Economic Entomology, 109 *Summit Avenue*

WILLIAM STRUNK, Jr., Ph.D., Assistant Professor of the English Language and Literature, 107 *Lake Street*

BENJAMIN FREEMAN KINGSBURY, Ph.D., M.D., Assistant Professor of Physiology, 404 *Oak Avenue*

CHARLES LOVE DURHAM, M.A., Ph.D., Assistant Professor of Latin, [*Absent on Leave*]

EMILE MONNIN CHAMOT, B.S., Ph.D., Assistant Professor of Sanitary Chemistry and Toxicology, 408 *Stewart Avenue*

JOHN AUGUSTUS HARTWELL, Ph.B., M.D., Assistant Professor of Physiology, 50 *East 53rd Street, New York City*

HERMAN DIEDERICHS, M.E., Assistant Professor of Experimental Engineering, 610 *Stewart Avenue*

ERNEST ALBEE, Ph.D., Assistant Professor of Philosophy, 142 *Cascadilla Place*

ISAAC MADISON BENTLEY, B.S., Ph.D., Assistant Professor of Psychology, 139 *Cascadilla Place*

ELMER JAMES McCAUSTLAND, C.E., M.C.E., Assistant Professor of Mining Engineering and Surveying, 302 *Mitchell Street*

HEINRICH RIES, Ph.D., Assistant Professor of Economic Geology, 49 *Thurston Avenue*

HENRY AUGUSTUS SILL, A.M., Ph.D., Assistant Professor of Ancient History, 136 *Cascadilla Place*

CLARK SUTHERLAND NORTHUP, A.B., Ph.D., Assistant Professor of the English Language and Literature, 107 *College Place*

JOHN THOMAS PARSON, Assistant Professor of Drawing in the College of Civil Engineering, *Cornell Heights*

ALBERT CHARLES PHELPS, B.S., M.Arch., Assistant Professor of Architecture, *Edgecliff, Cornell Heights*

JOHN IRWIN HUTCHINSON, A.B., Ph.D., Assistant Professor of Mathematics, *Cornell Heights*

VIRGIL SNYDER, A.M., Ph.D., Assistant Professor of Mathematics, 204 *University Avenue*

WILLIAM NICHOLS BARNARD, M.E., Assistant Professor of Steam Engineering, *Cornell Heights*

GEORGE WALTER CAVANAUGH, B.S., Assistant Professor of Chemistry in its relations with Agriculture, *Willard Avenue*

JOHN SANFORD SHEARER, B.S., Ph.D., Assistant Professor of Physics, 608 *East Seneca Street*

ERNEST BLAKER, B.S., Ph.D., Assistant Professor of Physics, 402 *Oak Avenue*

JOHN LEMUEL STONE, B.Agr., Assistant Professor of Agronomy, 91 *Wait Avenue*

JAMES EDWARD RICE, B.S. in Agr., Assistant Professor of Poultry Husbandry, 92 *Wait Avenue*

GUY MONTROSE WHIPPLE, Ph.D., Assistant Professor of the Science and Art of Education, 307 *Stewart Avenue*

OTHON GOEPP GUERLAC, Licencié ès lettres, Assistant Professor of Romance Languages, 120 *Oak Avenue*

OSCAR AUGUSTUS JOHANNSEN, B.S., A.M,, Ph.D., Assistant Professor of Structural Engineering, 919 *East State Street*

HOLLIS ELLSWORTH DANN, Assistant Professor of Music, 110 *West Seneca Street*

JAMES ALBERT WINANS, A.M., Assistant Professor of Oratory and Debate, *Edgecliff Way*

ALBERT BERNHARDT FAUST, Ph.D., Assistant Professor of German, 406 *Stewart Avenue*

WALTER RAUTENSTRAUCH, M.S., Assistant Professor of Machine Design, 105 *Valentine Place*

VLADIMIR KARAPETOFF, C.E., Assistant Professor of Experimental Engineering with special reference to Electrical Engineering, 710 *East State Street*

FRED ASA BARNES, C.E., M.C.E., Assistant Professor of Civil Engineering, 324 *Huestis Street*

CLARENCE FLOYD HIRSHFELD, B.S., M.M.E., Assistant Professor of Steam Engineering, 64 *Sheldon Court*

JOSEPH WALTER BINGHAM, A.B., J.D., Acting Assistant Professor of Law, 711 *East Seneca Street*

WILLIAM BENJAMIN FITE, Ph.B., Ph.D., Assistant Professor of Mathematics, 127 *Eddy Street*

ELMER OTTERBEIN FIPPIN, B.S. in Agr., Assistant Professor of Soil Investigation (detailed from Bureau of Soils, U.S. Dept. of Agr.,) 406 *Oak Avenue*

GEORGE NIEMAN LAUMAN, B.S.A., Assistant Professor of Rural Economy, and Secretary to the Faculty of Agriculture, 116 *Oak Avenue*

HOWARD DRYSDALE HESS, M.E., Assistant Professor of Machine Design, 109 *Summit Avenue*

CHARLES FRANCIS HARDING, S.B., Acting Assistant Professor of Electrical Engineering, 114 *Stewart Avenue*

ERNEST WILLIAM SCHODER, B.S., Ph.D., Assistant Professor of Experimental Hydraulics, 410 *East Yates Street*

Standing Committees—University Faculty.

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JAMES MOFFAT, D.D., Lecturer on Moral Philosophy and Christian Ethics,

EUGENE BAKER, B.S., M.D., Lecturer on Obstetrics and Practice of Medicine, 108 *West Seneca Street*

MARTIN BUEL TINKER, B.S., M.D., Lecturer on Surgery, *Stimson Hall*

CHARLES LANGDON GIBSON, A.B., M.D., Lecturer on and Instructor in Surgery, 8 *East 58th Street, New York City*

EDWARD LOUGHBORO KEYES, Jr., A.B., M.D., Lecturer on Surgery, 109 *East 34th Street, New York City*

BENJAMIN TROWBRIDGE TILTON, A.B., M.D., Lecturer on and Instructor in Surgery, 23 *West 37th Street, New York City*

CHARLES NICOLL BANCKER CAMAC, M.D., Lecturer on and Instructor in Medicine, 108 *East 65th Street, New York City*

OTTO HENRY SCHULTZE, A.B., M.D., Lecturer on and Instructor in Gross Pathology, 44 *West 44th Street, New York City*

MAX GUSTAV SCHLAPP, M.D., Lecturer on Pathology, and Instructor in the Histology and Pathology of the Nervous System, 43 *East 78th Street, New York City*

JOHN McGAW WOODBURY, A.B., M.D., Lecturer on Municipal Sanitation, 120 *5th Avenue, New York City*

WARREN HENRY MANNING, Lecturer on Outdoor Art, *Boston*

BRYANT FLEMING, B.S.A., Lecturer on Outdoor Art, *Buffalo*

WILLIAM CHARLES DEVEREAUX, Lecturer on Meteorology, *Weather Bureau Office*

Instructors.

HIRAM SAMUEL GUTSELL, B.P., A.M., Instructor in Freehand Drawing and Modeling in College of Architecture, 301 *Huestis St.*

JOHN SIMPSON REID, Instructor in Machine Design, 116 *Stewart Avenue*

FRANK EMIL LODEMAN, A.M., Ph.D., Instructor in Romance Languages, 5 *Osborne Block*

ELIAS JUDAH DURAND, A.B., D.Sc., Instructor in Botany and Assistant Curator of the Cryptogamic Herbarium, 120 *Oak Avenue*

BLIN SILL CUSHMAN, B.S., Instructor in Chemistry, 109 *Elston Place*

ELLEN BRAINARD CANFIELD, Instructor in Sage College in charge of Gymnasium for women, 126 *Cascadilla Place*

JEREMIAH SWEETSER FERGUSON, M.S., M.D., Instructor in Histology, 330 *West 28th Street, New York City*

WILLIAM FLETCHER STONE, Ph.B., M.D., Instructor in and Demonstrator of Anatomy, 340 *West 57th Street, New York City*

GEORGE DEMPSTER HAMLEN, A.M., M.D., Instructor in Gynæcology and Obstetrics, 43 *West 72nd Street, New York City*

LOUIS WARNER RIGGS, A.M., Ph.D., Iustructor in Chemistry and Physics, 414 *East 26th Street, New York City*

JOHN ROGERS, Jr., A.B., Ph.B., M.D., Instructor in Clinical Surgery, and Secretary to the Medical College in New York City, 102 *East 30th Street, New York City*

EDMUND PENDLETON SHELBY, A.B., M.D., Instructor in Pharmacology and Therapeutics, 116 *West 74th Street, New York City*

CHARLES CLIFFORD BARROWS, A.M., M.D., Clinical Instructor in Gynæcology, 8 *West 36th Street, New York City*

GEORGE GRAY WARD, Jr., M.D., Instructor in Gynæcology, 77 *West 50th Street, New York City*

FRANK SIDNEY FIELDER, Ph.B., M.D., Demonstrator of Anatomy, 2 *West 82nd Street, New York City*

JOSEPH FRAENKEL, M.D., Clinical Instructor in diseases of the Nervous System, 46 *East 75th Street, New York City*

JAMES EDWARD NEWCOMB, A.B., M.D., Clincial Instructor in Laryngology and Rhinology, 118 *West 69th Street, New York City*

PATRICK HENRY FITZHUGH, M.D., Clinical Instructor in Orthopædics, 128 *East 34th Street, New York City*

ARCHIBALD EZEKIEL ISAACS, M.D., Clinical Instructor in Surgery, 240 *East Broadway, New York City*

HENRY HOWARD WHITEHOUSE, Ph.B., M.D., Clinical Instructor in Dermatology, 24 *West 36th Street, New York City*

KARL McKAY WIEGAND, B.S., Ph.D., Instructor in Botany and Assistant Curator of the Phanerogamic Herbarium, 212 *Hazen Street*

JAMES CHEW JOHNSTON, M.D., Instructor in Pathology and Dermatology, 64 *East 56th Street, New York City*

JOHN ASPELL, A.B., M.D., Clinical Instructor in Gynæcology, 139 *West 77th Street, New York City*

WILLIAM SHANNON, A.B., M.D., Clinical Instructor in Children's Diseases, 130 *West 81st Street, New York City*

EDGAR HARPER WOOD, M.M.E., Instructor in Machine Design, 406 *West Mill Street*

EUGENE PLUMB ANDREWS, A.B., Instructor in Archæology and Curator of the Museum of Casts, 132 *East Mill Street*

CHARLES GEORGE LEWIS WOLF, B.A., C.M., M.D., Instructor in Physiological Chemistry, *City Club, New York City*

ALEXANDER DYER MacGILLIVRAY, Ph.B., Ph.D., Instructor in Entomology, *White Hall*

GEORGE MAXWELL HOWE, Ph.B., Ph.D., Instructor in German, [*Absent on Leave*]

BENTON SULLIVAN MONROE, Ph.D., Instructor in English, 531 *East State Street*

ROBERT GRIGG REESE, Ph.G., M.D., Clinical Instructor in Ophthalmology, 58 *East 25th Street, New York City*

GUSTAVE SEELIGMAN, M.D., Clinical Instructor in Obstetrics, 53 *East 72nd Street, New York City*

WALTER ADAMS DUNCKEL, M.D., Clinical Instructor in Diseases of Children, 131 *West 46th Street, New York City*

THOMAS WOOD HASTINGS, A.B., M.D., Instructor in Clinical Pathology, 43 *East 58th Street, New York City*

MONTGOMERY HUNT SICARD, B.S., M.D., Instructor in Physical Diagnosis, 46 *West 48th Street, New York City*

FREDERICK DIAMOND COLSON, B.L., LL.B., Instructor in Procedure in the College of Law, 711 *East Seneca Street*

ARTHUR LYNN ANDREWS, M.L., Ph.D., Instructor in English, 112 *Sears Street*

SAMUEL HOWARD BURNETT, M.S., D.V.M., Instructor in Comparative Pathology and Bacteriology, 410 *University Avenue*

ROBERT LEE SHIPMAN, M.E., Instructor in Experimental Engineering, 240 *Hazen Street*

WILLIAM ALBERT RILEY, B.S., Ph.D., Instructor in Entomology, *White Hall*

ALDEN KITTREDGE DAWSON, Instructor in Freehand Drawing in College of Architecture, 49 *Cascadilla Place*

GEORGE EUGENE DODGE, B.S., M.D., Instructor in Operative Surgery, 43 *West 48th Street, New York City*

FREDERICK LOVE KEAYS, M.D, Instructor in Physical Diagnosis, 200 *West 56th Street, New York City*

GEORGE STANLEY MACOMBER, M.E., Instructor in Electrical Engineering, [*Absent on Leave*]

FRANCIS C EDGERTON, M.D., Clinical Instructor in Diseases of the Genito-Urinary System, 60 *West 58th Street, New York City*

ISADORE LEON HILL, A.B., M.D., Clinical Instructor in Obstetrics, 712 *Madison Avenue, New York City*

ALBURTUS ADAIR MOORE, M.D., Instructor in Obstetrics, 48 *East 31st Street, New York City*

RICHMOND HAROLD SHREVE, B.Arch., Instructor in Architecture, 3 *Barnes Hall*

LEWIS LEAMING FORMAN, Ph.D., Instructor in Greek, 504 *University Avenue*

PAUL RUSSELL POPE, A.B., Ph.D., Instructor in German, 518 *Stewart Avenue*

CHESTER MURRAY, Ph.B., Instructor in Romance Language, 134 *Cascadilla Place*

LANE COOPER, Ph.D., Instructor in English, 120 *Oak Avenue*

HUGH DANIEL REED, B.S., Ph.D., Instructor in Neurology and Vertebrate Zoology, 804 *East Seneca Street*

JOHN CALVIN WATSON, Ph.D., Instructor in Latin, 805 *East State Street*

MILES ALBION POND, Ph.B., Instructor in Civil Engineering, 218 *University Avenue*

WILLIAM A DOWNES, M.D., Instructor in Operative Surgery and Demonstrator of Anatomy, 74 *West 44th Street, New York City*

GERSHOM FRANKLIN WHITE, B.S., Instructor in Pathology and Bacteriology, 804 *East Seneca Street*

ORA MINER LELAND, B.S., (C.E.), Instructor in Civil Engineering, 127 *Cascadilla Place*

HENRY LIVINGSTON FREEMAN, B.S., E.E., Instructor in Machine Design and Drawing, 3 *Barnes Hall*

ARTHUR WESLEY BROWNE, M.S., Ph.D., Instructor in Chemistry, 957 *East State Street*

EDWARD PISKO, M.D., Clinical Instructor in Dermatology, 151 *East 78th Street, New York City*

ISRAEL STRAUSS, A.B., M.D., Instructor in Embryology,
1245 *Madison Avenue, New York City*

PAUL FREDERICK GAEHR, A.B., A.M., Instructor in Physics,
8 *Barnes Hall*

ROBERT COYNER FENNER, B.S., M.E., Instructor in Physics,
531 *East State Street*

HENRY WILKES WRIGHT, Ph.B , Instructor in Philosophy,
109 *Cascadilla Place*

JOHN A WHEELER, M.E., Instructor in Experimental Engineering,
125 *Quarry Street*

VIRGIL OLDBERG, M.E., Instructor in Experimental Engineering,
319 *Eddy Street*

GEORGE ROBERT OLSHAUSEN, Ph.D., Instructor in Physics,
Cornell Heights

ROBERT FRANKLIN HOXIE, Ph.B., Instructor in Economics,
210 *Mitchell Street*

WILLIAM J ELSER, M.D., Instructor in Bacteriology,
210 *East 15th Street, New York City*

ROBERT ANTHONY HATCHER, Ph.G., M.D., Instructor in Pharmacology,
414 *East 26th Street, New York City*

THEODORE B BARRINGER, A.B., M.D., Instructor in Medicine and Clinical Medicine,
34 *West 84th Street, New York City*

GEORGE WHITMORE RICE, M.E., Instructor in Experimental Engineering,
416 *Eddy Street*

WILLIAM SOHIER BRYANT, A.M., M.D., Clinical Instructor in Otology,
48 *West 40th Street, New York City*

JOHN PRESCOTT GRANT, M.D., C.M., Clinical Instructor in Surgery,
278 *Mill Street, Poughkeepsie*

JAMES MORLEY HITZROT, A.B., M.D., Instructor in Surgery,
18 *West 16th Street, New York City*

JAMES RAMSAY HUNT, M.D., Instructor in Neurology,
102 *East 57th Street, New York City*

GEORGE BIRMINGHAM McAULIFFE, A.B., M.D., Clinical Instructor in Otology,
57 *East 65th Street, New York City*

WALTER LINDSAY NILES, M.D., Instructor in Medicine and in Physical Diagnosis,
939 *Madison Street, New York City*

PERCY HERBERT WILLIAMS, A.B., M.D., Clinical Instructor in Surgery,
22 *East 48th Street, New York City*

WILLIAM CHAUNCEY GEER, A B., Ph.D., Instructor in Chemistry,
122 *Hazen Street*

EDWARD GODFREY COX, A.M., Instructor in English,
113 *Quarry Street*

HARRY HAMILTON COCHRANE, B.S., Instructor in Experimental Engineering,
8 *Barnes Hall*

WILLARD JAMES FISHER, A.B., Instructor in Physics,
205 *Huestis Street*

CHARLES NELSON HASKINS, Ph.D., Instructor in Mathematics,
120 *Oak Avenue*

GELIN ANGUS GRAY, B.A., M.B., Instructor in Anatomy and Medical Examiner at the Gymnasium, 12 *Osborne Block*

JOHN WASHINGTON GILMORE, B.S.A.,, M.S. in Agr., Instructor in Agronomy and Superintendent of the Farms, 612 *E. Seneca St.*

OTIS AMSDEN GAGE, Ph.B., Instructor in Physics, 317 *Eddy Street*

GEORGE ABRAM EVERETT, A.B., LL.B., Instructor in Oratory and Debate, 402 *Eddy Street*

SAMUEL LATIMER BOOTHROYD, B.S., M.S., Instructor in Civil Engineering, *Forest Home*

ROLAND BORMAN RENNER, M.E., Instructor in Machine Design, 118 *Ferris Place*

WILL MILLER SAWDON, B.S. in M.E., Instructor in Experimental Engineering, 961 *East State Street*

CALVIN DODGE ALBERT, M.E., Instructor in Experimental Engineering, 319 *Eddy Street*

JOSEPH QUINCY ADAMS, Jr., A.B., A.M., Instructor in English, 119 *Stewart Avenue*

WALTER STEBBINS FORD, M.E., Instructor in Experimental Engineering, 512 *East Seneca Street*

ALBERT WINFIELD STONE, M.E., Instructor in Machine Design, 120 *Falls Street*

JOHN HERBERT CLAIBORNE, M.D., Clinical Instructor in Ophthalmology, 34 *West 36th Street, New York City*

JOHN T WILLIAMS, Instructor in Machine Design, 92 *Cascadilla Place*

RALPH CUTHBERT SNOWDON, A.B., Instructor in Chemistry, 115 *Cook Street*

OMAR RAY GULLION, A.B., A.M., Instructor in Medical Pharmacology and Physiology, 804 *East Seneca Street*

NATHANIEL READ NORTON, Ph.B., M.D., Instructor in Medicine, 113 *East 70th Street, New York City*

ROSS MILTON RIEGEL, C.E., Instructor in Civil Engineering, 804 *East Seneca Street*

CLARENCE OWEN HARRIS, A.B., Instructor in Latin, 70 *Thurston Avenue*

RUSSELL BELLAMY, M.D., Clinical Instructor in Gynaecology, 20 *West 30th Street, New York City*

ROBERT JOSEPH McNITT, A.B., M.E., Instructor in Electrical Engineering, 205 *Huestis Street*

AUGUST HOCH, M.D., Clinical Instructor in Psychiatry, *Bloomingdale, White Plains*

GEORGE HUGHES KIRBY, M.D., Clinical Instructor in Psychiatry, *Pathological Institute, Ward's Island, New York City*

JOHN JOSEPH NUTT, B.L., M.D., Clinical Instructor in Orthopaedics, and Demonstrator of Anatomy, *New York City*

HALDOR HERMANNSON, Instructor in Scandinavian Languages, 211 *Eddy Street*

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HERBERT GROVE DORSEY, B.S., M.S., Instructor in Physics, 129 *Dryden Road*

CLARENCE ALBERT PIERCE, B.S., M.S., Instructor in Physics, 115 *Linn Street*

EUGENE CASSON CRITTENDEN, A.B., Instructor in Physics, 715 *East State Street*

LEE FRED HAWLEY, A.B., A.M., Instructor in Chemistry, 109 *Elston Place*

THOMAS G DELBRIDGE, A.B., Instructor in Chemistry, 152 *Cascadilla Place*

WALTER EDWARD McCOURT, A.B., A.M., Instructor in Practical Geology and Mineralogy, 115 *Cook Street*

BERT S BUTLER, A.B., Instructor in Geology and Physical Geography, 715 *East State Street*

GEORGE BURR UPTON, M.E., M.M.E., Instructor in Experimental Eugineering, 11 *Central Avenue*

ALONZO MORRIS BUCK, Jr., M.E., Instructor in Electrical Engineering, 610 *East Buffalo Street*

SAMUEL RENWICK DODDS, E.E., Instructor in Experimental Engineering, *Cornell Heights*

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MELVIN DRESBACH, M.S., M.D., Instructor in Physiology, 811 *East State Street*

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CHARLES E MANNING, M.E., Instructor in Civil Engineering, 125 *Highland Place.*

CHARLES LEOPOLD WALKER, C.E., Instructor in Civil Engineering, 804 *East Seneca Street*

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PERCY HODGE, A.B., B.S., Instructor in Physics, *402 Eddy Street*

ALTON LEROY STEWART, M.E. in E.E., Instructor in Electrical Engineering, *927 East State Street*

LESTER ANDREW MAGRAW, B.S., Instructor in Experimental Electrical Engineering, 116 *Stewart Avenue*

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FRED CLARKSON FOWLER, Mechanician in the Department of Physics, 504 *North Aurora Street*

ROBERT SHORE, Assistant to the Professor of Botany and Head Gardener, 5 *Garden Avenue*

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352 *Willis Avenue*, *New York City*

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JOHN WILLIAMSCOE, Ph.B., M.D., Assistaut in Clinical Pathology,
633 *Park Avenue*, *New York City*

FRANK McELROY HUNTOON, M.D., Assistant in Bacteriology aud Pathology, *Cornell Medical College*, *New York City*

NATHAN S ROBERTS, M.D., Clinical Assistant in Otology,
122 *East 55th Street*, *New York City*

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512 *Stewart Avenue*

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205 *Huestis Street*

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419 *East Buffalo Street*

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414 *Stewart Avenue*

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HURON HERBERT SMITH, B.S., Assistant in Botany,
5 *East Avenue*

ALBERT HAZEN WRIGHT, A.B., A.M., Assistant in Neurology and Vertebrate Zoology, 325 *Dryden Road*

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JOSEPH HENRY HATHAWAY, A.M., MD., Assistant Demonstrator of Anatomy and Assistant in Histology and Embryology, and Medical Examiner at the Gymnasium, 319 *Huestis Street*

WILLIAM FREDERICK JELKE, Ph.B., M.D., Assistant Demonstrator of Anatomy, 91 *Wait Avenue*

OTTO LOUIS GOEHLE, A.B., M.D., Assistant Demonstrator of Anatomy, 140 *Giles Street*

EARL VINCENT SWEET, A.B., Assistant in Histology and Embryology, 228 *Hazen Street*

FREDERICK HENRY McNAIR, D.V.M., Assistant in Physiology and Pharmacology, 119 *Dryden Road*

WINFRED BERDELL MACK, D.V.M., Assistant in Pathology and Bacteriology, *Forest Home*

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CHARLES FREDERICK SHAW, Assistant in Soils, 32 *Thurston Avenue*

BURTON JUSTICE RAY, A.B., Assistant in Chemistry, 116 *Stewart Avenue*

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JOSEPH HERSCHEL COFFIN, B.S., AM., Assistant in Psychology, 222 *University Avenue*

HENRY LEIGHTON, Assistant in Geology, 209 *Huestis Street*

FRANK WILBUT CHAMBERLAIN, B.S. in Agr., Assistant in Veterinary Anatomy, 420 *East Seneca Street*

ANDREW ENGLISH, D.V.M., Assistant in Veterinary Anatomy, 117 *East Avenue*

JOHN GORDON WILLS, B.S.A., Assistant in Veterinary Anatomy, 57 *Cascadilla Place*

MORTIMER FRANCIS MEHLING, A.B., Assistant in Chemistry, 105 *Catherine Street*

ARTHUR DUTTON CAMP, A.B., Assistant in Chemistry, 6 *South Avenue*

OSCAR DIEDRICH VON ENGELN, Assistant in Dynamic Geology, 310 *Huestis Street*

RALPH CHAPMAN RODGERS, M.E., Assistant in Physics, 123 *Highland Place*

ARTHUR KNAPP, Assistant in the Department of Military Science, 210 *Stewart Avenue*

ROMEO BENVENUTO KUEHNS, Assistant in the Department of Military Science, 101 *Quarry Street*

GEORGE RUHLEN, Jr., Assistant in the Department of Military Science, 58 *Sheldon Court*

JOHN BERDAN SHEPARD, Assistant in the Department of Military Science, 1 *Barnes Hall*

FREDERICK SANFORD SLY, Assistant in the Department of Military Science, 325 *North Tioga Street*

WILLIAM EDWIN SWIGERT, Assistant in the Department of Military Science. 105 *Quarry Street*

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STUART BALL WILKES, Assistant in the Department of Military Science, 211 *Williams Street*

RALPH WRIGHT CURTIS, B.S.A., M.S. in Agr., Asssistant in Nature Study Department, 804 *East Seneca Street*

MERRITT HARPER, B.Sc., M.S., Assistant in Animal Husbandry, *Dairy Building*

MAXIMILIAN CLAUD ALBRECH, Assistant in Chemistry, 402 *Huestis Street*

CLAUDE WILBUR EDGERTON, B.Sc., Assistant in Botany, *Forest Home*

HOWARD LOUIS ALLER, Assistant in Machine Design, 717 *East Buffalo Street*

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JOHN LUCIEN JONES, Assistant in Physical Culture,
507 *North Tioga Street*

JOHN LYON RICH, Assistant in Paleontology, 508 *University Avenue*

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207 *Stewart Avenue*

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931 *East State Street*

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MAX MORSE, B.Sc , M.A., Assistant in Chemistry,
The Howell, 510 *West 124th Street*, *New York City*

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GEORGE EDWARD FRAZER, Assistant in Physical Culture,
116 West Clinton Street

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114 East Mill Street

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603 East Seneca Street

CHARLES WILLIAM MANN, Assistant in Soils,
32 Thurston Avenue

JAKE FRIED, Assistant in Military Science and Tactics,
109 Summit Avenue

HENRY GORDON BURNHAM, Assistant in Chemistry,
31 Sheldon Court

FRANCIS EDWARD GALLAGHER, Assistant in Chemistry,
2 Cascadilla Place

CHARLES FREDERICK CLARK, B S., Assistant Agronomist in Experiment Station, *104 Utica Street*

JESSE RANDOLPH PAWLING, A.B., Assistant in Histology and Embryology, *319 Dryden Road*

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Problems of the Far East.

EUGENE A. PHILBIN, *New York City*
The Office of District Attorney of New York County.

W. A. NEILSON, *New York City*
Shakespeare's Treatment of Sentimentalism.

JUDGE ALFRED C. COXE, A.M. (United States Circuit Judge), Lecturer on the Law of Shipping and Admiralty, *Utica*

ALBERT H. WALKER, LL.B., (of the New York Bar), Lecturer on the Patent Laws of the United States, *Hartford, Conn.*

ROYAL A. GUNNISON, LL.B., (United States District Judge, Alaska), Lecturer on the United States Bankruptcy Act, *Juneau, Alaska*

RALPH MODJESKI, Consult. Engr., The Thebes Bridge, *Chicago, Ill.*

ANDREW O. CUNNINGHAM, Bridge Engr., Reinforced Concrete Structures for Railroads, *St. Louis, Mo.*

PROFESSOR GARDNER S. WILLIAMS, Fire Protection, *Ann Arbor, Mich.*

ROBERT SPURR WESTON, Sanitary Engr., Purification of Ground Waters, *Boston, Mass.*

THOMAS K. BELL, Chief Engr., Development of Special Track Construction, *Philadelphia, Pa.*

COLONEL HENRY G. PROUT, Some Relations of the Engineer to Society, *New York City*

D. B. RUSHMORE, Design of Alternators, *Schenectady*

F. A. HALSEY, Metric Fallacy, *New York City*

CHARLES F SCOTT, Electrical Engineering and Engineers, *Pittsburg, Pa.*

F. M. RITES, Inertia Governors, *Ithaca*

WALTER C. KERR, Post Graduate Suggestions, *New York City*

F. A. C. PERRINE, Water Power Installations, *New York City*

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1904–1905.

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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 of those entering as specials is given on page 56. Applicants 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, *at Ithaca* in September, at the beginning of the first term on the dates given below. For examinations in June see below and page 54.

Students who have tried entrance examinations and failed to pass are not entitled to the privilege of admission on school certificates or Regent's credentials.

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 at Ithaca and various other places will be accepted under the same conditions as if such examinations were held by this University. For further particulars see page 54 and address Secretary College Entrance Examination Board, Post Office, Sub-Station No. 84, New York City.

Permits to take the September examinations must be secured from the Registrar. The permits should be obtained at least twenty-four hours before the date of the examination to be taken. They will be sent by mail upon application.

Permits to take the examinations held June 18–23, 1906, and the times and places at which they are held must be secured from the Secretary of the College Entrance Examination Board, Post Office Sub-station No. 84, New York City. See also pages 34 and 54.

Students deficient in any of the subjects required for admission, who may be admitted to the University by the Faculty concerned, 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 the University. For exception in case of students entering the College of Arts and Sciences, see under that College.

No examination of candidates for admission will be held at any other times or places. The exact dates and hours for each September (in 1906 September 18–22) entrance examination may be secured from the Registrar. Specimen copies of September examination papers will be sent on application to the Registrar.

The following table shows the equivalent subject as given under the College Entrace Examination Board.

Cornell University Subject.	Equivalent College Board Subject.
1. English.	English a, b.
2. Ancient History (to 814 A.D.)	Ancient History.
3. Modern History (from 814 A.D.)	Mediæval and Modern Hist.
4. American History (inc. Civil Government).	American Hist. and Civil Gov.
5. English History.	English History.
6. Plane Geometry.	Plane Geometry.
7. Elementary Algebra.	Elementary Algebra.
8. Solid Geometry.	Solid Geometry.
9. Advanced Algebra.	Advanced Algebra.
10a. Plane Trigonometry.	Plane Trigonometry.
10b. Spherical Trigonometry.	Spherical Trigonometry.
11a. Elementary German.	Elementary German.
11a and b. Advanced German.	Intermediate German.
12a. Elementary French.	Elementary French.
12a. and b. Advanced French.	Intermediate French.
13a. Elementary Spanish.	Spanish.
13a and b. Advanced Spanish.	———
14. Latin Grammar.	Latin Grammar.
14a. Caesar.	Caesar.
14b. Latin Composition.	Latin Composition.
14c. Cicero.	Cicero.
14d. Virgil.	Virgil.
15. Greek Grammar.	Greek Grammar.
15a. Xenophon.	Xenophon.
15b. Greek Composition.	Greek Composition.
15c. Homer.	Homer.
16. Physics.	Physics.
17. Chemistry.	Chemistry.
18. Botany.	Botany.
19. Geology.	———
20. Zoology.	———
21. Drawing.	———

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

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.

SUBJECTS FOR ADMISSION.

The subjects that may be offered for admission are named in the following lists :—

Elementary Subjects.

The following elementary subjects are required for admission to all colleges of the University except the Veterinary College :

English,
History.*
Plane Geometry.
Elementary Algebra.

Advanced Subjects.

In addition to the elementary subjects, an applicant must offer from the following list the advanced subjects required by the college to which he seeks admission. The figure following each subject indicates its relative weight :

Advanced Mathematics (6).
  Solid Geometry (2).
  Advanced Algebra (2).
  Plane Trigonometry, Spher. Trigonometry } (2)
German (12).
  Elementary German (6).
  Advanced German (6).
French (12).
  Elementary French (6).
  Advanced French (6).
Spanish (12).
  Elementary Spanish (6).
  Advanced Spanish (6).
Latin (18).
  Latin Grammar and Caesar (6).
  Latin Composition and Cicero (6).
  Virgil (6).
Greek (12).
  Greek Grammar, Xenophon (6).
  Greek Composition, Homer (6).
Physics (6).
Chemistry (6).
Botany (6).
Geology (6).
Zoology (6).
Drawing (6).

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* One of the following: (1) American (including Civil Government), (2) English, (3) Ancient (to 814 A. D.), (4) Mediæval and Modern European (from 814 A.D.)

REQUIREMENTS FOR ADMISSION.

College of Arts and Sciences.

For admission to the College of Arts and Sciences an applicant must offer the Elementary Subjects and also one of the following groups of Advanced Subjects :

A. Latin (18), Greek (12).

B. Latin (18); and either German (12), or French (12), or Spanish (12).

C. One of the following : Advanced Mathematics (6), Physics (6), Chemistry (6), Geology (6), Zoology (6); and also two of the following : German (12), French (12), Spanish (12).

College of Law.

For admission to the College of Law an applicant must offer the Elementary Subjects and also 30 units from the list of Advanced Subjects. For admission on Regents' credentials and school certificates, see under College of Law.

Medical College.

For admission to the Medical College an applicant must offer a Cornell Medical Student's certificate issued by the Regents of the State of New York. For further details, see under the Medical College.

New York State Veterinary College.

For admission to the New York State Veterinary College an applicant must offer a Veterinary Student's certificate issued by the Regents of the State of New York.

College of Agriculture.

For admission to the College of Agriculture an applicant must offer the Elementary Subjects and also 30 units from the list of Advanced Subjects, including 12 units either in French or in German.

College of Architecture.

For admission to the College of Architecture an applicant must offer the Elementary Subjects and also Mathematics (6), and either French (12) or German (12). An applicant who does not present a certificate of graduation from an approved preparatory school, or a satisfactory Regents' credential must, in addition to the above, also offer 12 units from the Advanced Subjects not already offered.

College of Civil Engineering.

For admission to the College of Civil Engineering an applicant must offer the Elementary Subjects and also one (30 units) of the following groups of Advanced Subjects:

A. Advanced Mathematics (6) and any two of the following languages: German (12), French (12), Spanish (12).

B. Advanced Mathematics (6); and German (12); and French (6) or Spanish (6); and any other 6 units from the Advanced Subjects.

C. Advanced Mathematics (6); and French (12); and German (6) or Spanish (6); and any other 6 units from the Advanced Subjects.

D. Advanced Mathematics (6); and German (12); and any 12 units in Latin.

Sibley College of Mechanical Engineering and the Mechanic Arts.

For admission to the Sibley College of Mechanical Engineering and the Mechanic Arts an applicant must offer the Elementary Subjects and also one (30 units) of the following groups of Advanced Subjects:

A. Advanced Mathematics (6) and any two of the following languages: German (12), French (12), Spanish (12).

B. Advanced Mathematics (6); and German (12); and French (6) or Spanish (6); and any other 6 units from the Advanced Subjects.

C. Advanced Mathematics (6); and French (12); and German (6) or Spanish (6); and any other 6 units from the Advanced Subjects.

D. Advanced Mathematics (6); and German (12); and any 12 units in Latin.

ELEMENTARY SUBJECTS.

I. English.

1. 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 1906, 1907, and 1908 are: *A*, Shakespeare, The Merchant of Venice, Macbeth; The Sir Roger de Coverley Papers in the Spectator; Irving, Life of Goldsmith; Coleridge, The Ancient Mariner; Scott, Ivanhoe, Lady of the Lake; Tennyson, Gareth and Lynette, Elaine, The Passing of Arthur; Lowell, The Vision of Sir Launfal; George Eliot, Silas Marner. *B*, Shakespeare, Julius Caesar; Milton, Lycidas, Comus, L'Allegro, Il Penseroso; Burke, Conciliation with America; Macaulay, Essay on Addison and Life of Johnson.

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.

(Candidates evincing superior ability in the entrance examination in English are permitted to enter Course 2a or Course 4b without taking Course 1). See under English Department.

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

Regents' credentials (see p. 54) are not accepted in place of the entrance examination, unless they cover three of the following five subjects : first year English, second year English, third year English, fourth year English, and 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 three year course in 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.

History.

At least one of the four following subjects must be offered:

2. Ancient history, with special attention to Greek and Roman history, but 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.

The preparation in history is meant to require 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. Should *two* subjects, instead of *one*, be offered, each must have received at least half the amount of study above specified.

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.

The usual theorems and constructions contained in the best text-books on this subject, including the general properties of plane rectilinear figures, the circle and the measurement of angles, similar polygons, areas, regular polygons and the measurement of the circle.

Also the solution of original exercises, including loci problems, and the mensuration of lines and plane surfaces.

(A knowledge of the metric system of weights and measures is assumed in all the examinations in mathematics.)

7. Elementary Algebra.

As much as is contained in the better American and English text-books on this subject, including in particular:

The four fudamental operations with rational algebraic expressions, factors, common divisors and multiples, involution including the bino-

mial theorem for positive integral exponents, radicals, including the extraction of square roots of polynomials and of numbers, fractions, including ratio and proportion, fractional and negative exponents, and arithmetic and geometric series.

Also the solution of equations of the first degree (both numerical and literal) involving one or more unknown numbers, the solution of quadratic equations, and of the easier cases of equations involving one or more unknown numbers that can be solved by the methods of simple or quadratic equations.

It is assumed that pupils will be required throughout the course to solve numerous problems which will involve putting questions into equations, and to fully discuss their solutions. Some of these should be practical problems chosen from mensuration, physics, etc.; the use of graphical methods and illustrations, particularly in connection with the solution of equations, is also expected.

ADVANCED SUBJECTS.

8. Solid Geometry (2 Units.)

The usual theorems and constructions contained in the best text-books on this subject, including the relations of planes and lines in space; the properties and measurement of prisms, pyramids, cylinders, and cones; the sphere and the spherical triangle.

Also the solution of original exercises, including loci problems, and the mensuration of surfaces and solids.

9. Advanced Algebra (2 Units).

As much as is contained in the better text-books on this subject, including in particular:

(1). A somewhat more extended treatment (together with a thorough review) of the more important topics included in Elementary Algebra; for example, complex fractions, highest common factor, fractional and negative exponents, radicals, the theory of quadratic equations (including maximum and minimum, and simultaneous quadratic equations), ratio, proportion, the progressions, and the binomial theorem for a positive integral exponent.

(2). Permutations and combinations, inequalities, mathematical induction, irrational and complex numbers, with graphical representation of sums and differences of the latter, elementary treatment of determinants, including the use of minors and the solution of linear equations, undetermined coefficients, partial fractions, logarithms, (not including logarithmic series), and elementary tests for the con-

vergence of infinite series, series of differences, including interpolation.

Also the solution of numerical equations of higher degree, and so much of the theory of equations, with graphical methods, as is necessary for their treatment, including Descarte's rule of signs and Horner's method, but not Sturm's functions nor multiple roots.

Special attention should also be paid to applications under each topic, and emphasis should be placed upon accuracy and precision.

10. Trigonometry (2 Units.)

Plane Trigonometry. The definitions and relations of the six trigonometric functions as ratios; circular measurement of angles; proofs of the principal formulas, especially those for the sine, cosine, and tangent of the sum or difference of any two angles whatever, and of double angles and half angles; also the product expressions for the sum of two sines or of two cosines, etc.; the transformation of trigonometric expressions by means of these formulas, the use of inverse functions, and the solution of right and oblique triangles, together with simple applications.

Spherical Trigonometry. The derivation of the important formulas, and the solution of right and oblique spherical triangles, together with the proper interpretation of ambiguous cases.

(The above requirements in mathematics are based largely upon those of the College Entrance Examination Board.)

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

(1). 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.

(2). 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 Regent's 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.

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 formulas, 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,

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.

11. German (12 Units).

The examination in advanced German covers the examination in the elementary requirement in that subject. The attention of teachers preparing students in 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 German (6 Units).—(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 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 (6 Units.)—[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 seven hundred 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.

12. French (12 Units.)

The examination in advanced French covers the examination in the elementary requirement in that subject. The attention of teachers preparing students in French 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 (6 Units.)—(a) The translation at sight of ordinary nineteenth 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 understand spoken French. The writing of French from dictation is recommended as a useful exercise.

Advanced French (6 units): [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 use 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.

13. Spanish (12 units).

Elementary Spanish (6 units). (a) The rudiments of grammar, including the conjunction 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 200 to 250 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: Moratín's *El Sí de las Niñas;* Caballero's *La Familia de Alvareda;* Alarcón's *El Capitán Veneno*, and Valera's *El Pájaro verde.*

Advanced Spanish (*6 Units*).—(a) The reading of from 400 to 500 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 : Galdós's *Doña Perfecta ;* Valera's *Pepita Jimenez ;* Alarcón's *El Final de Norma ;* Valdés's *José*, and Padre Isla's version of *Gil Blas*.

14. Latin (18 Units).

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 *Ænied*.

15. Greek (12 Units).

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 hexameter.

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

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).

16. Physics (6 Units.)

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 Nichol'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.

Applicants for credit in entrance physics should forward to the Department of Physics, Cornell University, Ithaca, N. Y., a note book containing the student's own record of his laboratory experiments written up in the laboratory at the time the experiments were performed. To every note book presented there must be attached a statement signed by the teacher similar in form to that given below :

"I hereby certify that the accompanying note book is the original record of the Experiments performed by_____in the Physical Laboratory of the_____School."

With this note book the applicant should send a card giving the nature and extent of the course in physics that he has pursued. These cards may be obtained from the Department of Physics upon application.

If the entrance examination is to be taken, the note book and card should be submitted at the time of the examination.

Charges should be prepaid on note books forwarded to the Department of Physics.

These books will be returned to the candidate upon application at any time within one year after the examination.

17. Chemistry (6 Units.)

Students offering chemistry for entrance should have completed a course substantially equivalent to that outlined in the Report of the College Entrance Examination Board. This course comprises: "The chief physical and chemical characteristics, the preparation and the recognition of the following elements and their chief compounds: *Oxygen*, *hydrogen*, *carbon*, *nitrogen*, *chlorine*, *bromine*, *iodine*, *fluorine*, *sulphur*, phosphorus, silicon, potassium, *sodium*, calcium, magnesium, *zinc*, copper, mercury, silver, aluminum, *lead*, tin, *iron*, manganese, chromium.

"More detailed study should be confined to the italicized *elements* (as such) and to a restricted list of compounds, such as; Water, hydrochloric acid, carbon monoxide, carbon dioxide, nitric acid, ammonia, sulphur dioxide, sulphuric acid, hydrogen sulphide, sodium hydroxide.

"Attention should be given to the atmosphere (constitution and relation to animal and vegetable life), flames, acids, bases, salts, oxidation and reduction, crystallization, manufacturing processes, familiar substances (illuminating gas, explosives, baking powder, mortar, glass, metallurgy, steel, common alloys, porcelain, soap).

"Combining proportions by weight and volume; calculations founded on these and Boyle's and Charles's laws; symbols and nomenclature (with careful avoidance of special stress, since these are non-essential): atomic theory, atomic weights and valency in a very elementary way; nascent state; natural grouping of the elements; solution (solvents and solubility of gases, liquids and solids, saturation); strength (=activity) of acids and bases; conservation and dissipation of energy; chemical energy (very elementary); electrolysis. Chemical terms should be defined and explained, and the pupil should be able to illustrate and apply the ideas they embody. The theoretical topics are not intended to form separate subjects or study, but are to be taught only so far as is necessary for the correlation and explanation of the experimental facts.

"It is recommended that the candidate's preparation in chemistry should include:

a. Individual laboratory work, comprising at least forty exercises. By this is meant that the experimental work actually performed by the student in the laboratory must amount to not less than ninety actual hours. If these hours are spent in sessions of three consecutive forty-five minute periods or exercises, then forty such periods or exercises constitute the minimum requirement for the laboratory work.

In no case will credentials be accepted when the laboratory work amounts to less than ninety hours of actual laboratory practice.

It is advised that careful attention be given to the quality of the note book record. The note book must show that the student is able to interpret chemical phenomena correctly. A mere statement of observations and perfunctory conclusions is to be avoided.

b. Instruction by lecture-table demonstrations, to be used mainly as a basis for questioning upon the general principles involved in the pupil's laboratory investigations.

c. The study of at least one standard text-book, to the end that the pupil may gain a comprehensive and connected view of the most important facts and laws of elementary chemistry."

The course quoted above includes also the subjects of ionization, mass action and equilibrium. It is, however, undesirable to accord these topics more than mere mention in the elementary course. Moreover, the instruction should not be extended to cover the elements of qualitative analysis, for the time usually at the disposal of the teacher for the presentation of elementary inorganic chemistry is no more than sufficient to properly cover that subject.

The text-book used should be similar in scope and treatment to the "Elementary Chemistry" by Clarke and Dennis, and the laboratory work offered should be substantially equivalent to that given in the laboratory manual by the same authors. Applicants for credit in entrance chemistry should forward to the Department of Chemistry, Cornell University, Ithaca, N. Y., a note book containing the student's own record of his laboratory experiments, written up in the laboratory at the time the experiments were performed. To every note book presented there must be attached a statement signed by the teacher, similar in form to that given below :

"I hereby certify that the accompanying note book is the original record of the Experiments performed by _____in the Chemical Laboratory of the _____ School."

With this note book the applicant should send a card giving the nature and extent of the course in chemistry that he has pursued. These cards may be obtained from the Department of Chemistry upon application.

If the entrance examination is to be taken, the note book and card should be submitted at the time of the examination.

Charges should be prepaid on note books forwarded to the Department of Chemistry.

These books will be returned to the candidate upon application at any time within one year after the examination.

Botany (6 units).

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 relationship 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 fundamently 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, minum ; 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 familiarize 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, coleochete; among the fungi,—mucor, saprolegnia, puccinia (wheat rust), one of the erysipheae (powery mildews), mushrooms; among the liverworts,—riccia, marchantia, cephalozia; among the mosses,—funaria, mnium, 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 aud 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 careful examination of types in the families of angiosperms. The following are suggested,—ranunculacae, cruciferae, leguminosae, rosaceae, umbelliferae, compositae, labiatae, cupuliferae, salicaceae, liliaceae, araceae, cyperaceae, geraniaceae, 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.

19. Geology (6 Units.)

To meet the requirements 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."

20. Zoology (6 Units.)

The examination in Zoology will consist of two parts as follows:

a. **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 Haskell'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.

b. **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 (dog, cat, 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.

21. **Drawing.** See under Architecture and Mechanical Engineering.

ADMISSION WITHOUT EXAMINATION.

(For the specific entrance subjects required for admission see pages 36 and 37 and under college concerned.

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, Spanish, 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.

The "Equivalent" Academic Diploma and "Equivalent" sixty count academic certificate will not be considered except for admission to Law.

Students who have tried entrance examinations and failed to pass are not entitled to the privilege of admission on school certificates or Regents' credentials.

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 37), the Regents' diploma or sixty count academic certificate must cover three of the five following subjects: first year English, second year English, third year English, fourth year English and, English Reading.

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.

(For the specific entrance subjects required for admission, see pages 36 and 37 and under college concerned.)

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 entrance examination in English* (*see pages* 37, 38, *and* 64).

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.

10. Students who have tried entrance examinations and failed to pass are not entitled to the privilege of admission on school certificates or Regents' credentials.

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

(For specific entrance subjects required for admission see pages 36, 37, and under college concerned.)

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 at Ithaca and various other places will be accepted uuder the same conditions as if such examinations were held by Cornell University. See pages 33 and 34.

Students who have tried entrance examinations and failed to pass are not entitled to the privilege of admission on school certificates or Regents' credentials.

In June, 1906, the entrance examinations of Cornell University will be the equivalent examinations of the College Entrance Examination Board, of which Cornell University is a member. These examinations will be held June 18–23, 1906. See also page 33.

All applications for examination must be addressed to the Secretary of the College Entrance Examination Board, Post Office Sub-Station 84, New York, N. Y., and must be made upon a blank form to be obtained from the Secretary upon application.

Applications for examination at points in the United States east of the Mississippi River (also at Minneapolis, St Louis, and other points on the Mississippi River) must be received not later than Monday, June 4, 1906.

Applications for examination at other points in the United States or in Canada must be received not later than Monday, May 28, 1906.

Applications for examination at points outside of the United States and Canada must be received not later than May 15, 1906.

Applications received later than the date named will be accepted when it is possible to arrange for the examination of the candidates concerned, *but only upon payment of five dollars in addition to the usual examination fee.* Candidates filing belated applications do so at their own risk.

The examination fee is five dollars for all candidates examined at points in the United States and Canada, and fifteen dollars for all candidates examined at points outside of the United States and Canada.

Candidates for admission to Cornell University who are examined at Ithaca, N. Y., in English alone, will in 1906 be required to pay an examination fee of only one dollar. If, however, the applications of such candidates are not received by the Secretary of the College Entrance Examination Board on or before June 4, 1906, an additional fee of five dollars must be paid.

A list of the places at which the examinations are to be held in June, 1906, will be published about March 1. Requests that the examinations be held at particular points, to receive proper consideration, should be transmitted to the Secretary not later than February 1.

For further particulars see page 33 and address Secretary of College Entrance Examination Board, Post Office 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.

Candidates for admission as special students should apply to the Registrar for application blanks and should correspond directly with

the professor in whose department they expect to take work, in order to secure a recommendation.

Special students in the College of Arts and Sciences 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.

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

Special students in Sibley College will be expected to work with regular classes whenever 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.

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.

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 (for exception see under College of Law) 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 53–55.

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 candidate 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 (for exception see under College of Law) 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 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 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 text-books 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. Applicants 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 73.

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.

CREDIT.

One University hour of credit is one lecture or recitation each week for a period of a half-year term.

In all courses, two and a half hours 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.

The pass mark is 60 or over. A mark of 41 to 59 inclusive is a condition. Below 41 a failure.

PAYMENTS TO THE UNIVERSITY.

Annual Tuition Fees.

(FOR FREE TUITION SEE PAGE 60.)

	Regular.	*Special.*
Graduate Department (General)	$100	—
Graduate Department (Technical exc. Architecture which is $125)	150	—
College of Arts and Sciences	100	$125
Law	100	125
Medicine	150	150
Veterinary (for free tuition see p. 60)	100	125
Agriculture (for free tuition see p. 60)	100	125
Architecture	125	125
Civil Engineering	150	150
Mechanical Engineering	150	150

The $100 tuition is payable $55 at beginning of first term and $45 at beginning of second term; the $125, $70 and $55; the $150, $85 and $65; in the Medical College in New York City, the entire fee is paid at the beginning of the year.

Students upon registering become liable for the tuition fees for the term.

The tuition of any student withdrawing within twenty days after the first registration day for reasons satisfactory to the Treasurer and Registrar, may be returned and the charge cancelled.

The tuition of any student who withdraws from the University for reasons satisfactory to the Treasurer and Registrar, on or before November 15th or March 15th, may have refunded one half of the tuition fee for the current term.

Students registering after December 1st shall pay for the balance of the first term two thirds of the tuition fee for the first term. Students registering after April 1st shall pay for the balance of the second term two-thirds of the tuition fee for the second term.

Tuition is free to the students with State scholarships; to New York State students in the State Veterinary College; 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 College of Agriculture.

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.

Other Fees.

A matriculation fee of $5 is charged all students on entering the University.

Each student who is required or allowed to use the Gymnasium or Armory is charged a fee of $2 per term, which said fee entitles him to the use of a locker.

Students taking work in Sibley College are charged $10 per half-year for material used in shops and Sibley Laboratories.

A 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 $10 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 $20, 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 expenses 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

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 College of Arts and Sciences.

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 Commissioner of Education 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 Commissioner of Education 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 Commissioner of Education and the Commissioner 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, aud 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 registered in courses leading to first degrees, at a special

examinations 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 has 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. No scholarship will be awarded to any candidate who is reported markedly deficient in any subject in which he is examined, and the right is reserved to fill fewer than eighteen scholarships in the absence of a sufficient number of duly qualified candidates. 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 three of the following five subjects: first year English, second year English, third year English, fourth year English, and English reading. See pages 34 and 54. *Other diplomas and School certificates* are not accepted in place of this English examination.

These scholarships will be awarded on the basis of examinations in three of the six groups mentioned below.

[(a) and (b), however, may not be taken by the same candidate and every candidate must take either (b) or (c) or (d).]

(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 39, 40, 41, 42, 43, 44, 45 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 these Scholarships are paid at the office of the Treasurer of the University in two equal payments, on the 15th of February, and the 15th of June, upon the certificate of the chairman of the Scholarship Committee that the record of the holder is satisfactory.

The Frank William Padgham Scholarship, covering tuition and fees in Sibley College, 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, N. Y. The holder shall pursue the regular course in Mechanical

Engineering in Sibley College, and will be excused from the payment of tuition and the regular Sibley College fee.

This special undergraduate scholarship cannot be held in connection with a New York State Scholarship.

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.

State Grange Scholarships in Agriculture.—At its 31st annual meeting, held at Cortland, February 4, 1904, the New York State Grange resolved to "appropriate annually $200 to be given to members of the Order in the form of four scholarships to any of the agricultural courses in Cornell University." The scholarships are each of a value of $50, to be awarded to two men and two women who attain the highest standing in competitive examination. The candidate should apply to the Master of the Pomono Grange in his home county, or to the Deputy in counties that have no Pomona.

PRIZES.

(A special pamphlet on Prizes may be obtained from the Registrar.)

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 '86 Memorial Prize is an undergraduate prize in 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 '94 Memorial Prize is an undergraduate prize in 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 Shakespeare Prize. The Shakespeare Prize, founded in 1887 by Mrs. Alfred Smith Barnes, of Brooklyn, consists of about fifty dollars, being the annual income from her gift of one thousand dollars.

The Guilford Essay Prize, founded in 1902 by the late James B. Guilford, to promote "a high standard of excellence in English prose composition," consists of about $150, being the annual income from his bequest of about $3,000.

The French Prize, founded in 1902, by Professor Hiram Corson, in memory of his wife, Mrs. Caroline Rollin Corson, consists of a gold medal of the value of fifty dollars, to be awarded annually for the best competitive essay on a subject in French Literature or Philology. In accordance with the wish of the founder, the prize is never to be given in money.

The Browning Prize. The Browning Prize, founded in 1902 by Professor Hiram Corson, consists of a gold medal of the value of fifty dollars, to be awarded annually for the best competitive essay on Robert Browning. In accordance with the wish of the founder, the prize is never given in money.

Prizes in German. An annual prize of one hundred dollars for three years has been offered by an eminent scholar interested in German literature, for the best essay npon the works of some representative German author.

The Luana L. Messenger Memorial Prize. This prize of $50 was established by Mr. Hiram J. Messenger, '80, as a memorial to his mother, and is awarded annually to the student writing the essay giving evidence of the best research and most fruitful thought in the field of human progress or the evolution of civilization during some period in human history or during human history as a whole.

The Sherman-Bennett Prize was founded in 1905 from a fund bequeathed for that purpose to William J. Bryan of Lincoln, Nebraska, by Mr. Philo Sherman Bennett of New Haven, Connecticut. The prize consists of the income of $400, and is to be awarded annually for "the best essay discussing the principles of free government."

The John Metcalfe Polk Memorial Prizes. These prizes, established by Dean W. M. Polk, are awarded annually to students in the Medical College.

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 New York State Veterinary College, as follows : to the first in merit, fifteen dollars ; to the second in merit, ten dollars.

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 instituiion, show the greatest merit in Sibley College work.

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.

The Sands Memorial Medal, founded by the family of the late Charles Goodwin Sands of the Class of '90, is awarded to students of Architecture for all designs of exceptional merit presented in the regular competitions.

The Brown Memorial Medal to be awarded to students in Architecture was founded by Mr. John Hartness Brown in memory of his brother Clifton Beckwith Brown, of the class of 1900, who was killed on the field of battle at San Juan Hill.

The Central N. Y. Chapter A. I. A. Prize is a prize of twenty dollars given annually by the Central New York Chapter of the American Institute of Architecture to the winner of first place in the competition in senior design.

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 seminaries 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 seminaries, 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 Departments : 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 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 and Graduate Scholarships are required, upon accepting their appointments, to file a bond of the face value of such Fellowship or Graduate Scholarship (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 were 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 aud 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, except in Agriculture, are charged in all cases, including candidacy for degrees *in absentia*.

Application 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 com-

mittee, he is then put under the supervision of the special committee conducting the work which he desires to pursue. The 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 committee 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, German Languages, Romance Languages, English, Philosophy, Science and Art of Education, History and Political Science, Mathematics, Physics, Chemistry, Botany, 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 Mechanical Engineering.

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 theses 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 theses 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 thesis must be delivered to the Registrar on or before the Friday preceding the Commencement at which the degree is conferred. The 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 74 and 75.

The degree of Master of Arts is conferred on graduates of a four year course in any college of this University, and on graduates of other universities and colleges whose requirements for the degree of Bachelor of Arts are equal to those of this University upon the following conditions:

In order to become a candidate the applicant must have pursued a course of study equivalent to that required for graduation in this University in the College of Arts and Sciences. Graduates of a four year course in any college of this University may under the usual rules become candidates for the degree of Master of Arts.

The candidate is expected to spend at least one year at the University pursuing a course of study marked out by the University Faculty.

He must present a thesis and pass the requisite special final examinations. Before the degree is conferred one copy of the thesis must be deposited in the University library.

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 examination 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 the 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 a four year course in any college of this University, and on graduates of other universities and colleges whose requirements for the degree of Bachelor of Arts are equal to those of this University, upon 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 College of Arts aud Sciences. Graduates of a four year course in any college of this University may under the usual rules become candidates for the degree of Doctor of Philosophy.

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 74 and 75.]

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.

COLLEGE OF ARTS AND SCIENCES.

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 Chemistry, Emeritus, and Lecturer on Chemistry.

HIRAM CORSON, A.M., LL.D., Litt.D., Professor English Literature, Emeritus, and Lecturer on English Literature.

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

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

THOMAS FREDERICK CRANE, A.M., Litt.D., 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.M., Ph.D., Professor of German Language and Literature.

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

JAMES MORGAN HART, A.M., J.U.D., Litt.D., Professor of the English Language and Literature.

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

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

GEORGE LINCOLN BURR, A.B., LL.D., Litt.D., Professor of Mediæval History.

CHARLES EDWIN BENNETT, A.B., Litt.D., 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., LL.D., Sage Professor of Logic and Metaphysics.

EDWARD BRADFORD TITCHENER, M.A., Ph.D., LL.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 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.

LOUIS MUNROE DENNIS, Ph.B., B.S., Professor of Inorganic Chemistry.

JOSEPH ELLIS TREVOR, Ph.D., Professor of Physical Chemistry.

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.

WILLIAM RIDGELY ORNDORFF, A.B., Ph.D., Professor of Organic and Physiological Chemistry.

ERNEST MERRITT, M.E., Professor of Physics.

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

HENRY SHALER WILLIAMS, Ph.D., Professor of Geology and Director of Geological Museum.

JAMES McMAHON, A.M., Professor of Mathematics.

JOHN HENRY TANNER, B.S., Ph.D., Professor of Mathematics.

FRANK ARTHUR BARTON, M.E., Captain U. S. Army, Professor of Military Science and Tactics.

CHARLES VANPATTEN YOUNG, A.B., Acting Professor of Physical Culture and Director of the Gymnasium.

FREDERICK BEDELL, Ph.D., Professor of Applied Electricity.

RALPH CHARLES HENRY CATTERALL, Ph.D., Professor of Modern European History.

MAX FARRAND, Ph.D., Acting Professor of American History.

GEORGE SYLVANUS MOLER, A.B., B.M.E., Assistant Professor of Physics.

HERBERT CHARLES ELMER, A.B., Ph.D., Assistant Professor of Latin.

WILLIAM ALEXANDER HAMMOND, A.M., Ph.D., Assistant Professor of Ancient and Mediæval Philosophy and Æesthetics, and Secretary of the University Faculty.

WILLARD WINFIELD ROWLEE, B.L., D.Sc., Assistant Professor of Botany with special reference to Comparative Histology and Systematic Botany.

GILBERT DENNISON HARRIS, Ph.B., Assistant Professor of Paleontology and Stratigraphic Geology.

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

FREDERICK CLARK PRESCOTT, A.B., Assistant Professor of the English Language and Literature, and Secretary of the Faculty of Arts and Sciences.

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

WILLIAM STRUNK, Jr., A.B., Ph.D., Assistant Professor of the English Language and Literature.

BENJAMIN TRUMAN KINGSBURY, Ph.D., M.D., Assistant Professor of Physiology.

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

EMILE MONNIN CHAMOT, Ph.D., Assistant Professor of Sanitary Chemistry and Toxicology.

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

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

HEINRICH RIES, Ph.D., Assistant Professor of Economic Geology.

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

JOHN IRWIN HUTCHINSON, A.B., Ph.D., Assistant Professor of Mathematics.

VIRGIL SNYDER, A.M., Ph.D., Assistant Professor of Mathematics.

CLARK SUTHERLAND NORTHUP, A.B., Ph.D., Assistant Professor of the English Language and Literature.

JOHN SANDFORD SHEARER, B.S., Ph.D., Assistant Professor of Physics.

GEORGE WALTER CAVANAUGH, B.S., Assistant Professor of Chemistry in its relations to Agriculture.

ERNEST BLAKER, Ph.D., Assistant Professor of Physics.

GUY MONTROSE WHIPPLE, Ph.D., Assistant Professor of the Science and Art of Education.

OTHON GOEPP GUERLAC, Licencié ès Lettres, Assistant Professor of French.

HOLLIS ELLSWORTH DANN, Assistant Professor of Music.

JAMES ALBERT WINANS, A.M., Assistant Professor of Oratory and Debate.

ALBERT BERNHARDT FAUST, Ph.D., Assistant Professor of German.

WILLIAM BENJAMIN FITE, Ph.D., Assistant Professor of Mathematics.
FRANK EMIL LODEMAN, A.M., Ph.D., Instructor in the Romance Languages.
ELIAS JUDAH DURAND, A.B., D.Sc., Instructor in Botany and Assistant Curator of the Cryptogamic Herbarium.
BLIN SILL CUSHMAN, B.S., Instructor in Chemistry.
ELLEN BRAINARD CANFIELD, Instructor in Sage College in charge of Gymnasium.
KARL McKAY WIEGAND, B.S., Ph.D., Instructor in Botany and Assistant Curator of the Phanerogamic Herbarium.
EUGENE PLUMB ANDREWS, A.B., Instructor in Archæology and Curator of the Museum of Casts.
ALEXANDER DYER MacGILLIVRAY, Ph.D., Instructor in Entomology and General Invertebrate Zoology.
GEORGE MAXWELL HOWE, A.B., Ph.D., Instructor in German,
BENTON SULLIVAN MONROE, A.M., Ph.D., Instructor in English.
ARTHUR LYNN ANDREWS, M.L., Ph.D., Instructor in English.
WILLIAM ALBERT RILEY, B.S., Ph.D., Instructor in Entomology and General Invertebrate Zoology.
LOUIS LEAMING FORMAN, Ph.D., Instructor in Greek.
PAUL RUSSELL POPE, A.B., Ph.D., Instructor in German.
CHESTER MURRAY, Ph.B., Instructor in the Romance Languages.
LANE COOPER, A.B., Ph.D., Instructor in English.
JOHN CALVIN WATSON, Ph.D., Instructor in Latin.
HUGH DANIEL REED, B.S., Ph.D., Instructor in Systematic and Economic Vertebrate Zoology.
ORA MINER LELAND, B.S., (C.E.), Instructor in Astronomy.
ARTHUR WESLEY BROWNE, M.S., Ph.D., Instructor in Chemistry.
PAUL FREDERICK GAEHR, A.B., A.M., Instructor in Physics.
ROBERT COYNER FENNER, B.S., M.E., Instructor in Physics.
HENRY WILKES WRIGHT, A.B., Ph.D., Instructor in Philosophy.
GEORGE ROBERT OLSHAUSEN, Ph.D., Instructor in Physics.
ROBERT FRANKLIN HOXIE, Ph.B., Instructor in Political Economy.
EDWARD GODFREY COX, A.M., Instructor in English.
WILLARD JAMES FISHER, A.B., Instructor in Physics.
OTIS AMSDEN GAGE, Ph.B., Instructor in Physics.
CHARLES NELSON HASKINS, Ph.D., Instructor in Mathematics.
WILLIAM CHAUNCEY GEER, A.B., Ph.D., Instructor in Chemistry.
GEORGE ABRAM EVERETT, A.B., LL.B., Instructor in Oratory and Debate.

JOSEPH QUINCY ADAMS, JR., A.B., A.M., Instructor in English.
ERNEST EDWIN HASTINGS, JR., Instructor and Assistant Examiner in Physical Culture.
RALPH CUTHBERT SNOWDON, A.B., Instructor in Chemistry.
CLARENCE OWEN HARRIS, A.B., Instructor in Latin.
ALBERT WILHELM BOESCHE, A.B., A.M., Instructor in German.
HALDOR HERMANNSSON, Instructor in Scandinavian Languages.
EDMUND HOWARD HOLLANDS, Ph.B., A.M., Ph.D., Instructor in Philosophy.
ROY STUART PATTISON, M.E., Instructor in Physics.
CLARENCE ALBERT PIERCE, B.S., M.S., Instructor in Physics.
HERBERT GROVE DORSEY, B.S., M.S., Instructor in Physics.
EUGENE CARSON CRITTENDEN, A.B., Instructor in Physics.
THOMAS G DELBRIDGE, A.B., Instructor in Chemistry.
LEE FRED HAWLEY, A.B., A.M., Instructor in Chemistry.
BERT S BUTLER, A.B., Instructor in Geology and Physical Geography.
WALTER EDWARD McCOURT, A.B., A.M., Instructor in Practical Geology and Mineralogy.

ASSISTANTS.

FRED CLARKSON FOWLER, Mechanician in the Department of Physics.
ROBERT SHORE, Assistant to the Professor of Botany and Head Gardener.
FRANK CUSTER EDMINSTER, A.B., Assistant in Mathematics.
CLARENCE ERROL FERREE, A.B., A.M., Assistant in Psychology.
FRANK LUTHER WHITNEY, Assistant in Geology.
HERBERT SPENCER JACKSON, Assistant in Botany.
NEAL DOW BECKER, LL.B., Assistant in Elocution and Oratory.
ABRAHAM ABBEY FREEDLANDER, A.B., Assistant in Modern European History.
EFFIE ALBERTA READ, A.B, Assistant in Histology and Embryology.
EGIN ANGUS GRAY, B.A., M.B., Medical Examiner at Gymnasium.
FREDERICK LEIGHTON, A.B., Assistant in Physics.
FRED HUNTINGTON JENNINGS, A.B., Assistant in Chemistry.
FRANCIS ROBERT SHARPE, B.A., Assistant in Mathematics.
FRANCIS CRAIG KRAUSKOPF, A.B., Assistant in Chemistry.
GEORGE COOKE ROBERTSON, A.B., Assistant in Chemistry.
THEODORE FRANKEL PAPPE, A.B., Assistant in Chemistry.
GORRELL ROBERT WHITE, A.B., Assistant in Chemistry.
WESTON MAYNARD KELSEY, A.B., Assistant iu Chemistry.

JOHN PETER MAGNUSSON, A.B., A.M., Assistant in Chemistry.
ANDREW CURTIS WHITE, Ph.D., Reader in Greek.
WILLIAM WOOLARD ROGERS, A.B., Assistant in Ancient History.
WALTER LINCOLN WHITTLESEY, Assistant in Politics.
GEORGE PENDLETON WATKINS, A.B., Assistant in Political Economy and Statistics.
CHARLES CLIFFORD HUNTINGTON, B.S., Ph.B., Assistant in Political Economy and Statistics.
THOMAS FREDERICK HASSETT, Assistant in Political Economy.
WILLIAM MASSEY CARRUTH, A.B., Assistant in Mathematics.
ELMER CLIFFORD COLPITTS, A.B., Assistant in Mathematics.
CHAUNCEY WILLIAM WAGGONER, B.S. in E.E., A.M., Assistant in Physics.
PETER IRVING WOLD, B.S., E.E., Assistant in Physics.
CHARLES WARNER PALMER, Assistant in Physics.
LEROY CLINTON ROBERT, Assistant in Physics.
MORTIMER JAY BROWN, Assistant in Chemistry.
ELMER EUGENE RANDOLPH, A.B., Assistant in Chemistry.
WILL JOHN BADER, A.B., Assistant in Chemistry.
FRANK HAWKINS, A.B., Assistant in Chemistry.
DONALD REDDICK, A.B., Assistant in Botany.
HURON HERBERT SMITH, B.S., Assistant in Botany.
ALBERT HAZEN WRIGHT, A.B., A.M., Assistant in Neurology and Vertebrate Zoology.
LEOPOLD REINECKE, A.B., Assistant in Paleontological Laboratory.
DANA M EVANS, General Assistant in Physical Culture and Wrestling Instructor.
FRANK HERBERT BAKER, Assistant in Boxing.
JEAN MARIUS GÉLAS, Assistant in Fencing.
IRVING OTTO CHORMANN, Assistant in Military Science.
JAMES LAWRENCE ELWOOD, Assistant in Military Science.
CHARLES FREDERICK LANDMESSER, Assistant in Military Science.
JOSEPH HENRY HATHAWAY, A.B., A.M., Assistant in Histology and Embryology.
EARL VINCENT SWEET, A.B., Assistant in Histology and Embryology.
BURTON JUSTUS RAY, AB., Assistant in Chemistry.
JOHN WILLIAM TURRENTINE, Ph.B., M.S., Assistant in Chemistry.
JOSEPH HERSCHEL COFFIN, B.S., A.M., Assistant in Psychology.
HENRY LEIGHTON, Assistant in Geology.

SPECIAL LECTURERS.

Besides the instruction regularly given by the resident officers of the University, a large number of lectures are delivered by non-resident lecturers on special subjects of importance. For this branch of instruction the services of eminent specialists are sought, and the number of lectures given by each lecturer varies according to the nature of the subject treated.

JOHN B. BURY, Litt.D., *Cambridge, England*
The Roman Abandonment of Britain.

JAMES WARD, LL.D., *Cambridge, England*
The Present Trend of Modern Speculation.

LOUIS C. ELSON, *Boston, Mass.*
How to Listen to an Orchestra.

JULIUS CHAMBERS, Ph.B., *New York City*
The City Editor and His Training School.
The Special Correspondent—The man who is presumed to have learned.
The Managing Editor—The man who *must* have learned.
The Editorial Writer—The man who doesn't have to learn; and the Business Manager, who has the manufactured product to sell.

GEORGE E. WOODBERRY, *Beverly, Mass.*
The Race-Function of Literature.

JOHN WARD STIMSON, *Nordhoff, Calif.*
A Vital American Art and its Outlook on American Life and Enterprise.

JAMES MOFFATT, D.D., *Ayrshire, Scotland*
Meredith—the Novelist.
Church and Creeds in Scotland.

J. E. SANDYS,
The History of Ciceronianism.
The Study of Greek during the Middle Ages and the Revival of Learning.

KENTARO KANCKO, LL.D., *Tokyo, Japan*
Problems of the Far East.

EUGENE A. PHILBIN, *New York City*
The Office of District Attorney of New York County.

W. A. NEILSON, *New York City*
Shakespeare's Treatment of Sentimentalism.

REQUIREMENTS FOR ADMISSION AND GRADUATION.

ENTRANCE SUBJECTS.

The subjects that may be offered for admission are named in the following lists :—

Elementary Subjects.

The following Elementary Subjects are required for admission to all colleges of the University except the Veterinary College :

English,
History,*
Plane Geometry,
Elementary Algebra.

Advanced Subjects.

In addition to the Elementary Subjects, an applicant must offer from the following list the Advanced Subjects required by the college to which he seeks admission. The figures following each subject indicate its relative weight :

Advanced Mathematics (6).
  Solid Geometry (2).
  Advanced Algebra (2).
  Plane Trigonometry } (2).
  Spher. Trigonometry }
German (12).
  Elementary German (6).
  Advanced German (6).
French (12).
  Elementary French (6).
  Advanced French (6).
Spanish (12).
  Elementary Spanish (6).
  Advanced Spanish (6).
Latin, (18).
  Latin Grammar and Caesar (6).
  Latin Composition and Cicero (6).
  Virgil (6).
Greek (12).
  Greek Grammar, Xenophon (6).
  Greek Composition, Homer (6).
Physics, (6).
Chemistry (6).
Botany (6).
Geology (6).
Zoology (6).
Drawing (6).

REQUIREMENTS FOR ADMISSION.

For admission to the College of Arts and Sciences an applicant must offer the Elementary Subjects and also one of the following groups of Advanced Subjects :

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*One of the following: (1) American (including Civil Government), (2) English, (3) Ancient (to 814 A. D.), (4) Mediæval and Modern European (from 814 A.D.)

A. Latin (18), Greek (12).

B. Latin (18), and either German (12), or French (12), or Spanish (12).

C. One of the following: Advanced Mathematics (6), Physics (6), Chemistry (6), Geology (6), Zoology (6), and also two of the following: German (12), French (12), Spanish (12).

Students admitted to the College of Arts and Sciences without satisfying the specific subjects in the above groups, must make up such deficiency during the freshman 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 33–57*].

For admission to the freshman class, communications should be addressed to the Registrar. See pages 35–57.

For admission to advanced standing from other colleges and universities, and as special students, communications should be addressed to the Registrar. See pages 56–57.

For admission to graduate work and to candidacy for advanced degrees, communications should be addressed to the Dean of the University Faculty. See page 73.

REQUIREMENTS FOR THE DEGREE OF BACHELOR OF ARTS.

[*Applying to all candidates for the degree after June, 1906, except those registered in the college during the year 1904–1905 and allowed on petition to graduate under the earlier system.*]

1. The requirements for the degree of Bachelor of Arts shall be residence for eight terms,* and, in addition to the prescribed work in the departments of Physical Culture and of Military Science and Tactics, the completion of one hundred and twenty hours of elective work.

2. A student who receives at entrance twelve or more hours of entrance credit in addition to the requirements for admission may be regarded as having satisfied one term of residence. Under no circumstances shall surplus entrance credit be accepted as the equivalent of more than one term.

3. A student who has satisfied the entrance requirements of this College, and has afterwards completed in two or more summer sessions at least twelve hours of work in courses approved by the de-

*The academic year is divided into two terms.

partments concerned, may be regarded as having thus satisfied one term or residence. Under no circumstances shall work done in summer sessions be accepted as the equivalent of more than one term or be counted for more than twelve hours towards graduation.

4. A student admitted to the College of Arts and Sciences from another college of Cornell University or from any other institution of collegiate rank shall be regarded as having completed the number of terms and of hours to which his records entitle him, and will receive all the privileges of students who have completed the same number of terms and hours by residence in the College. In order, however, to obtain the degree of Bachelor of Arts he must have been in residence at least two terms in the College of Arts and Sciences, and in that College only.

5. A student must register for at least twelve hours each term and may not receive credit in any term for more than eighteen hours of the required one hundred and twenty.

6. If the head of a department in the College of Arts and Sciences certifies that a course in another college is essential to the prosecution by a student of courses offered in his department, the student may, upon approval by the Faculty, be allowed to elect such course. But any student who avails himself of the foregoing privilege shall have the number of hours that he may take in any other college under the provisions of paragraph 7 correspondingly reduced, and under no circumstances will he be allowed to take more than thirty hours under the provisions of this paragraph.

7. A student who has satisfied at least six terms of residence, no one of them under the provisions of paragraphs 2 or 3, and who has a credit of at least ninety hours, may, with the permission of the Faculties concerned, be registered both in the College of Arts and Sciences and also in any other college of Cornell University.

LIST OF COURSES OPEN TO FRESHMEN.

The following list comprises the courses of instruction open to election by freshmen in the College of Arts and Sciences without special permission. They may not register in any other course until the written consent of the professor in charge of the subject is presented to the Registrar. Freshmen desiring advice regarding the selection of studies are invited to confer with the Dean at 10 A, Morrill Hall.

Semitic Languages and Literatures.—Courses 1, 6, and 8.

Greek and Archæology.—Courses 1, 2, 3, 19 and 20, and as stated, 27 and 28.

Latin.—Courses 1, 2, 3 and 5.

Germanic Languages.—Course 1, and under certain restrictions, courses 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13 and 14.

Romance Languages.—Course 1, and under certain restrictions, courses 2, 3, 8, 10, 12, 15, 20, 24, 30 and 40.

English.—Courses 1 and 21.

History.—Courses 1 and 15.

Political Science.—Courses 39a and 39b.

Bibliography.—Courses 1 and 2.

Mathematics.—Courses 6, 7, 8 and 9.

Physics.—Course 1. Course 56 [if advanced mathematics has been accepted at entrance].

Chemistry.—Course 1. If Introductory Inorganic Chemistry has been accepted at entrance, Course 6, or 7. If Course 1 is taken in the first term of the Freshman year Course 6 or Course 7 may be taken in the second term.

Botany.—Courses 1, 2 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 1a, 1b, 2, 21.

Military Science.—Course 3.

Related Courses in Another College.

Courses mentioned under this heading in the Announcement of Courses in the College of Arts and Sciences are open to students in that college only under the provisions of paragraph 6 or paragraph 7 of the requirements for the degree of Bachelor of Arts. (See page 88.) These courses include a few offered by members of the Faculty of Arts and Sciences in another college, and exclusively for its students.

Thesis.

If a senior elect to write a graduating thesis, it must represent some phase of his principal line of work during the later years of his course. The subject must receive the written approval of the professor in charge of the study to which it relates, and a memorandum of the title and of such approval must be left with the Registrar not later than the fifteenth day of October. The thesis must have the character of a scholarly dissertation on the subject chosen; and if accepted it will entitle the writer to credit. The copy of the thesis presented to the Faculty shall become the property of the University. A standard form and size for theses, eight by ten and one-half inches, has been adopted.

DEPARTMENTS OF INSTRUCTION.

[*Unless otherwise indicated, each course runs through the year. Courses enclosed in brackets will not be given in 1905–6, but may be expected in 1906–7.*]

SEMITIC LANGUAGES AND LITERATURES.

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 students who are not familiar with 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 Gilgamish 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 Caliphates of Damascus, Baghdad, Egypt, North-Western Africa and Spain.

The following courses will be given in 1905-1906 :

1. **Hebrew.** Grammar (Harper, Gesenius-Kautzsch, König). Exercises in composition. Genesis. M., W., F., 2. Professor SCHMIDT.

2. **Advanced Arabic.** Grammar. (Wright-DeGoeje and Arabic grammarians). Abu'l Farag and Ibn Chaldun. Composition of historical essays in modern Arabic. Study of squeezes of Arabic inscriptions. T., Th., 3. Professor SCHMIDT.

3. **Ethiopic.** Grammar (Dillmann-Bezold). The Book of Enoch. Selections from Ethiopic manuscripts. T., Th., 4. Professor SCHMIDT.

4. **Assyrian.** Grammar (Lyon, Delitzsch). Selections from Meissner's Chrestomatie, Harper's Code of Hammurabi and the Amarna Tablets. F., 4–6. Professor SCHMIDT.

5. **Coptic.** Grammar (Steindorff). Gnostic texts and inscriptions. W., 4–6. Professor SCHMIDT.

6. **Semitic Literature.** General introduction to the Old Testament and special introductions to each book. The Apostolic Fathers, and the Gnostic writings preserved in Coptic, Syriac and Greek. This course of lectures presupposes no knowledge of Oriental languages or Greek and is designed to give in brief compass the results of scientific inquiry concerning the origin, date, composition and character of the books discussed. M., W., 3. Professor SCHMIDT.

7. **Semitic Seminary.** Study of squeezes of inscriptions secured in Syria during the year 1904–1905, published Minaean, Sabaean, Safaitic and Kufic inscriptions, and Arabic geographers. M., 4–6. Professor SCHMIDT.

8. **Oriental History.** Syria from the earliest times to the present day. The lectures will be illustrated throughout with stereopticon views from photographs taken in Syria during 1904–1905. T., Th., 2. Professor SCHMIDT.

9. **Geography and Antiquities of the Semites.** Particular attention will be given to the topography of Syria. F., 3. Professor SCHMIDT.

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, courses 1 and 2 are especially adapted. For those who propose to be teachers, courses 3 and 4 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 Sanscrit 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. **Introduction to the Study of Language.** Language as speech. The elements of phonetics. The analysis of sounds in English, Greek and Latin. The life and growth of language. Changes in form and meaning. The languages of the Indo-European family. Their classification and relations to one another, with special reference to Greek, Latin, and English. The origin and early history of the alphabet. Outline history of linguistic science, and of the "comparative method" in language study. First term. M., W., F., 11, *White 3B.* Professor BRISTOL.

2. **Linguistic Study of the Germania of Tacitus.** The Germania will be studied as the earliest extended account of the peoples of Teutonic stock and of their life and habits. Introductory to this and supplementing it the following topics will be taken up: Linguistic evidence in the determination of questions of race aud culture; linguistics and archæology; the earliest civilization of the "Indo-European" people; pre-history as evidenced by language. Second term. Two hours, Monday, 7:30 P. M. Professor BRISTOL.

These courses are designed for students of either ancient or modern languages who wish to know something of the general principles of the science of language and of the history of that science. Further for students of history who may be interested in questions on the border line of history and linguistics. They are open to graduates and to properly qualified seniors. Either course may be elected alone if desired.

[3. **Comparative Grammar.** The phonology and morphology of the Indo-European family of languages. Historical and comparative treatment of sounds and inflections with special reference to Greek, Latin and Germanic. First term. M., W., F., 11, *White 3B.*]

[4. **Elementary Sanskrit..** Perry's Primmer and Lanman's Reader. The course is designed to meet the needs of students in classical and in Germanic philology. Two hours a week. Time to be fixed after consultation.]

[5. **Vedic Sanskrit.** The reading of selected hymns. Study of Vedic language and religion. Once a week.]

Historical Grammar of the Latin Language. T., Th., 16. See Latin course 41 (page 104).

Germanic Philology. T., Th., S., 11. See German course 17 (page 108).

Romance Philology. S., 9. See Romance Languages course 15 (page 111).

Old English Philology. M., W., F., 9. See English course 15 (page 115).

GREEK AND ARCHÆOLOGY.

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, a course in Aristophanes, a course in Plato, a course in Pausanias, a course in Tragedy, and a course in the rapid reading of Sophocles, Euripides, and Aeschylus. Besides these the study of some one Greek author is taken up in alternate years in the Seminary.

2. The antiquities. Course 24 treats of the entire equipment and environment of ancient Greek life, its usage and occupations, its ideas and institutions. Courses 22 and 23 are given in alternate years and give a consecutive account of Greek Literature down to the time of Justinian. Courses 27 and 28 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 modern literatures. The department of Classical Archæology offers also courses in Greek art and archæology, and in epigraphy.

3. The language. Two courses in Advauced 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 need 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.

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 20, 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 Archælogical Seminary is intended primarily for those who desire specializing work in Greek architecture and Greek epigraphy. Courses 15, 18, 19 and 21 will prepare for the examinations for the fellowships of the American School of Classical Studies in Athens. Courses 25, 27 and 28 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. **Elementary Greek.** Forman's First Greek Book. The essentials of the grammar. Simple exercises in composition. The reading of Xenophon's Anabasis, books I–IV. Selections from the New Testament. M., T., W., Th., F., 8, *White 3B*. Dr. FORMAN.

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.

2. **Homer, Plato.** The reading of books V–XII of the Odyssey, with selections from the last twelve books. Discussions of topics connected with the subject matter. First term. T., Th., S., 10, *White 4*. Professor BRISTOL. Selections from some of the simpler dialogues of Plato as introduction to Greek philosophical literature. Second term. T., Th., S., 10, *White 4*. Dr. FORMAN.

Open to Freshmen who have presented Greek at entrance.

3. **Lysias, Herodotus.** Reading of selected speeches of Lysias as illustrative of normal Attic prose. Introduction to Attic oratory. First term. M., W., 10, *White 3B*. Dr. FORMAN. Herodotus, selections from books VI–IX, the story of the war with the Persians. Second term. M., W., 10, *White 3B*. Professor BRISTOL.

This course is intended to supplement the work of Course 2, and may be elected by any one taking that course. It thus affords an opportunity for Freshmen to take five hours of Greek. It may be elected for either term or for the entire year.

4. **Plato, Aeschylus.** The reading done in Course 2 in the previous year will be continued and most of the Protagoras included. After Thanksgiving the Prometheus Bound will be studied. First term. M., W., F., 9, *White 3B*. Professor BRISTOL.

Open to students who have passed in Course 2.

5. **Euripides, Sophocles.** The Iphigenia in Tauris 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 term. M., W., F., 9, *White 6*. Professor STERRETT.

Open to students who have passed in Course 2.

6. **Greek Composition.** This course is based on a systematic and practical study of Greek grammar, and leads to Course 35. One hour, at a time to be arranged with the students. Dr. FORMAN.

Open to students who have passed in Course 2.

6B. **Hellenikos Syllogos.** The work will consist of conversation, essays, declamations and dramatic representations. One hour, at a time to be arranged. Dr. FORMAN.

Open to students who have passed in Course 2.

7. **Herodotus.** Reading of book I with special reference to local history, topography, and antiquities. First term. M., W., F., 10, *White 6*, Professor STERRETT.

Open to students who have passed in 2, 4, and 5, and to those who have passed in 2 and are taking 4.

8. **Demosthenes.** Selected speeches will be studied to illustrate the life and work of Demosthenes as lawyer, statesman, and artist in prose. T., Th., 11, *White 3B*. Professor BRISTOL.

Open to students who have passed in courses 2, 4, and 5; or in 2 and 3; or in 2 and are taking 4.

9. **Reading Course in the Larger Greek Literature.** Through specimen readings the student will obtain a first hand acquaintance with writers from Homer to the time of Constantine. Two hours, to be arranged. Dr. FORMAN.

[10. **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.

11. **The Tragedy.** Aeschylus, Agamemnon; Sophocles, Oedipus Coloneus and Antigone; Euripides, Hippolytus and Bacchae. T., Th., 11, *White 6*. Professor STERRETT.

Open to seniors and graduates.

[12. **The Orations of Thucydides**: Studied (1) as a product of early Greek Oratory, (2) as an exposition, in concrete connection, of the principles of universal politics. One hour. Open to graduates. Dr. FORMAN.]

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

Open to seniors and graduates.

14. **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. The following outline cycle of reading is based on the work done in previous years; 1905–'06, all of the Iliad and as much as possible of the Odyssey was read; in 1906–'07, Epinician and Idyllic poetry will be read (all of Pindar, Bacchylides, Theocritus, Bion, Moschus); in 1907–'08, tragic poetry will be read (all the plays of Sophocles, three (or four) of Aeschylus, two (or one) of Euripides; twelve tragedies in all). M,, 2–4, *White 6.* Professor STERRETT.

Open to graduates and only by special permission to seniors.

The Republic of Plato. Reading of the Greek text. T., Th., S., 9. See Philosophy, course 46.

Aristotle's Ethics. Reading of the Greek text. M., 11 (or other hour to be arranged). See Philosophy, course 45.

15. **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, Thucydides and Herodotus. T., Th., 9, *White 6.* Mr. ANDREWS. Open to all students who have completed courses 2–5, inclusive.

16. **New Testament Greek.** First half-year. Reading and interpretation of the Gospel according to Matthew. Second half-year. Selections from the Pauline Epistles. W., F., 8, *Barnes Hall Library.* Dr. A. C. WHITE.

17. **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 course 1.

18. **Greek Archæology.** Lectures and readings. Mycenæan art and civilization, Greek terra cottas, 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.

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

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

21. **Archæological Seminary.** Greek epigraphy. First half-year. Greek epichoric alphabets and dialectical inscriptions. Sec-

ond half-year, Attic inscriptions. The large collection of paper impressions of inscriptions will be used. M., 3–5, *White 3a*. Mr. ANDREWS.

[22. **Greek Literature.** Lectures. A history of the development of the poetical literature in connection with the political and social history of the people. W., F., 12, *White 6*. Professor STERRETT.]

This course is open to all students of the University except Freshmen.

23. **Greek Literature.** A lecture course covering the history of the prose literature of the classical period, and of the post-classical literature in general. W., F., 12, *White 6*. Professor STERRETT.

This course is open to all students of the University except Freshmen.

[24. **Physical and Historical Geography of Greece.** The first term will be devoted to a discussion of the physical geography, the fauna and flora, the population in ancient times, the characterization of the ancient Greeks, the modern state, the modern Greeks, their lineage, and the traces of ancient Greece in the modern customs, manners, and usages. The second term will be devoted to a systematic study of the historical geography and topography. In this term the stereopticon will be used as occasion requires. T., Th., 10, *White 6*. Professor STERRETT.]

This course is open to all students of the University except Freshmen.

[25. **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.]

This course is open to all students of the University except Freshmen.

26. **Greek Politics.** M., W., 9. See History, course 2.

[27. **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, basreliefs, sculpture in the round, gems and coins. First half-year, W., F., 12, *White 6*. Professor STERRETT.]

Open to students who have entrance Latin.

[28. **Myths of the Theban and Dionysiac Cycles.** A lecture course illustrated by lantern views as in course 27. Second half-year. W., F., 12, *White 6*. Professor STERRETT.]

Open to students who have entrance Latin.

35. **Advanced Greek Composition.** In connection with the reading of Xenophon's Anabasis. S., 12, *White 3B*. Dr. FORMAN.

[36. **Course in Homer for Teachers.** The work of the course will center in the Iliad, and will consist of three parts:

(a) The reading and interpretation of selected portions of the Iliad.

(b) The study of the language of the poem and its relations to the Attic dialect; the epic hexameter, its origin and development; the principles of interpretation; the value of archæology for the understanding of the poem; aims and methods of translating; English translations since Chapman.

(c) Discussions on the teaching of Homer; the end to be kept in view; practical difficulties in the work. The most valuable books and other auxiliary helps for the teacher. T., Th., 12, *White 3B*. Professor BRISTOL.

Seminary in Greek and Roman History. Th., 4–6, or at another hour, as may be arranged. See History course 5.

[36. **Historical Grammar of Greek.** The Greek dialects, and their relations to kindred tongues and to one another. Development and normalizing of these forms in literary use. History of the Greek alphabets. Historical treatment of sounds and inflexions. M., W., 10, *White 3B*. Professor BRISTOL.]

Open to graduates and to properly qualified Seniors.

40. **Greek Seminary.** In 1905–'06 the work will deal with the more recent theories in regard to Homeric questions. Papers will be prepared and discussed by the members of the Seminary. W., 2–4, and an additional hour at the pleasure of the instructor. *Seminary Room*. Professor STERRETT.

Open to graduates.

LATIN.

The reading courses are as follows:

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

Course 8, the regular sophomore reading course, open to those who have had course 1.

Courses 16 and 17, the regular junior and senior reading courses, open to those who have had courses 1 and 8, or 1 and 11 (12).

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

Courses 11 and 12, sophomore electives, intended primarily for those who are taking course 8, but open to all who have taken course 1.

Courses 4, a, b, must be taken to make up an entrance deficiency in Cicero or Virgil.

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

Course 4c, must be taken by all students conditioned in Latin composition at entrance, except those who are taking course 1.

1. **Livy, Book I; Cicero, De Senectute; Horace, Selections from the Odes and Epodes; Latin Writing.**

Section 1. M., W., F., 9, *Morrill 3*. Professor BENNETT.
Section 2. M., W., F., 10, *Morrill 3*. Dr. WATSON.
Section 3. M., W., F., 11, *Morrill 3*. Dr. WATSON.
Section 4. M., W., F., 11, *Stimson B*. Mr. HARRIS.

2. **Sight Translation: Caesar, Civil War; Plautus, Amphitruo.**

Section 1. T., 12, *Morrill 21*. Mr. HARRIS.
Section 2. W., 12, *White 4*. Dr. WATSON.
Section 3. F., 12, *White 4*. Dr. WATSON.
Section 4. S., 10, *Morrill 3*. Mr. HARRIS.

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

[3. **Sight Translation: Cicero, Tusculan Disputations, Book I; Plautus, Menaechmi.** Courses 2 and 3 are given in alternate years.]

4a. **Cicero, Selected Orations.** T., Th., S., 12, first half year. *Morrill 21*. Mr. HARRIS.

4b. **Virgil's Aeneid, Books I-VI.** T., Th., S., 12, second half year, *Morrill 21*. Mr. HARRIS.

4c. **Latin Composition.** M., 12, throughout the year, *Morrill 21*. Mr. HARRIS.

Students who have an entrance condition in Cicero, Virgil or Latin Composition are required to make up that deficiency by taking the corresponding part (a, b or c) of course 4. Open, by permission, also to qualified students who do not present Latin at entrance.

5. **Cicero, De Senectute; Horace, Selections from the Odes.** M., W., F., 10, second half year, *Morrill 21*. Assistant Professor ELMER.

Open to all qualified students. This course has been specially established for those desiring to begin their study of Latin at the opening of the second semester.

6. **Tacitus, Germania and Agricola.** T., Th., S., 10, second half year, *Morrill 21*. Dr. WATSON.

Open only to those students who have had at least one-half year of Latin in the University.

8. **Catullus; Virgil, Georgics; Horace's Satires and Epistles; Ovid, Selections from the Tristia, Amores, and Fasti; Phaedrus; Martial.** T., Th., S., 9, *Morrill 21*. Dr. WATSON.

Open to students who have completed course 1.

[11. **Selections from Cicero's Letters; Cicero, De Oratore, Book I.** Assistant Professor ELMER.

Open to students who have completed course 1.

Courses 11 and 12 are given in alternate years.]

12. **Selections from Cicero's De Officiis; Cicero's Second Philippic.** W., F., 11, *Morrill 21*. Assistant Professor ELMER.

Open to students who have completed course 1.

[16. **Selections from the Republican Literature; Plautus,** two plays. **Lucretius. Lectures on the History of Roman Literature.** Professor BENNETT.

Open to students who have completed courses 1 and 8, or 1 and 11 (12).

Courses 16 and 17 are given in alternate years.]

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

Open to students who have completed courses 1 and 8, or 1 and 11 (12).

21. **Intermediate Course in Latin Writing.** Open to students who have completed course 8, or 11 (12). M., 11, *Morrill 21*. Assistant Professor ELMER.

22. **Advanced Course in Latin Writing.** For students who have completed course 21, or an equivalent elsewhere. S., 11, *Morrill 21*. 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; Practical work in Cicero. Professor BENNETT.

b. **Cicero.** This course is intended primarily for those prospective teachers in preparatory and high schools who desire an accurate knowledge of Cicero's orations. The Catilinarian orations will be studied carefully with reference to all the points that should be emphasized in elementary instruction. Professor BENNETT.

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

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

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

Courses 26a and 26b alternate with course 27.]

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.

31. **German Philological Reading.** Reading of Schanz, Geschichte der römischen Litteratur. For juniors, seniors, and graduates. S., 12, *Morrill 3*. Assistant Professor ELMER.

The object of the course is to familiarize students of Latin, Greek, and Comparative Philology with the style, vocabulary, and character of modern German philological investigations. Students desiring to take this course are requested to confer with the instructor at as early a date as possible, in order that the necessary books may be ordered in due season.

[34. **Cicero, in Verrem (Fourth Oration of the Actio Secunda).** Assistant Professor ELMER.

Courses 34 and 35 are given in alternate years.]

35. **Virgil, Aeneid VII–XII.** This course requires no prepared translation for the classroom work. The professor in charge will himself translate the last six books of the Aeneid, with full comments on subject-matter, style, difficulties, etc. The members of the class will endeavor merely to read the original Latin as Virgil himself would have read it. The especial aim of this course will be to develop in students the ability to understand and appreciate the Latin without translating. Open to graduates, seniors and juniors, and especially recommended to members of the Pro-Seminary. Th., 11, *Morrill 3*. (The hour can be changed to suit the convenience of students who have conflicts.) Assistant Professor ELMER.

See under 34.

[36. **Latin Pro-Seminary.** 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 who may not be intending to take graduate courses.

Open to graduates, seniors, and by special permission to juniors; but the number of the Pro-Seminary is limited to ten. M., 3, *Greek and Latin Seminary.* Assistant Professor DURHAM.

Courses 36 and 37 are given in alternate years.]

37. **Latin Pro-Seminary, Virgil.** 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. Open to graduates, seniors, and by special permission to juniors; but the number of the Pro-Seminary is limited to ten. M., 4-6, *Greek and Latin Seminary Room.* Assistant Professor ELMER.

For the general objects which the pro-seminary has in view, see under course 36.

38. **Latin Seminary.** The work of the seminary for 1905-1906 will consist of the textual and exegetical study of a play of Plautus combined with the rapid reading of the most important of Plautus's remaining plays.

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 who 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.* Professor BENNETT.

[39. **History, Scope, and Aim of Latin Study.** This course will present the history of classical study 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. Professor BENNETT.]

Not given in 1905-6

[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, *Greek and Latin Seminary.* Professor BENNETT.

Courses 40 and 41 are given in alternate years.]

41. **Historical Grammar of the Latin Language.** For juniors, seniors, and graduates. T., Th., 10, *Morrill 3*. Professor BENNETT.

42. **Latin Epigraphy.** Introductory lectures and the interpretation of selected Latin inscriptions. For juniors, seniors, and graduates. T., Th., 12, *Morrill 3*. Dr. WATSON.

Latin Palæography. T., 3. See History, course 12b.

Roman History. M., W., F., 11. See History, course 1.

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 German 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.

Easy narrative and descriptive prose is read, the object being to impart facility in translation in connection with accurate grammatical knowledge, and at least one classical drama. 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, Modern Danish, 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 class-room methods 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 acquisition of the Zarncke library, which 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 leaves 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 is for beginners in German, and for those who have not already passed the entrance examination in Elementary German.

Course 2 is 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.

Courses 3–14, are open, under the restrictioas 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, 6, 7, 8, 9, 10, 11, 12, 13 and 14 are open to Freshmen, whose previous study qualifies them for this work.

Elementary Courses.

1. **Elementary Course in German.** Grammar, Hewett's German Reader. The principles of German pronunciation, inflexions, rules of syntax, rewriting of easy exercises in German, and memorizing familiar poems.

Section 1—T., Th., S., 9, *Morrill 13*. Dr. BOESCHE.

Section 2—M., W., F., 10, *Morrill 6*. Dr. POPE.

Section 3—M., W., F., 11, *Morrill 5*. Dr. BOESCHE.

2. **Second Year.** Freytag's Journalisten, Hauff's Lichtenstein, Schiller's Maria Stuart.

Section 1—M., W., F., 9, *Morrill 5*. Assistant Professor FAUST.

Section 2—T., Th., S., 10, *Morrill 13*. Dr. POPE.

Section 3—M., W., F., 10, *Morrill 5*. Assistant Professor FAUST.

This course includes the reading of narrative and descriptive prose, which will impart facility in translation, also the careful reading of selections from the easier and more attractive classical literature. Advanced grammar, syntax, the use of the moods in main and depen-

dent sentences, the derivation and composition of words, the force of prefixes and suffixes and of synonyms will be studied.

2a. **German 1 and 2.** This course is offered to students exceptionally well prepared in other subjects to enable them to complete the entire elementary German in one year, thus qualifying them to enter earlier upon the study of advanced German literature or to pursue special reading in German, in history, or in science. Daily except S., 9, *Morrill 6*. Dr. POPE. Upon completing successfully this course, students will be credited with two full courses of three hours each. Students who have previously finished German 1 can enter this course in February, at the beginning of the second half-year. The course of study will be the same as that announced for German 1 and 2.

3. **Elementary German Composition.**

Section 1—M., W., 12, *Morrill 5*. Dr. BOESCHE.

Section 2—T., Th., 12, *Morrill 5*. Dr. BOESCHE.

Open to students who have had Course 1.

Students are advised to take this course in connection with German 2 as a preparation for admission to advanced work.

B—Advanced Courses primarily for Undergraduates.

4. **Advanced German Composition.** S., 10–12, *Morrill 5*. Second half-year. Assistant Professor FAUST. This course will be conducted in German. Open only to students who have had Courses 1–3, and to others by special permission of the instructor. Candidates for Teachers' Certificates must have had the equivalent of Courses 3 and 4.

5. **Schiller's Writings—Advanced Course.** Schiller's Prose; Egmont's Leben und Tod, Die Belagerung von Antwerpen, and selections from Der dreissigjährige Krieg. First half-year, M., W., F., 10, *Morrill 13*. Professor HEWETT.

This course will be illustrated with lantern views of the actors and events described. Open to students who have had Courses 1–3.

6. **Outline Course in the History of German Literature from its Beginning to the Reformation.** For students in general courses. Recitations and readings. First half-year, T., Th., S., 9, *Morrill 5*. Assistant Professor FAUST.

This course is recommended as affording a concise survey of the various periods of German literature and the representative writers and their works. It is recommended to all students properly prepared, especially to teachers and others making a special study of German.

7. **Schiller's Writings.** Historical Dramas, Wallenstein, Die Jungfrau von Orleans, and Die Braut von Messina. M., W., F., 10, *Morrill 13*. Second half-year. Professor HEWETT. Illustrated with lantern views. Open to students who have had courses 1–3.

8. **Rapid Reading.** Numerous works giving a wide acquaintance with modern writers, will be read. The aim of this will be primarily to impart facility in translation, and at the same time, familiarize the students with representative writers of the nineteenth century. Open only to students who have completed courses 1–3 and one full reading course. T., Th., 10, *Morrill 5*. Assistant Professor FAUST.

9. **Goethe's Poems studied in relation to his Life.** Also his Italian Journey and the dramas associated with it. Illustrated by lantern views of scenes associated with Goethe's life and travels. Open to students who have had courses 1–3 and one full course in German classical literature. First half year. M., W., F., 11, *Morrill 13*. Professor HEWETT.

10. **German Lyric and Ballad Poetry and Folksongs.** Ballads from German history will be read, and these will be studied in connection with similar English and Scotch ballads. Second half-year. T., Th., S., 9, *Morrill 5*. Assistant Professor FAUST.

11. **Goethe's Faust.** Part I and selections from Part II. This course will be illustrated with lantern views illustrating the poem and the Faust legend. Open to students who have had courses 1–3 and one full reading course. Second half year. M., W., F., 11. *Morrill 13*. Professor HEWETT.

12. **Lectures in German on German Literature in the Nineteenth Century.** Later Romanticism, the Revolutionary period, the historical and political direction, the modern social, psychological and realistic novel and drama. Open to students who have had courses 1–4, and 7 and 11 or their equivalent. Second half-year. T., Th., S., 11, *Morrill 13*. Dr. BOESCHE.

13. **Teacher's Course.** A general review of German grammar, historical and comparative syntax, synonyms, etymology, characteristics of German style, development of poetical forms, meter. Theories of instruction in the modern languages. Second half-year. T., Th., 2:30, *German Seminary*. Professor HEWETT. Open to students who have had courses 1–4, 14, and two full reading courses in German literature. Courses 13 and 15 may be counted for Teacher's Certificate.

14. **German Conversation.** Experimental Course. The recent Reform method of instruction in the modern languages used in Germany will be adopted. The number of students in this course will be limited to twenty-five. Open only to students who have had courses

1, 2, 3 and one full course in German literature, by special application to the instructor. This course will be especially useful to teachers. It must be taken in connection with one full reading course, and if possible, with German Composition. First half-year. T., Th., S., 11. *Morrill 13*. Dr. BOESCHE.

Primarily for Graduates aud Advanced Students.

5. **German Literature from Luther to Klopstock.** Especial attention will be paid to the drama of the Reformation and of the seventeenth century. First half-year. T., Th., 2:30. *German Seminary*. Professor HEWETT.

This course is for graduates and advanced students. It will be of especial value as an introduction to the Teacher's Course of the second half year, as the language of the period and its relation to modern forms and inflexions will be studied.

16. **Elementary Middle High German.** The popular epics: Nibelungenlied and Kudrun; German prose in the twelfth and thirteenth centuries. M., W., F., 11, *Morrill 6*. Dr. POPE.

17. **Introduction to General Germanic Philology and Phonology.** Elementary phonetics with special reference to German pronunciation and the laws of linguistic change. The historical development of the German language. The dialects. Formation of Modern High German. This course is based on Behagel's "Die deutsche Sprache" (2nd ed.) and Geschichte der deutschen Sprache, in Paul's Grundriss, Vol. 1, (2nd ed.) For teachers and advanced students. For admission, students should have had at least Courses 1–4, and two full reading courses, also one course in historical German, either Gothic, Old or Middle High German or Early English. First half-year. T., Th., S., 12, *Morrill 6*. Dr. POPE. This course may be counted for credit for Teachers' Certificates.

18. **German Literature from the Twelfth Century to Luther: Middle High German.** Advanced course. Lectures and readings from the Court Epics; Hartmann von Aue, Gottfried von Strassburg and his relations to French sources and to the later Arthurian legends, as contained in the writings of Tennyson, Morris and Matthew Arnold. First half-year. For graduates and advanced students. T., Th., S., 11, *German Seminary*. Assistant Professor FAUST.

19. **Old High German and Old Saxon.** Braune's Althoch. deutsches Lesebuch. Early forms of German verse. T., Th., S., 12. *Morrill 6*. Second half-year. Dr. POPE. For graduates and advanced students of German literature. Admission upon special application.

20. **Modern Danish.** A course in the modern literature of the North of Europe. Recitations and lectures. First half-year. M., W., F., 2:30, *German Seminary*. Mr. HERMANNSSON.

21. **Historical and Comparative Grammar of the Germanic Languages,** including phonology and morphology. Lectures and discussions. This course will be based on Streitberg's Urgermanische Grammatik. (2nd ed.), Kluge's Vorgeschichte der altgermanischen Dialekte in Paul's Grundriss, Bd. 1, (2nd ed.) For graduate and advanced students who have had Gothic, Old or Middle High German or Early English. (Omitted in 1905–06.)

22. **Old Norse.** Recitations and lectures; continuation of Course 20. For graduate and advanced students of the Germanic languages. Second half-year. M., W., F., 2:30 P. M., *German Seminary*. Mr. HERMANNSSON.

23. **Reading and Discussion of Current Reviews, and Criticisms of Recent Works.** S., 9, *German Seminary*. First half-year. Dr. BOESCHE. Second half year. Dr. POPE.

The first half-year will be devoted to current publications in literature, the second half-year to philology and the discussion of the educational reviews.

Gothic with Lectures on General Germanic Philology. M., W., F., 9. See English Course 15. (Page 115.)

Introduction to the Study of Language. First term. M., W., F., 11. See Comparative Philology, course 1. (Page 92.)

Candidates for the doctor's degree in Germanics are advised to include at some time Course 1, under Comparative Philology, as a part of their preparation for examination.

26. **Elementary German Conversation.** F., 12. *Morrill 5*. Dr. BOESCHE. Open to all students of German.

The Deutscher Verein, a club composed of the instructors in German, graduate students, and others especially qualified, will meet twice a month for the reading of original investigations, for discussions and reports upon recent publications in the field of Germau literature and philology, 8 P. M. *Trophy Room, Barnes Hall.* The Gesellschaftsabende are open to all students in the German department for social intercourse, music and German conversation.

General Lectures upon German institutions, art and life, the history of German Universities, and the works of special authors will be given before the German department by members of the Faculty and others. These will be given in the evening, at times to be announced during the year.

Candidates for Teachers' Certificates must have had Courses 1–4, 13 and 15, and the equivalent of two full courses in German literature.

THE ROMANCE LANGUAGES.

Instruction in French during the first year is essentially the same for all 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 to 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.

There are three courses offered in Spanish, an elementary course of grammar and reading the first year, followed by a course in modern Spanish literature and one in such classical authors as Cervantes, Calderon, and Lope de Vega. Either of these advanced courses may be taken the second year.

The courses in Italian are of two years. The grammar is rapidly studied the first term, and reading begun in the second. In the second year more advanced works are read; 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 is for beginners in French, and for those who have not already passed the entrance examination in Elementary French. Course 2 is 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, 10, 12, 15, 20, 24, 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, 8, 10, 12, 15, 20, 24, 30, 40, are open to Freshmen. Courses 1, 30, 40, beginning courses in French. Italian and Spanish, are continuous through the year, and credit will not be given for the first term only.

1. **French Grammar and Reading.** Fraser and Squair's Abridged French Grammar. Guerlac's Standard French authors.

Section 1—M., W., F., 9, *White 13*. Mr. MURRAY.

Section 2—M., W., F., 10, *White 13*. Dr. LODEMAN.

Section 3—M., W., F., 12. *White 13*. Dr. LODEMAN.

Section 4—T., Th., S., 10, *White 13*. Assistant Professor GUERLAC.

Section 5—T., Th., S., 11. *White 10*. Mr. MURRAY.

2. **Second Year's French.** Victor Hugo's Les Misérables (Super), Cameron's Tales of France, Kuhn's Selection from the Poetry and Comedies of Alfred de Musset.

Section 1—M., W. F., 11, *White 11*. (First half year.) Assistant Professor GUERLAC. (Second half-year. Mr. MURRAY.

Section 2—M., W., F., 12, *White 10*. Assistant Professor GUERLAC.

Section 3—T., Th., S., 9, *White 13*. Dr. LODEMAN.

3. **French Literature of the Eighteenth Century.** Prose and verse of the classic writers of the century, including reading of plays by Voltaire, Marivaux, etc. M., W,, F., 9, *White 10*. Professor CRANE.

Open to all who have had advanced entrance French.

5. **Romance Seminary.** Petrarch and the Elizabethan sonnet. S., 10–12, *French Seminary Room*. Professor CRANE.

Open only to graduate students.

8. **French Langnage and Literature of the Sixteenth Century.** T., Th., 10. (Second half-year.) *White 11*. Assistant Professor OLMSTED.

Open to those who have studied French at least three years, and who have some knowledge of Latin.

10. **French Literature of the Seventeenth Century.** Prose of the classic writers of the century, including readings of plays by Corneille, Racine and Molière. T., Th., 11. (Second half-year.) *White 11*. Assistant Professor OLMSTED.

Open to those who have had advanced entrance French.

12. **Rapid sight reading.** Conducted in French. The object of the course is to impart facility in the reading and understanding of French as French without translating. W., F., 10. (Second half-year.) *White 11*. Assistant Professor OLMSTED.

Open to those who have had advanced entrance French, and who can read and understand French readily.

15. **Origin and Development of the French Language and Literature down to the Sixteenth Century.** Lectures. S., 9, *White 10*. Mr. MURRAY.

Open to those who have had advanced entrance French, and entrance Latin.

17. ***French Phonetics, Old-French Texts, etc.** M., W., 10, *French Seminary Room*. Mr. MURRAY.

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

20. **French Fiction and Drama of the Nineteenth Century.** Rapid reading, lectures and reports in French. T., S., 12, *White 13*. Assistant Professor GUERLAC.

Open to those who have had advanced entrance French.

22. **Lectures in French.** La Littérature du XVIII^e^ siècle dans ses rapports avec le movement politique et social. Th., 12, *White 13*. Assistant Professor GUERLAC.

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

24. **Elementary French Conversation and Composition.** T., Th., S., 11, *White 13*. Assistant Professor GUERLAC.

Open to those who have had advanced entrance French and who, in the judgment of the instructor, are capable of pursuing the course with profit.

26. **Advanced French Conversation and Composition.** M., W., F., 11. (Second half-year.) *White 13*. Assistant Professor GUERLAC.

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

30. ***Italian Grammar and Reading.** T., Th., S., 8, *White 11*. Mr. MURRAY.

This course cannot be taken in the same year with course 40, and is open to those who have had advanced entrance French and entrance Latin.

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

Open to those who have had course 30.

40. **Spanish Grammar and Reading.**

Section 1—M., W., F., 11, *White 11*. (First half-year). Mr. MURRAY. (Second half-year.) Assistant Professor OLMSTED.

Section 2—M., W., F., 12, *White 11*. (First half-year). Mr. MURRAY. (Second half-year.) Assistant Professor OLMSTED.

Section 3—T., Th., S., 8, *White 10*. Dr. LODEMAN.

This course cannot be taken in the same year with course 30, and is open to those who have had advanced entrance French, German, or Latin.

42. **Modern Spanish Literature.** Valdés, Galdós, Alarcón, Echegaray, Bazán, Becquer, etc. T., Th., 12. (Second half-year.) *White 11*. Assistant Professor OLMSTED.

Open to those who have had course 40.

44. **Spanish Classics.** Modern Spanish authors the first half-year. Early Spanish classics the second half-year. M., W., 11, *White 10.* Dr. LODEMAN.

Open to those who have had course 40, or courses 40 and 42. Those desiring to continue the reading of modern authors the second half-year may change to course 42 for the second term.

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

ENGLISH.

The aims of the Department are threefold : I. Training in composition. II. Study of the growth of the language. III. Study of the literature. In all the courses there is much reading of texts. In courses 1–9, the aim of the reading is chiefly rhetorical ; in courses 11–15, grammatical ; in courses 17–48, interpretative. In courses 21–48, essays, reports, and other exercises in composition are required.

Courses 1, 9, 11, 12, 21, 39, and 48 must be continued through the college year.

Courses 9, 11, 12, aud at least three (including 21) of the literature courses are required of students who desire to be recommended to high-school teacherships of English.

Baccalaureate Theses. Seniors who have given evidence of their ability to do advanced work in literature or in language may be permitted to write baccalaureate theses. Permission should be obtained from the head of the department before the end of the junior year, and the thesis subject must be approved before October fifteenth of the senior year. Credit will be given, under the general Faculty regulation, for the completion of a satisfactory thesis.

I. Composition.

(Candidates evincing marked ability in the Cornell entrance examination in English are admitted to Courses 2a, 4b, and 6a without taking Course 1. Students admitted upon examination by the College Entrance Examination Board, and students admitted upon Regents' diplomas without entrance examination, may obtain the like privilege by submitting to a test in writing, upon familiar topics, some of which will be connected with the entrance books. The test will include not only exercises in composition, but also questions upon paragraphing and upon the technique of narration, description, and exposition. Held Monday, September 25, 1905, at 11 A. M., in the Library Lecture Room, and lasting two hours, this

test will not be treated as a University examination; no report will be made to the Registrar. The list of successful candidates will be posted on the bulletin boards by 9 A. M. on Tuesday, September 26.)

1. **English Composition.** Open to all students who have fulfilled the entrance requirement in English in the College of Arts and Sciences. Studies and regular practice in the technique of composition. A number of illustrative specimens, selected from masters of prose style, will be read by the class, and will serve, so far as is practicable, as models for themes and essays. Constant use will be made of Hart's Essentials of Prose Composition. Three hours.

The class will be divided into eight sections, as follows:

Section a—M., W., F., 12.	*White 1B.*	Dr. MONROE.
Section b—T., Th., S., 9.	*White 2.*	Dr. COOPER.
Section c—M., W., F., 10.	*White 18.*	Mr. COX.
Section d—M., W., F., 11.	*Stimson Hall.*	Mr. ADAMS.
Section e—T., Th., S., 11.	*White 1B.*	Assist. Prof. PRESCOTT.
Section f—M., W., F., 9.	*White 4.*	Mr. COX.
Section g—M., W., F., 10.	*Stimson Hall.*	Dr. ANDREWS.
Section h—M., W., F., 12.	*Stimson Hall.*	Mr. ADAMS.

The work of the course is under the general direction of Professor HART; the details of administration are in charge of Assistant Professor PRESCOTT.

2a. **Advanced Composition.** First term. Counts as three hours. Open to students who have had Course 1 and desire further training in literary expression. Practice in the writing of long and short themes, with frequent personal conferences. Two hours of attendance weekly are required. T., Th., 9. Room to be announced. Assistant Professor STRUNK (in charge). T., Th., 10. Room to be announced. Dr. MONROE. Dr. ANDREWS, Mr. COX.

4b. **Exposition.** Second term. Counts as three hours. Open to students who have had Course 1. Lectures on the selection and arrangement of material and on expository style; study of specimens; practice in composition. Two hours of attendance weekly are required. T., Th., 12, *White 2.* Assistant Professor PRESCOTT (in charge). M., W., 12, *White 2.* Assistant Professor NORTHUP. Dr. COOPER, Mr. ADAMS.

6a. **Argumentation.** First term. Open to students who have had Course 1. Lectures on the principles of argumentation; study of specimens; practice in composition. T., Th., S., 12, *White 2.* Assistant Professor PRESCOTT.

Note.—See Oratory 3a.

7b. **The Short Story.** Second term. Open (except by special permission) only to students who have had Course 2a. The study of

selected specimens ; weekly reports ; and frequent exercises in story-writing. M., W., 11. Room to be announced. Dr. ANDREWS.

9. **Rhetoric.** Primarily for the training of high-school teachers of English, but serviceable to all advanced students. A study of the history and general features of English prose and English poetry, with constant practice in writing and correcting papers. Open to students who have maintained good rank in Course 1 and 2a (or 4b). Good rank in Course 9 will entitle the student to count these hours towards the number requisite for a certificate in the Department of the Science of Education. M., W., F., 9, *Morrill 22*. Professor HART.

II. Language.

(Courses 11 and 12 are a general introduction to the history and present state of the language ; both are required of students who wish to be recommended to high-school teacherships of English. In each course there is enough text-reading to illustrate the periods of literature. Course 11 is required for further study of the literature anterior to the Elizabethan period, and is recommended in preparation for Course 15. Both courses are serviceable for the general student of languages.)

11. **Old and Middle English.** Open to students who have had Course 1 ; to others, by special permission. Readings and lectures. M., W., F., 11, *White 1B*. Dr. MONROE.

12. **The Development of Standard English.** Open to students who have had Course 11. Readings in Chaucer, Dunbar, Malory, and some early modern writers. Lectures on the rise of standard English and on the history of English inflections and syntax. T., Th., S., 10, *White 18*. Assistant Professor NORTHUP.

14b. **Old English Readings.** Second term. Open to students who have completed the Old English of Course 11 ; designed to give greater familiarity with the language, especially on the literary side. Study of selected texts in prose and in verse. T., Th., 12. Room to be announced. Dr. MONROE.

15. **Old English Philology.** For students engaged in the systematic study of the language. A knowledge of German is required for admission ; some knowledge of Greek and Latin is also desirable. Students are also advised to take Course 11 in preparation. The phonology and inflections, first of Gothic, and then of Old English. Text-books, Wright, Gothic Primer ; Bright, Anglo-Saxon Reader. Lectures on the relations of English to cognate languages. M., W., F., 9, *English Seminary Room*. Assistant Professor STRUNK.

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

17a. **Introduction to English Philology.** First term. Counts as three hours. Open to Seniors and graduates who have had Course 11 or its equivalent. A reading knowledge of French and German is also required. Lectures on the more important branches of scholarship connected with the study of the English language and literature and on the chief books and methods to be examined. Assigned readings, reports, and discussions. T., 2:30-4:30, *English Seminary Room*. Assistant Professor NORTHUP.

III. Literature.

21. **Introductory.** Open to all students who have fulfilled the entrance requirement in English. An elementary survey of English literature from the Renaissance to modern times. Readings and lectures.

Section a. T., Th., 10, *White 2.* Assistant Professor STRUNK (in charge).

Section b. T., Th., 11, *White 2.* Assistant Professor NORTHUP.

Section c. T., Th., 12, *White 1B.* Mr. ADAMS.

Section d. T., Th., 11, *White 4.* Dr. MONROE.

Section e. T., Th., 9, *White 1B.* Dr. ANDREWS.

Special Announcements.

In general the courses above 21 are open, with the permission of the instructor in charge, to students who have had Course 21 or its equivalent.

Not more than two courses may be taken in the same year, except by permission of the head of the department.

39. **The Early English Drama.** Open to students who have had Courses 11 and 21 and as much Latin as is required for admission. Lectures on the origin and development of the church plays in the Middle Ages; readings in Pollard, English Miracle Plays, Moralities, and Interludes, with a fuller study of one of the great English cycles, either the York or the Towneley. M., W., F., 10, *Morrill 22.* Professor HART.

37a. **Shakespeare.** First term. A study of Shakespeare's life and work, with reading of six representative plays. M., W., F., 10, *White 2.* Assistant Professor STRUNK.

37b. **English Literature, Spenser to Milton.** Second term. A study of the principal writers from 1579 to 1660, with the addition of Milton's further work, but omitting Shakespeare. M., W., F., 10, *White 2.* Assistant Professor STRUNK.

38a. **English Poetry, 1660–1750.** First term. A study of the poets, showing the rise and dominance of the classical spirit, particularly of Dryden and Pope. M., W., F., 10, *White 1B*. Assistant Professor PRESCOTT.

38b. **English Prose, 1660–1750.** Second term. A study of the prose of Dryden, Defoe, Addison, Steele, and Swift. M., W., F., 10, *White 1B*. Assistant Professor PRESCOTT.

33a. **English Prose, 1742–1798,** with special reference to the novelists and letter writers. First term, T., Th., S., 10, *White 1B*. Dr. ANDREWS.

33b. **English Poetry, 1742–1798,** with special reference to the beginnings of the Romantic Movement. Second Term, T., Th., S., 10, *White 1B*. Dr. ANDREWS.

[34a. **Romantic Poetry.** First term. A study of typical poems of Bowles, Coleridge, Wordsworth, and Southey, with some attention to the "impassioned prose" of DeQuincey. Lectures, readings, and papers. M., W., F., 11. Room to be announced. Dr. COOPER.]

[34b. **Romantic Poetry.** Second term. A study of Byron, Shelley, Keats, and Scott. A continuation of Course 34a; yet may be elected independently. M., W., F., 11. Room to be announced. Dr. COOPER.]

36a. **Victorian Prose.** First term. A study of representative works of Carlyle, Thackeray, Dickens, George Eliot, and Matthew Arnold. Lectures, readings, reports, and discussions. M., W., F., 9, *White 2*. Assistant Professor NORTHUP.

36b. **Victorian Poetry.** Second term. A study of the leading works of Browning, Tennyson, Matthew Arnold, William Morris, and Swinburne. Lectures, readings, reports, and discussions. M., W., F., 9, *White 2*. Assistant Professor NORTHUP.

48. **American Literature.** The colonial period will be treated in outline; the nineteenth century more fully. Extended treatment will be given to Poe, Emerson, and Hawthorne. M., W., F., 11, *White 2*. Assistant Professor PRESCOTT.

32b. **Ballad Literature.** Second term. English and Scottish popular ballads; study of the ballad as a form of literature; investigation of the theories of its origin and development; comparison of kindred ballads of other nations. T., Th., 11. Room to be announced. Mr. COX.

47b. **Lyric Poetry.** Second term. The study of representative shorter lyric poems, from the time of Spenser to the present day, with regard to form, expression, and spirit, independently of biographical considerations. This course will include an introduction to

the study of metre. T., Th., 9. Room to be announced. Assistant Professor STRUNK.

22. **English Translations of Greek and Latin Classics.** Counts as two hours. Open to students who have attained good rank in Course 2a or Course 4b. Course 21 is not required. Rapid reading in the best of the more accessible translations; with emphasis upon Greek masterpieces. A fundamental course in English literature. Papers and discussions. Th., 11. Room to be announced. Dr. COOPER.

44a. **The Principles of Literary Criticism.** First term. Counts as three hours. Open to more advanced, including graduate, students. A study, in part historical, of the theory of poetics. Papers and discussions. M., W., 11. Room to be announced. Dr. COOPER.

44b. **The Essentials of Style in Literature.** Second term. Counts as two hours. Open to students who have had Course 44a or who have attained good rank in Course 2 or Course 3, (old numbering). A study of various theories of style, with especial reference to prose composition. Papers and discussions. M., W., 11. Room to be announced. Dr. COOPER.

IV. Graduate Study.

The several members of the Department will supervise research work, literary or linguistic, offered as a major or a minor subject for an advanced degree.

As a minimum of undergraduate preparation, three of the Courses 21–48, or their equivalent, are required for literary reseach; Courses 11 and 15, or their equivalent, for linguistic research.

Hours will be arranged upon consultation.

Language. Professor HART will conduct a seminary in the history of the English language. Intending members must have had Course 15 or its equivalent. The topic for the present year will be The Dialectal Forms of English Speech in Ireland.

Assistant Professor STRUNK will supervise the study of Old English poetical texts.

Assistant Professor NORTHUP will supervise the study of selected Middle English texts.

Dr. MONROE will supervise the study of Layamon's Brut in its linguistic and literary relations to Old English and to later Middle English.

Literature. The several professors and instructors will supervise the study of authors and topics connected with the periods treated in the undergraduate courses announced above.

Assistant Professor STRUNK will supervise the graduate study of Spenser, Shakespeare, and other authors of the period 1557–1660.

Assistant Professor PRESCOTT will supervise the study of American literature, 1783–1825.

Assistant Professor NORTHUP will supervise the study of the Arthurian legends and their treatment by mediæval romancers and modern poets.

Dr. COOPER will admit graduate students to Courses 22, 44a, and 44b, and will also supervise graduate study of the works of Wordsworth, Coleridge, Byron, and other poets of the earlier nineteenth century.

Mr. ADAMS will direct the reading of students of the Tudor and Stuart drama.

V. The English Club.

For the purpose of stimulating interest in literary matters outside the curriculum proper, there is an organization known as the English Club, which meets every second week during the academic year to consider topics connected for the most part with recent and current authors. In 1904–05 evenings were given up to the discussion of such writers as Thoreau, Stephen Phillips, Aubrey De Vere. The meetings, which are informal, are conducted by undergraduates. Although membership is open to the whole University, those taking work in the Departments of English and Oratory are relied on particularly to support the club.

VI. Prizes.

For the Guilford, Shakespeare, and Browning prizes see the University pamphlet on Prizes: Regulations and Conditions Governing Prize Competitions. Copies may be obtained of the Registrar.

The topics for the Browning competition in 1905–06 are: The Treatment of Landscape in Tennyson and Browning; Browning's Dramatic Genius as exhibited in Pippa Passes, A Soul's Tragedy, Strafford, and The Return of the Druses; The Aesthetic Significance of Browning's Blank Verse.

ORATORY

Office of the Department, White Hall, 16a.

The instruction of the department embraces the philosophy and art of speech, the historical development of oratory and its influence upon human affairs, the writing and delivery of addresses, and the theory and practice of brief-writing and 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 courses 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 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. 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 simultaneously. 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 advanced 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 rhetorical 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 brief-writing, 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 in 1905–1906 :

1. **Public Speaking.** First half-year. An elementary course prescribed for admission to all the other courses of the department. A study, theoretical and practical, of the nature of public speech; methods of work. The aim is to help the student to a simple, direct manner of speaking. Original speeches and interpretation of selections. Open to students in the College of Arts and Sciences who have completed English 1. Open for 1905–6, to twenty-five freshmen whose entrance English is of a high grade. Open to students of the professional colleges who are not deficient in entrance English. M., W., F., 11, 12, *White 16.* Assistant Professor WINANS and Mr. EVERETT. T., Th., S., 12, Mr. EVERETT.

Supplementary to this course and that which follows, Oratory 1a, personal instruction will be given by appointment, throughout the year. Messrs. EVERETT, BECKER and ———.

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

1a. **Public Speaking.** Second half-year. Open to those who have completed Course 1, and prescribed for admission to the other courses of the department. M., W., F., 11, 12; T. Th. S., 12. Assistant Professor WINANS and Mr. EVERETT.

1b. **Public Speaking.** Either half-year. Delivery of speeches before the sections of Courses 1 and 1a. Individual instruction and criticism. Open by special permission to those who have had Courses 1 and 1a. Credit, one hour for one term.

1c. **Public Speaking for Engineers.** Two hours. The course iu Public Speaking adapted to the needs of engineers. Hours to be arranged. Assistant Professor WINANS and Mr. EVERETT.

2. **Reading.** Interpretation of selected passsages of prose and verse. Open to a limited number who have done satisfactory work in 1 and 1a. Credit, one hour. Two hours to be arranged. *White 16.* Assistant Professor WINANS.

[3. **Brief-Writing and Debate.** First half-year. Not given in 1905–6.] Argumentation T., Th., S., 12. See English 6, which prepares for Oratory 3a.

In the field of extemporaneous debate the University offers the '94 Memorial Prize, for conditions governing which see special pamphlet on prizes.

3a. **Oral Debate.** Second half-year. The principles of argumentation applied to the oral discussion of questions of present interest. Weekly debates preceded by briefs. Open to those who have passed 1 and 1a, and English 6. S., 11–1. Assistant Professor WINANS and Mr. ———.

[3b. **Oral Debate, Advanced.** First half-year. A half-course ending December 1. Open to those who have done satisfactory work in 3a. Credit, one hour. Not given in 1905–6.]

4. **Extempore Speaking.** First half-year. Weekly addresses thoroughly outlined. Exercises based upon assigned topics in the fields of American history and politics and current events. Open to a limited number who have done satisfactory work in Courses 1 and 1a. Two sections. M., 3–5; T., 3–5, *White 16.* Assistant Professor WINANS and Mr. EVERETT.

4a. **Extempore Speaking.** Second half-year. Two hours until Easter. Open to those who have done satisfactory work in Course 4. Credit, one hour. M., 3–5. Assistant Professor WINANS.

5. **Formal Oratory.** First half-year. Careful study of the written speech. The writing of orations with careful criticism. Practice in delivery. Open to those who have done satisfactory work in Courses 1 and 1a. This course will afford special training for those who wish to enter the competition for the Woodford prize in oratory. T., Th., 12, *White 16.* Assistant Professor WINANS.

6. **Masters and Masterpieces of Oratory.** Second half-year. Lectures, readings and reports. Open to students who have done satisfactory work in Courses 1 and 1a. T., Th., *White 16.* Mr. EVERETT.

7. **Teacher's Course.** Weekly discussions of methods and books. Observation and practice. Limited to a very few students who have shown special proficiency in other courses of the department. Two hours credit. Hours to be arranged. Assistant Professor WINANS.

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. 22, 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, supplement 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, an assistant professor, an instructor, and an assistant in philosophy, an assistant professor and two assistants in psychology. Thus all sides of philosophy are represented in the courses of instruction.

The endowments of the School of Philosophy enable it to secure whatever material facilities are required for the successful prosecution of philosophical studies and research. There is already a full equipment in various lines, and additions will be continually made as required. All the more important philosophical journals published, both at home and abroad, are received by the library. The library is also well supplied with philosophical works; and books not on hand are ordered when needed. In the 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, 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 eleven 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, 18x 24 feet); and one each to acoustics, haptics, investigations into taste and smell, and chronometrical registration. A large lecture-room is used for experimental drill-work and demonstration. There are further a work-shop 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 continual improvement, and apparatus needed for thesis work is at once procured. A skilled mechanician is in the service of the Department.

The Philosophical Review, now in its fifteenth 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.

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, as his major subject. 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 69). 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 ex-

ample. 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.

The following courses are offered in 1905–6.

Psychology.

1. **Elementary Psychology.** T., Th., S., 11. First term. *Psychological Laboratory Lecture Room, Morrill 15.* Professor TITCHENER.

This course is intended as an introduction to psychology. The topics of sensation, affection and attention are discussed in detail, and some time is devoted to the psychology of the abnormal (dreaming, hypnosis, insanity) and to comparative psychology. The course ends with lectures on the more complex mental processes, emotion, action and association. The lectures are supplemented throughout by experimental demonstrations. Titchener's *Outline of Psychology* is used as text-book.

2. **Experimental Psychology.** Laboratory work, qualitative and quantitative. M., W., F., 3. *Psychological Laboratory.* Professor TITCHENER, Assistant Professor BENTLEY, Messrs. FERREE and COFFIN.

This course may be entered either in the first or in the second term. The entering work consists of qualitative experiments upon sensation, affection, attention and action, perception and idea, and the association of ideas. Text-book : Titchener's *Experimental Psyychology*, pt. i. The work of the following term is quantitative : verification of Weber's Law in the various sense-departments, determination of stimulus limens, the psychophysics of selective and volitional action (compound reaction experiments), etc. Text-book : Titchener's *Experimental Psychology*, pt. ii.

NOTE.—Students in their second year, who have completed Course 1, may enter this course in the second term for qualitive work (one, two or three hours).

3. **Psychology of the Abnormal Mind.** T., Th., 9. First Term. *Psychological Laboratory.* Assistant Professor BENTLEY.

The course opens with a brief review of the functions of the higher nervous centres and their relation to mental states and processes. Subsequent lectures discuss the principal types of mental abnormal-

ity and derangement, paying especial attention to the more serious disorders of insanity, and to the general relation of abnormal to normal psychology.

4. **General Psychology.** T., Th., 9. Second term. *Psychological Laboratory.* Assistant Professor BENTLEY.

The lectures of this course cover the whole field of psychology. They are arranged as follows: first, the various sub-divisions of psychology (individual and social, normal and abnormal, analytical and genetic) are defined; and, secondly, the more complex processes and states of the normal human mind are treated in systematic order.

NOTE.—Students in their second year, who have completed Course 1, may enter this course in the second term.

3a, 4a. **Supplementary Study in Abnormal or General Psychology.** S., 9. First or second term. *Psychological Laboratory.* Assistant Professor BENTLEY.

The work will consist of discussion of collateral readings assigned in Course 3 or 4, reports on current literature, and informal criticism of psychological systems.

5. **Reading of German Psychology.** Second term. T., 5 (or other hour, to be arranged). *Psychological Laboratory.* 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., ed. of 1889, will be translated in class.

Students who desire to read and translate a psychological monograph in French, German or Italian, during the first term of the year, are requested to communicate, as early in the term as possible, with Professor Titchener or Assistant Professor Bentley.

6. **Systematic Psychology.** Lectures, essays, and experimental illustrations. M., W., F., 9. *Psychological Laboratory Lecture Room.* Professor TITCHENER, Assistant Professor BENTLEY and Mr. FERREE.

The complete course occupies two years. It is given in four terminal sections: (1) sensation; (2) the simpler sense complexes; qualitative, temporal and spatial ideas; (3) the affective processes and attention; (4) action and the intellectual processes (memory, association, imagination, etc.). The work of each term is complete in itself, and the course may be entered at any point.

There will be no text-book; but members of the class will be expected to be familiar with Wundt's Outlines of Psychology and Kuelpe's Outlines of Psychology, and with selected portions of James' Principles of Psychology, Stout's Analytic Psychology, Ebbinghaus' Psychologie, and Wundt's Physiologische Psychologie.

7. **Laboratory Exercises in Psychology.** Hours to be arranged. *Psychological Laboratory.* Professor TITCHENER, Assistant Professor BENTLEY, and Mr. COFFIN.

The exercises will consist either in the repetition of certain classical experiments in psychology, carried out in greater detail and with more accuracy than is possible in Course 2, or in the original investigation of simple problems suggested by the experiments of Course 2 or the lectures of Course 6. The course may occupy from one to five hours a week, at the option of the student.

8. **Experimental Aesthetics.** Second term. One or two hours, to be arranged. *Psychological Laboratory.* Assistant Professor BENTLEY.

The course is open to students who have taken or are taking Course 6. The lectures deal with the history of experimental aesthetics, as defined by Fechner, devoting especial attention to the recent monographic literature.

[8a. **History of Psychophysics.** Second term. One or two hours, to be arranged. *Psychological Laboratory.* Assistant Professor BENTLEY.]

The course is open to students who have taken or are taking Course 6. The lectures deal with the history of psychophysics, as defined by Fechner, devoting special attention to the works of Fechner, Wundt, Helmholtz, Hering, G. E. Mueller and Delboeuf.

NOTE.—This course will not be given in 1905–6.

9. **Advanced Laboratory Work.** M., W., F., 10–1; T., Th., S., 2–6, *Psychological Laboratory.* Professor TITCHENER, Assistant Professor BENTLEY, Messrs. FERREE and COFFIN. Consultation hours by arrangement.

10. **Seminary in Psychology.** One or two hours weekly, by arrangement. *Psychological Seminary Room, Morrill 16.* Professor TITCHENER and Assistant Professor BENTLEY.

The subjects of discussion, historical and critical, 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, 3, 4 and 6, or their equivalents.

Logic and Metaphysics.

11. **Logic.** Second Term. T., Th., S., 11, *Library Lecture Room.* Professor CREIGHTON.

This course will deal in an elementary way with the general character of the thinking process, its laws of development, 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, both in the Deductive and Inductive processes of reasoning. Creighton's Introductory Logic will be used as a text-book.

12. **History of Philosophy.** Lectures. Prescribed reading, and occasional essays. M., W., F., 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.

13. **Types of Metaphysical Theory.** First term. Lectures and discussions. T., Th., 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, and in this connection to study some of the fundamental metaphysical problems, and to attempt to define the nature of the solution which modern philosophical thought is able to offer.

14. **Empiricism and Rationalism.** Lectures, discussions, and essays. T., Th., 10, *White 5*. Dr. WRIGHT.

In this course the empirical movement as represented by Locke, Hume, and Mill, and the rationalistic movement as represented especially by Descartes, 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).

15. **The Critical Philosophy of Kant.** Lectures, discussions, and essays. 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.

16. **Problems of the Philosophy of Religion.** Readings and discussions. Second term. T., Th., 12. *White 5.* Dr. WRIGHT.

In this course certain leading problems of the philosophy of religion will be discussed. Especial consideration will be given to the philosophical basis of theism. An attempt will also be made to interpret several great historical religions, including Christianity, as representing different stages and aspects of the development of the religious consciousness.

[17. **German Pessimism, with special reference to Schopenhauer and E. von Hartmann.** Lectures and discussions. Two hours. Assistant Professor ALBEE.]

This course was given in 1904–5, and will be repeated in 1906–7.

18. **The Philosophy of Lotze.** Lectures and discussions. S., 10. *White 5a.* Dr. HOLLANDS.

The aim of this course is to present the philosophy of Lotze in its historical relations. The Clarendon Press translation of The Metaphysic will be used principally in class, but frequent references will be given to the Microcosmos and Lotze's other philosophical works.

19. **The Relations of Philosophy and Literature during the Nineteenth Century.** Lectures. Second term. S., 10, *White 9.* Professor CREIGHTON.

This course will trace the general influence of philosophical conceptions, and particularly of German Idealism, upon certain British and American writers of the nineteenth century. 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 then be made the starting point, and Wordsworth, Carlyle, Emerson, and Browning will be successively treated from this special point of view.

20. **The Theory of Evolution: Its History and Significance.** Lectures. F., 12. *Boardman C.* Dr. WRIGHT.

These lectures are intended primarily for undergraduates. They do not presuppose acquaintance with the history or special terminology of philosophy. The 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.

21. **Supplementary Study in the Theory of Evolution.** Lectures and discussions. Second term. M., W., 10, *White 5*. Dr. WRIGHT.

This course is open to students who have had Course 12 or Course 20. After a resumé of the present state of biological theory, the application of the evolutionary method to the various sciences will be treated in some detail, and, finally, the philosophical bearings of the theory will be made the subject of special study. Together with other required reading, Spencer's First Principles will be critically reviewed.

[22. **Post-Kantian Idealism.** Lectures and textual study. M., W., 12. *White 5a*. Dr. WRIGHT.]

[23. **British Neo-Hegelianism.** Lectures. One hour. Assistant Professor ALBEE.]

This course was given in 1904–5, and will be repeated in 1906–7.

24. **Problems and Methods in Recent Philosophy.** Lectures. Th., 12, *White 5a*. Dr. HOLLANDS.

The object of this course is to examine the problems and methods involved in current philosophical investigation, as a basis for a positive treatment of some of the fundamental problems of the present day.

25. **Seminary in Logic and Metaphysics.** F., 10. *White 5a* Professor CREIGHTON.

During the academic year 1905-1906, this seminary will be devoted to a study of some of the more important contributions to metaphysical theory during the last decade.

Philosophical Conferences.

A general conference of the professors, fellows, and scholars for the discussion of current philosophical literature will be held fortnightly.

Ethics.

30. **General Ethics.** Lectures and discussions. First half-year. M., W., F., 9, *White 5*. Assistant Professor ALBEE.

The main problems of Ethics will be studied, chiefly with reference to their bearings on life. The psychology of the moral consciousness will be studied, and the question of the relation of the individual to society will be discussed. 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 historic conceptions of duties and virtues will be critically examined, and finally the important practical problems of the moral life of the present will be investigated. Students will be expected to read James Seth's *A Study of Ethical Principles* (Charles Scribner's Sons).

31. **History of Morality.** Lectures. Second half-year. M., W., F., 9. *White 9*. Dr. MOFFATT.

This course will present in outline the history of moral practice in primitive, ancient, mediæval and modern times. Especial emphasis will be laid on moral customs divergent from those now current among civilized peoples, in order to show how moral ideas vary according to the conditions of life. An attempt will be made to show the close interrelation between economic, political and social circumstances on the one hand, and morality on the other. No acquaintance with ethical theories is presupposed, and the course will be open to all regular students of the University, who have taken or are taking Course 1.

36. **The History of Ethics.** Lectures, essays, and discussions, M., W., 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 term 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 term will be given to the careful examination of modern theories, with special reference to the development of English ethics.

37. **Systematic Ethics.** W., F., 10, *White 9*. Dr. HOLLANDS.

Some of the more important English writers of differenl 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.

39. **Ethical Seminary.** S., 11-1, *White 5a.* Assistant Professor ALBEE.

The subject for 1905-1906 will be the development of Rationalism in Modern Ethics.

Ancient and Mediæval Philosophy and Aesthetics.

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

The aim of this course is to give a 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.

Experimental Aesthetics. Second term, S., 9 (or other hour, to be arranged). See Psychology Course 8.

41. **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 Rennaissance. 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.

42. **Platonism.** Lectures on the Philpsophy of Plato and reading on the dialogues. S.. 11. *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, Phædo, Republic, and parts of the Laws. The course is intended for students of literature as well as of philosopey.

43. **The Philosophy and Culture of the Renaissance.** Lectures. First Term. S., 10, *White 5.* Assistant Professor HAMMOND.

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

45. **History of Ethics (Ancient and Mediæval.)** M., W., 11. Assistant Professor HAMMOND.

44. **Thomas Aquinas** : Selections from the *Summa theologica*, T., Th., 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.

45. **Aristotle's Ethics.** Reading of the Greek text. M., 11 (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.

46. **The Republic of Plato.** Reading of the Greek text. T., Th., S., 9. *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.

47. **Rapid Reading of German Philosophy.** S., 12. *White 5a.* Assistant Professor HAMMOND.

The primary aim of this course is to aid students in acquiring facility in translation and a knowledge of German philosophical terminology. Paulsen's Immauel Kant, sein Leben und seine Philosophie will be translated.

48. **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 Mediæval Philosophy. Once a week, in the hours above named, the members of the seminary will read the De anima or the Poetics of Aristotle.

THE SCIENCE AND ART OF EDUCATION.

State Certificates.

The State Education Department offers the following alternatives for the certification of teachers :

1. A State Certificate upon graduation good for three years, and re-

newable for life without examination for those who successfully complete an approved course in the Science and Art of Education while in the University.

2. A temporary certificate upon graduation good for two years, but renewable only upon state examinations in professional subjects constituting a full equivalent for the university courses required in the first alternative.

The details for the two alternatives are as follows:

(1.) The University work prescribed for students wishing to qualify without examination for the New York State College Graduate Certificate is as follows:

1. Psychology, general and educational, 90 hours; 2. History and Principles of Education, 90 hours; 3. Method in Teaching, 60 hours; 4. Observation, 20 hours.

Students who have successfully completed the foregoing will be awarded the certificate at graduation. This certificate is good for three years, and is renewable for life without examination at the end of that period.

(2.) The subjects for state examination for those who do not comply with the above requirement are as follows: Psychology, general and educational; History and Principles of Education; Method in Teaching. Detailed syllabi outlining the work and prescribing study and readings in these subjects are furnished by the State Education Department at Albany, N. Y., and will be sent upon request. Students at the University may procure copies through the department.

Suggested Course of Study.

For the guidance of students who wish to devote themselves to teaching, the following outline of a University course of study is suggested as a suitable preparation:

a. **Tools of Study or Expression.** 1. English, 6 hours; 2. Public Speaking, 6 hours; 3. Drawing, 4 hours; 4. French, German, 14 hours. Total, 30 hours.

b. **Basal Studies.** 1. History, 6 hours; 2. Economics, 6 hours; 3. Social Science, 4 hours; 4. General Physiology and Neurology, 4 hours; 5. General Biology, including the theory of evolution, 6 hours; 6. Mathematics, or a Quantitative Science, 6 hours; 7. History of Philosophy, 6 hours. Total, 38 hours.

c. **Technical Training.** Undergraduate Courses in Educational Department, 16 hours.

d. **Specialization** in the topics the student expects to teach (including the teachers' courses when given), and amplification of the

topics above cited to strengthen preparation at weakest points, 39 hours.

Equipment.

The work of the department is facilitated by a museum and by a laboratory which will soon be housed in suitable quarters in Goldwin Smith Hall.

The educational museum contains collections illustrating the work done in various school grades, statistical charts, a very full assortment of school text-books, and other material appropriate to its purpose.

The educational laboratory has a collection of apparatus for demonstration and of instruments of precision for research in connection with school hygiene, the experimental study of school children, and the psychological phases of education in general. This equipment is being constantly enlarged and apparatus needed for special investigations is at once procured.

Courses Primarily for Undergraduates.

1. **Principles of Education.** First half-year. Lectures, discussions and text-book study. T., W., Th., 3, *White 10.* Professor DE GARMO.

This course is designed to be an introduction to the general theory of education, both in its individual and its social aspects. The following are some of the leading topics: personality and environment as the presuppositions of education; the educative institutions of society; relation of democracy to education; individual development; the school as a social institution; the doctrines of interest and formal discipline; the course of study; nature and educational value of the several studies; methods of class-room teaching and management.

2. **Lectures on Secondary Education.**

(a) **The Development of Secondary Schools.** First half-year. Lectures, discussions and readings. M., 3, *White 10.* Professor DE GARMO.

Comparative study of rise and development of literary, scientific, and technical secondary schools in Germany, France, England, and the United States.

(b) **The Period of Adolescence.** Second half-year. Lectures and reading. M., 3, *White 10.* Assistant Professor WHIPPLE.

A study of the physical and mental characteristics of the adolescent with their significance for secondary instruction,—including such topics as physical growth, modifications in sensory life, the development of the sex instinct, the hygiene of sex; attitude toward nature

and the teaching of science, religious conversion, the social instincts, the problem of co-education, etc.

3. **History of Education.** First half-year. Lectures, discussions and prescribed readings. M., T., W., Th., 2, *White 10.* Professor DEGARMO.

This course makes a general survey of the history of education, and follows in the main the topics and readings prescribed in the syllabus of the New York State Education Department for the guidance of college graduates. Special emphasis is laid upon the following topics: the education of the Greek people; the rise and development of humanism; the rise and development of science and scientific methods in education; the doctrines of educational reformers; the development of modern systems of education.

4. **Psychological Basis of Education.** Second half-year. Lectures, discussions and prescribed reading. M., T., W., Th., 2. *White 7a.* Assistant Professor WHIPPLE.

The lectures present a complete system of functional psychology as applied to education, covering the relation of mental to nervous activity, and the large groups of psychophysical functions, volition, cognition and emotion. Particular reference is given to such topics as nervous plasticity, habit, the nature of educational training and discipline, the psychology of temperament, attention and interest, association, apperception, perception, observation, memory, imagination, conception, judgment and reasoning. Where feasible, psychological experiments that apply to the work in hand are described or demonstrated.

This course is fundamental and should be taken with or before Courses 5, 6, 12, 13 and 14.

5. **School Hygiene.** First half-year. Lectures, prescribed reading and demonstrations. F., 2–4 (two hours credit), *White 7a.* Assistant Professor WHIPPLE.

Construction of school buildings, situation, heating, ventilation, sanitation, followed by the hygiene of instruction, fatigue, school diseases, defects of sight and hearing, hygiene of reading, writing and other studies.

Occasional demonstrations of an experimental type. Students who are particularly interested in this phase of the work and who are competent for experimental investigation may register for systematic work, with credit, in course 14. For this work students should have taken, or be taking, course 4, and should afterward take course 6.

6. **The Education of Defectives and the Feeble-Minded.** Second half year. Lectures, prescribed reading and papers. W., 3. *White 7A.* Assistant Professor WHIPPLE.

An historical, statistical and critical survey of the methods employed in the education of the blind, deaf and dumb, the feeble-minded, and abnormal and backward children generally. Course 5 forms a natural introduction to this work.

Methods of Modern Philanthropy. T., Th., 11. See History and Political Science. Course 55 (page 153.)

7. **Teacher's Course in Latin.** See course 26, page 101.
8. **Teacher's Course in Greek.** See course 36, page 99.
9. **Teacher's Course in English.** See course 9, page 115.
10. **Teacher's Course in German.** See course 13, page 107.

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.

[11. **Philosophy of Education.** Lectures, discussions, and study of educational sources. T., Th., 2, *White 10*. Professor DEGARMO.

This is a course in advanced educational theory in both elementary and secondary instruction. It is based chiefly upon the original works of prominent leaders since the Revival of Learning.]

[12. **Experimental Study of School Children.** First half-year. Lectures, demonstrations and reports. T., Th., 2. *White 7A*. Assistant Professor WHIPPLE.

An examination of the literature dealing with anthropometric and psychological tests of school-children with reference to purpose, methods and results. The lectures will be accompanied by demonstrations of the more important pieces of apparatus, while students who wish practice in conducting school tests may register for experimental work in Course 14. This course will be given in alternate years.]

13. **Mental Development.** Lectures, prescribed reading and essays. T., Th., 3, *White 7A*. Assistant Professor WHIPPLE.

A study of the growth of the individual mind with special reference to the periods of childhood and adolescence. In the treatment of such factors as heredity, reflex and instinctive action and the doctrine of recapitulation, some attention will be made to the evolution of mind iu the animal kingdom. Ability to read either French or German is required. This course will be given in alternate years with course 12.

14. **Seminary for Experimental Investigation.** Hours and work to be arranged. *White 7B.* Assistant Professor WHIPPLE.

15. **Seminary for the Science and Art of Education.** W., 7:30 P. M. *White 7A.* First half-year. Professor DEGARMO and Assistant Professor WHIPPLE. Second half-year. Assistant Professor 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. At each meeting a portion of the time will be given to reviews of important new books and of the current periodical literature, including especially The Educational Review, the School Review, The Pedagogical Seminary, The Teacher's College Record, The Elementary School Teacher, and the more important European educational magazines.

MUSIC.

1. **Vocal Music.** Open to all students showing sufficient aptitude to pursue the subject with profit. Ear training, sight reading, elements of harmony, vocal culture, and the study of standard church and secular music.

Attendance is required at the morning service at Sage Chapel, for which service the members of the class constitute the regular choir.

Individual examinations for admission will be held at Sage Chapel, at the opening of the first term. Two hours. Tuesday, 7:15 p. m.; Thursday, 5 p. m., Sage Chapel. Assistant Professor DANN.

2. **Advanced Vocal Music.** Preparation and public presentation of the best choral works, sacred and secular. This course is offered as advanced work to students possessing good voices and the ability to read music of moderate difficulty.

Students in this course constitute the Advanced Choir at the Sunday Vesper Services at Sage Chapel, and are required to participate in the preparation during the year and public performance of larger choral works at the Music Festival in April or May.

Individual examinations for admission will be held at Sage Chapel, at the opening of the term. Two hours. Tuesday, 5 p. m.; Wednesday, 7:15 p.m., Sage Chapel. Assistant Professor DANN.

3. **Orchestra.** Ensemble study of standard works including compositions for chorus and orchestra. This course is offered as advanced training for students who play some orchestral instrument sufficiently well to participate creditably in the study and public performance of the works of the best composers. The orchestra will give two or more concerts during the year, accompany the

Advanced Choir at the Sunday Vesper Service at Sage Chapel, and participate in the performance of complete works given by the choir during the year.

Only a limited number can be admitted. Places will be filled by competition, which will be held at Sage Chapel at the opening of the term. Two hours. Hours to be arranged. Mr. GEORGE L. COLEMAN.

Attendance is required of all students in music at the series of Lecture Recitals to be announced.

Full information concerning the series of Chamber Concerts to be given during the year will be announced early in the first term together with details concerning the five Festival Concerts by the University Chorus assisted by eminent soloists and Festival Orchestra, to be given the last of April. The hearing of good music interpreted by great artists, is absolutely essential to the acquirement of correct ideals in music, and is therefore necessary for every music student.

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 six professors, one assistant professor, an instructor, seven assistants, five fellows and one scholar. The corps of instruction is as follows :

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

GEORGE LINCOLN BURR, A.B., LL.D., Litt.D., Professor of Mediæval History.

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

CHARLES HENRY HULL, Ph.D., Professor of American History. [*Absent on Leave*].

FRANK ALBERT FETTER, Ph.M., Ph.D., Professor of Political Economy and Finance.

RALPH CHARLES HENRY CATTERALL, Ph.D., Professor of Modern European History.

MAX FARRAND, A.B., Ph.D., Acting Professor of American History.

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

ROBERT FRANKLIN HOXIE, Ph.B., Instructor in Political Economy.

LOUISE ROPES LOOMIS, A.M., Lecturer in History.
WILLIAM WOOLARD ROGERS, A.B., Assistant in Ancient History.
—— —— —— Assistant in Mediæval History.
ABRAHAM ABBEY FREEDLANDER, A.B., Assistant in Modern European History.
WALTER LINCOLN WHITTLESEY, A.B., A.M., Assistant in Politics.
GEORGE PENDLETON WATKINS, A.B., Assistant in Political Economy and Statistics.
CHARLES CLIFFORD HUNTINGTON, B S., Ph.B., Assistant in Political Economy and Finance.
THOMAS JOSEPH HASSETT, A.B., Assistant in Political Economy and Finance.

HISTORY.

A.—Ancient History.

The introductory course in this department will be devoted this year to the history of Rome, which will be considered throughout in its relations to general European history. The lectures are supplemented by the study of text-books and by individual examinations on assigned readings. This course is open to all students. A more advanced course, designed chiefly for mature students of history, political science, or classical philology, is devoted to the study of Greek political institutions and ideas. This course will involve the study of assigned topics with the use of primary authorities in translation. There will also be given during 1905–6 a course of one hour a week on Alexander the Great and his successors, intended especially for those who took the introductory course in Greek history during the previous year. To upperclassmen in Arts and seniors in the College of Law is offered an elementary course in Roman Law. For graduate students and seniors possessing sufficient acquaintance with Greek and Latin, there is provided in the seminary in Greek and Roman history an opportunity to engage in the critical study of some special period or problem from the sources. Lectures on the life aud antiquities of the Greeks and Romans are offered by the departments of Greek and Latin, and courses on the history of the Oriental nations are given by the professor of Semitic Languages and Literatures.

B.—Mediæval History.

The history of Christendom from the eve of the Middle Ages to the end of the sixteenth century is treated in a course of three hours weekly, open to all students except freshmen. A maturer course of

two hours enables those thus trained to give further study to the important period of the Renaissance and the Reformation, and is supplemented by a one-hour lecture course on the history of intellectual and religious liberty in Christendom. For training in historical research in this field, a practice-course familiarizes the student with the Latin of the chroniclers, and another teaches him to read the manuscripts and interpret the documents of the time. A seminary meant less strictly for students of this period of 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.

C.—Modern European History.

In English history a general course, intended for freshmen and sophomores, covers the history of the nation, while an advanced course, given alternate years, 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 the period 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.

D.—American History.

The most general courses offered in this department afford a brief comprehensive survey of our history to the outbreak of the Civil War. They require the use and criticism of the leading secondary authorities and the study of a limited number of selected sources. These are introductory courses designed to prepare undergraduates for further work involving the use, in special courses devoted to selected periods or topics, of a wider range of primary authorities. The subjects of such courses are changed from time to time. The seminary of the department enjoys the exclusive use of a well-equipped room in the University Library, conveniently adjacent to the history stacks. Guidance in the preparation of theses is given as individual need may require.

POLITICAL SCIENCE.

The Political Science group, in the President White School of History and Political Science, consists of the three departments of political economy and politics, political economy and statistics, and political economy and finance. Each one of these departments treats portions of the subjects of economics and of social philosophy, while each cultivates more particularly one field, as indicated in the titles. All the courses given in the three departments are combined in the following announcement. These, if pursued systematically, should not only contribute largely to a modernized "general education" that makes for broader life and better citizenship, but should also aid in preparing for business, law, journalism, the ministry, philanthropic administration, and various kinds of governmental and corporate service.

Of the several fundamental courses offered, the only ones open to freshmen are 39a, 39b (two hours throughout the year), which are designed to give an introduction to the subjects of politics, history, and social science, and to the modes of thought characteristic of this field of study.

The course (A), "Special Lectures," may be elected in the sophomore year and repeated, as the lecturers and subjects will change from year to year. Students have in this course an exceptional opportunity to feel the influence of the work and the personality of a number of America's great leaders of thought and action.

Open to sophomores, and introductory to the three lines of study, politics, social science, and economics, respectively, are the three courses 31, 41, and 51.

The courses in Political Institutions and Comparative Politics, 31a and 31b, 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, aim 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.

The course in Elementary Social Science (41) 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 general course in Political Economy (51) should be taken, preferably in the sophomore year, by all purposing to pursue advanced studies in Political Science. For most such courses only it is an absolute prerequisite. The course covers broadly both the theoretical and the practical fields, the Monday lectures dealing descriptively with leading American industries, and in the spring treating of the railroad problem.

A large number of courses are open generally to more advanced students, provided that they have taken the essential prerequisite subjects.

The course on Modern Questions in International Politics (33), besides helping to make clear the political relations of modern states, affords also present day illustrations of political principles in action. The special subject of the course changes from year to year. In 1904-05, the political and social situation in the Far East was considered. In 1905-06, the course will be omitted although 39b covers in part a similar field.

The importance of great cities in modern life demands that special emphasis be laid upon municipal problems; and in course 35 an effort is made to deal with these problems in a practical way for the general student, while the time of the graduate seminary will, this year, be devoted to special research in that field.

The two courses in statistics (48 and 49) are designed as an introduction to this method of studying social groups and social life. Emphasis is laid upon the results reached by statistical methods in simple fields where the chances of error in observation or interpretation are fewest. Special attention is given therefore, in course 48, to the statistics of population and to vital statistics. The methods of the United States Census Office in these fields will be presented in detail and a critical analysis made of the results of the Twelfth Census.

The course in Industrial Statistics and Commercial Geography (49), which runs through the second term, is designed as a continuation of course 48, but in special cases it may be taken by students who have not had the former course. Its aim is to study the statistics of Agriculture, Manufactures and Commerce, with especial reference to the United States. Much attention will be given to the interpretation of the statistics of Agriculture and Manufactures gathered by the United States Census Office.

In connection with courses 48 and 49 two hours of laboratory work

will be required of each student. The statistical laboratory is furnished with many of the modern appliances to facilitate statistical work.

Modern Philanthropy develops in a special field the subject dealt with in course 41, combiuing social philosophy with its practical application.

The course in Race and Immigration questions will be devoted to a study of the history and present aspects of the relations of the diverse races and nationalities in the United States. Emphasis will be laid especially upon the relation of negroes and whites in the southern states and the relation of immigrants and the native population in the northern states. The course will be open to those who have pursued either the course in Elementary Social Science or the course in Statistics.

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 everyday life.

During the year 1905-06 the study of Money, Credit and Banking, with especial reference to the principles aud practice in international exchange and to the reform legislation proposed in various countries will form the special subject of study in the course in Economic Legislation.

Other courses represented are on the history and description of economic institutions : on the practical social questions connected with transportation ; on the work and administration of benevolent institutions, public and private ; and on taxation and fiscal problems. In the laboratory exercises and research work connected with politics, economic legislation, statistics, finance and philanthropy a useful preparation is given for many kinds of social and governmental work.

For graduates and for other advanced students in this group of studies, large opportunities are presented for the pursuit of special studies.

The advanced student in economics is led to trace the growth of economic conceptions in connection with the social conditions and philosophic thought of each period and a special course is given on the contemporary discussions of theory.

Research courses in any of the subjects within these departments may be carried on by competent students under the personal supervision of the head professors in charge.

Attention is called to the opportunities in the line of economic history in course 40, and to the combined seminary (60) in railroad transportation given for the first time in 1905–6.

The General Seminary (80), in which all three of the departments unite, is the culmination of the work and is the largest opportunity for students in political science in Cornell University.

In the study of all these 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 of the student than to the acceptance of doctrines as final conclusions.

Courses in History and Political Science.

Students intending to devote themselves especially to History and Political Science are advised to give as much as possible of their time in the early years of their course to the study of languages, because in much of their later work ability to read Latin, French and German will be found indispensable.

For students devoting themselves to the general field of History and Political Science the following order of studies is suggested:

First Year	*Hours*
Greek, Latin, French, German (any two)	6
History	6
Natural Science	3

Second Year	*Hours*
Modern Language	3
History	6
Politics	2
Economics	3
Philosophy or Geography	3

Third Year	*Hours*
History	6
Politics, Economics, Social Science, at least	8

Fourth Year

Students are advised in this year to devote themselves to not more than two fields of study (one in History, one in Political Science), taking as many as possible of the advanced courses.

For students devoting themselves mainly to History the following order of studies is suggested :

First Year	*Hours*	*Second Year*	*Hours*
Greek, Latin, French, German (any two)	6	Modern Languages	6
History	6	History	6
Natural Science	3	Economics	3

Third Year	*Hours*	*Fourth Year*
History	9	Specialization in some one field of History under direction of the professor in charge.
Politics	3	
Social Science	2	
Philosophy or Geography	3	

For those devoting themselves mainly to Political Science the following order of studies is suggested :

First Year	*Hours*	*Second Year*	*Hours*
French and German	6	Modern Language	3
History	3	History	3
Natural Science	3	Politics	3
American Politics or Economic History	2	Economics	3
		Social Science	2
		Economic History or American Politics	2

Third Year	*Hours*	*Fourth Year*	*Hours*
History	3	History	3
Statistics and Commercial Geography	3	Specialization in some one field of Political Science under direction of the professor in charge.	
Finance	2		
Economic Legislation	2		
Advanced Economics	2		
Municipal Government or Economics	2		
Roman Law or International Law	2		

History and Political Science.

A. Special Lectures. A course of some thirty lectures by scholars and men of note not connected permanently with the University has been arranged for the year 1905–1906. So far as can now be stated the list of speakers will probably include :

DAVID WILLCOX, President of the Delaware and Hudson Railroad Company. Subject: Government Regulation of Railroad Rates.

The Hon. MARTIN A. KNAPP, Chairman of the Interstate Commerce Commission. Subject: Government Regulation of Railroad Rates.

FRANK B. SANBORN. Two lectures on Modern Greece. (a) The Greek Revolution, (b) The Greece of To-Day.

BOOKER T. WASHINGTON, President of Tuskegee Institute. Subject: The Negro Problem in the South.

ROBERT C. OGDEN, President of the Southern Education Board. Subject: The Education of the South.

Mrs. MAUD BALLINGTON BOOTH, in joint command of the Volunteers' Association of America. Subject: The Prison Rescue Work of the Volunteers.

JOHN MITCHELL, President of the United Mine Workers of America. Subject: The Labor Movement of the United States.

JOHN BOYD THATCHER. Two lectures on the French Revolution. (a) Outline of the French Revolution. (b) Some Women of the French Revolution.

HERBERT PUTNAM, Librarian of Congress. Subject: The Congressional Library—Its Aims and Its Relations to Scholastic Work in the United States.

The Hon. JOHN DEWITT WARNER. Subject: The Rapid Transit Commission in New York City.

The Hon. HOMER FOLKS, Secretary of the State Charities Aid Association, Ex-Superintendent of Charities of Greater New York. Subject: City Government. Five lectures.

Miss JANE ADDAMS, Director of Hull House, Chicago. Subject: Settlement Work in a Great City.

ROBERT S. WOODWARD, President of the Carnegie Institution. Subject: The Work and the Significance of the Carnegie Institution.

The Hon. ANDREW D. WHITE, Ex-President of Cornell University. Two lectures. Subjects to be later announced.

PRESIDENT SCHURMAN will also give a lecture which will be counted in this course. The subject will be announced later.

Collateral reading will be assigned in connection with the lectures, the note-books of the students will be inspected, one preliminary and one final examination will be held each term. So far as practicable the lectures will be given on Fridays at 3 P. M., probably in Boardman Hall. Some, however, will be evening lectures, and in

the course may be included addresses on special occasions, such as Founder's Day and Lincoln's Birthday, in which case due notice will be given. One hour credit for each term.

Ancient History.

1. **Roman History.** This course will present the history of Rome as part of the history of Italy and of the general history of European civilization. Lectures, text-books, reports and examinations. Open to all students. M., W., F., 11, *Morrill 12*. Assistant Professor SILL.

2. **Greek Politics.** This course is intended to offer an historical introduction to political science. The lectures and discussions will deal with those features of Greek political life which are of permanent interest—such as democracy, tyranny, the struggle between social classes, imperialism, and federalism,—and with Greek political theories, especially those of Plato and Aristotle, so far as they have had permanent influence on political thought. Not open to freshmen. M., W., 9, *Morrill 11*. Assistant Professor SILL.

3. **Alexander the Great and His Successors.** This course will treat of the conquest of the East by Alexander, the establishment of the Macedonian monarchies on the ruins of the Persian Empire and the fusion of eastern and western civilization. Not open to freshmen. F., 9, *Morrill 11*. Assistant Professor SILL.

4. **Roman Law.** An introduction to the history and system of the private law of Rome, intended especially for upperclassmen in Arts who expect to study law, and for seniors in the College of Law. M., W., 12, *Boardman B*. Assistant Professor SILL.

5. **Seminary in Greek and Roman History.** Open to graduates and seniors. Th., 4-6, or at another hour as may be arranged. *Greek and Latin Seminary Room*. Assistant Professor SILL.

Oriental History. T., Th., 2. See Semitics 8 (page 91.)

Geography and Antiquities of the Semites. Fri., 3. See Semitics 9 (page 91.)

Greek Archæology. W., F., 9. See Greek Archæology 18 (page 97.)

Herodotus. M., W., F., 10, first term. See Greek 7 (page 97.)

Roman Antiquities. W., F., 12. See Latin 27 (page 102.)

Latin Epigraphy. T., Th., 12. See Latin 42 (page 104.)

Mediæval History.

9. **Europe, 300-1600 A.D.** A general survey of the history of Christendom from the eve of the Middle Ages to the end of the sixteenth century, with especial attention to the life of society and the

progress of civilization. Lectures and examinations. Not open to Freshmen. M., W., F., 9, *Barnes Hall.* Professor BURR.

10. **Europe, 1300-1600 A.D.** A maturer study of the age of Renaissance and Reformation, with especial attention to the beginnings of modern life and thought. Lectures, discussions, and examinations. Open to those who have had course 9 (at least so much of it as deals with the period prior to 1300) or its equivalent. T., Th., 9, *Barnes Hall.* Professor BURR.

11. **The Rise of Tolerance.** A study of the history of intellectual and religious liberty in Christendom. Lectures. Open to graduates and to such upperclassmen as have taken or are taking course 10. S., 9, *Barnes Hall.* Professor BURR.

12. Courses 12a and 12b are meant especially for students of history who have taken course 9 and wish preparation for first-hand research in this field. They presuppose some knowledge of Latin—as much, say, as is needed to read Caesar or Livy.

12a. **Mediæval Life.** The reading of some mediæval chronicle, with a view to acquaintance with mediæval life and facility in the reading of historical Latin. In 1905–6 the chronicle, belonging to the closing years of the period and illustrating the transition from mediæval to modern life, will be the Chronicon of Konrad Pellikan (1478–1556). M., 3, *Professor Burr's Study.* Professor BURR.

12b. **Palæography and Diplomatics.** The reading of manuscripts and the interpretation of documents (especially those of the Middle Ages). Attention is devoted chiefly to the palæography of Latin and of the languages using the Latin alphabet. The course is one of actual study of the manuscripts and facsimiles in the University's possession. T., 3, *European History Seminary Room.* Professor BURR.

13a. **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., 3, *Professor Burr's Study.* Professor BURR. Open only to upperclassmen.

13b. **Historical Geography.** A fuller study of this most indispensable of the auxiliary sciences. Second half-year. Th., 3, *Professor Burr's Study.* Professor BURR. Open only to upperclassmen, and meant only for those who have already much knowledge of history.

14. **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 1905-6 the topic will be: Humanism and Heresy, 1515-1525. W., 3-5, *European History Seminary Room.* Professor BURR.

The attention of students especially interested in this period of history is also called to the courses in the early history of the modern languages and literatures (pp. 106, 111, 115 and 116) and to the courses on the history of philosophy, morality, and ethics (pp. 128, 131, and 132), especially to that on Thomas Aquinas (133) and to that on the phiosophy and culture of the Renaissance (132).

Modern European History.

In English history a general course, intended for freshmen and sophomores, covers the history of the nation, while an advanced course, given in alternate years, 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 the period 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.

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.* Open to all students. Professor CATTERALL.

16. **Modern European History, 1600-1900.** Lectures with syllabus, reports and examinations. M., W., F., 11, *Barnes Hall.* Open only to those who have had course 9 or course 15. A reading knowledge of French or German is required. Professor CATTERALL.

[17a. **History of Europe from 1740 to 1795,** with special reference to the history of Prussia, Russia and Austria. Lectures, reports and examinations. T., Th., 11, *Morrill 11.* Assistant Professor CATTERALL.]

[17b. **History of the French Revolution and the Napoleonic Era, 1789-1815.** Lectures, reports and examinations. T., Th., 11, *Morrill 11.* Professor CATTERALL. To be given in 1907-8.]

17c. **History of Europe from 1796 to the Present.** First semester: The Era of Napoleon. Second semester: Europe from

1815 to the present. Lectures, reports and examinations. T., Th., 11, *Morrill 11*. This course may be divided and the work of either term taken without the other. Professor CATTERALL.

18a. **Undergraduate Seminary.** A seminary for the study of French texts dealing with the French Revolution. The principal object is to secure facility in the reading of French historical works. Open to Seniors, and, by permission, to qualified Juniors. T., 4–6. *European History Seminary Room.*

[18b. **The Constitutional History of England to the present.** Lectures, study of constitutional documents, and examination. T., Th., 12, *Morrill 11*. Open to Juniors, Seniors and Graduate students. Professor CATTERALL.]

19. **Seminary.** The subject for study during 1905–6 will fall within the period covered by the reigns of Charles II and James II of England. Open to graduates, and, by permission, to qualified Seniors. M., 4–6. *European History Seminary Room.*

American History.

Courses 20 and 21 are introductory, but not open to Freshmen; courses 22 and 23 are advanced. Course 22 is open to students who have already taken a college course in American history. Course 23 is open to students who have taken course 22, or a satisfactory equivalent.

20. **American History to the Louisiana Purchase**, with especial emphasis on the history of the West. Lectures, with text-books and assigned readings. First half-year. T., W., Th., 10, *Morrill 11*. Acting Professor FARRAND

21. **History of the United States since 1803,** with especial emphasis on the history of the West. Second half-year. T., W., Th., 10, *Morrill 11*. Acting Professor FARRAND.

22. **The Formation of the Federal Constitution.** Assigned readings, individual investigations, and reports, with occasional lectures. First half-year. T., Th., 9, *Morrill 11*. Acting Professor FARRAND.

23. **The Development of the Federal Constitution.** Assigned readings, individual investigations and reports, with occasional lectures. Second half-year. T., Th., 9, *Morrill 11*. Acting Professor FARRAND.

Political Science.

[The following courses are arranged, as nearly as may be, according to grade of advancement, proceeding from fundamental courses to

those primarily for juniors and seniors, concluding with courses of research and graduate work.]

39a. **American Politics.** A brief discussion of the development of the leading political institutions of the United States under the influence of various physical and social forces is followed by an account of their actual working under various conditions of political parties, slavery and freedom, war, international complications, etc., and a concise discussion of two or three of our later political policies, such as those regarding immigration, the Monroe doctrine, and expansion. The aim of the course is to give a glimpse into the nature, actual practice, and significance of politics, as illustrated primarily in American history and institutions, and especially to aid students in their later work by suggesting ways of viewing all political, historical and social questions. First term. M., W., 12. *Morrill 12.* Professor JENKS. Open to all students. This course should, if possible, be taken before or in connection with Politics 31.

39b. **Dependencies of the United States.** A brief sketch of the policy of the United States regarding the acquisition of territory and its government before the Spanish-American War.

A more detailed account of the later territorial acquisitions,—the Philippine Islands, Guam, Porto Rico, Samoa, and the Hawaiian Islands,—touching upon their history, natural resources, population, civilization, government and their attitude toward the United States as well as the policy of our government toward them. A brief discussion of the situation regarding Cuba and Panama and its probable effects upon political and economic conditions in the United States. Second term. M., W., 12. *Morrill 12.* Open to all students. Professor JENKS.

[57. **The Economic History of England.** A survey of the economic development of England. One term.]

51. **Elementary Economics.** For those wishing a general survey of the field of economic thought, as well as for those preparing to carry on further studies in the political sciences. Three hours a week throughout the year. Discussions twice a week on assigned questions, research problems and text-book. Lectures once a week, M., 11, in *Library Lecture Hall*, on American industries the first term, and on transportation the second term. Discussion sections: Section 1, T., Th., 8; section 2, T., Th., 10; section 3, W., F., 10; section 4, 5, 6, W., F., 11; section 7, W., F., 12. Professor FETTER, Mr. R. F. HOXIE, and Mr. C. C. HUNTINGTON.

41. **Elementary Social Science.** An introductory course upon the relation of evolutionary theories to the social sciences and upon

the non-economic aspects of certain social problems, such as the family, race relations, immigration, labor questions, crime, etc. T., Th., 9, *Morrill 12.* Professor WILLCOX and Mr. WATKINS.

[60A. **Readings in German Economics.** To acquaint the student with the subject matter of some notable German works iu economics, as well as to give facility in the use of technical German. One hour credit.]

[60B. **Readings in Economic French.** To acquaint the student with the subject matter of some notable French works in economics as well as to give facility in the use of technical French. One hour credit.]

31a. **Political Institutions.** The Principles of Politics. Nature and historical development of political institutions. Outline of the constitutional and administrative laws of the United States and of Great Britain studied with special reference to their practical working. Lectures, text-book, and discussions twice a week, with laboratory work on material collateral to the lectures once a week for two hours. First term, M., W., 10. Laboratory hours to be arranged. Credit three hours. *Morrill 12.* Professor JENKS.

31b. **Comparative Politics.** Sketch of the constitutional and administrative laws and of the political institutions of the leading nations of Continental Europe, with especial reference to their relations to present political problems in the United States. A continuation of the course preceding, and preferably follows that, though it may be elected independently. Lectures, text-book and discussions twice a week, with special work in the seminary and library on collateral material once a week for two hours. Second term, M., W., 10. Laboratory hours to be arranged. Credit three hours. *Morrill 12.* Professor JENKS.

[55. **Methods of Modern Philanthropy.** (a) Charities, First term. The nature and causes of degeneracy, the character and extent of such problems as the pauper, the feeble-minded, the epileptic, the insane, and dependent children, and the best modern methods of dealing with these classes. (b). Reformation and prevention. Second term. A study of preventive and educational measures now developing for the betterment of social conditions; the criminal, and modern penal and reformatory agencies. The course is intended mainly as an aid to enlightened citizenship, but it serves as an introduction to professional charity work. Not open to students below Junior. Two hours throughout the year. T., Th., 11. Professor FETTER. Given in 1906–7.]

The Education of Defectives and the Feeble-Minded. W., 3. See Science and Art of Education, Course 6, (page 35.)

48. **Elementary Statistics.** An introductory course in statistical methods of studying population, with practical work in investigation, tabulation and interpretation. Special attention is given to the demographic statistics of the United States. Designed as a parallel or supplementary course to 41. First Term, M., W., F., at 11 and two laboratory hours a week at a time to be arranged. Credit three hours. *Morrill 24.* Professor WILLCOX and Mr. WATKINS.

49. **Commercial Geography and Industrial Statistics.** A continuation of course 48, but with special emphasis upon the agricultural and industrial statistics of the United States. Chisholm's Handbook of Commercial Geography and Mayo-Smith's Statistics and Economics will be used as guides. Under exceptional circumstances students may be admitted to this course who have not already had course 48. Second Term, M., W., F., at 11 and two laboratory hours a week at a time to be arranged. Credit three hours. *Morrill 24.* Professor WILLCOX.

[33. **Modern Questions in International Politics.** A study of leading questions of the day in the field of International Politics, the special topic changing from year to year. The purpose is to give general information, but especially to show the practical application of political principles to the study of current events. M., W., 12. Professor JENKS.]

35. **Municipal Government in Europe and the United States.** Lectures, discussions and assigned reading on the governmental, financial and social problems presented by the modern city. Part of the course will be devoted to discussion of the policy of municipal ownership. Students will be required to investigate and report on municipal conditions in special cities. T., Th., 8, *Morrill 12.* Professor JENKS and Mr. WHITTLESEY.

34. **Economic Legislation: Money, Credit and Banking.** During the year 1905–6, after study of the principles of money and banking, especial emphasis will be laid upon these principles as applied in monetary and banking laws of leading countries; and the class divided into sections, will prepare and discuss measures on subjects suitable for monetary legislation under actual business conditions in different countries. The course is designed with the purpose not only of elucidating principles, but also of showing some of the difficult problems arising from putting principles into practice in actual legislation. Lectures and discussions twice a week, with laboratory work in preparation of material for discussion once a week for two hours. T., Th., 10. Laboratory hours to be arranged. Credit two hours. *Morrill 12.* Professor JENKS. Open only to students who have taken Economics 51 or an equivalent.

36a. **Labor Problems—American Labor Conditions.** An elementary descriptive course in which the following questions are considered: the unemployed, wages, hours and conditions of employment in mining, manufacturing, transportation and trade; state protection of labor by means of factory legislation and inspection and other restrictions on freedom of competition; plans and projects for the betterment of labor conditions by means of voluntary associations, workingman's insurance, profit sharing, co-operation, etc. Open to all students except freshmen, on approval of the instructor. Two hours throughout the year. W., F., 8, *Morrill 12*. Mr. R. F. HOXIE.

[36b. **Problems of Organized Labor.** An advanced course dealing with conditions of employment, methods of industrial bargaining and remuneration, the economic claims and legal status of labor, considered mainly in connection with the growth, policies and activities of labor unions. Course 51 a prerequisite. Two hours throughout the year. W., F., 8. Mr. R. F. HOXIE].

[54a. **Modern Socialism. The Modern Socialist Movement.** An historical and descriptive account of socialism since the French Revolution. The aim of this course is to bring out clearly the causes of the rise of the modern socialist movement, the character of the socialist criticisms of the present social and industrial system, the socialist ideals and practical programmes and the character and strength of the present socialist organization of Europe and America. Open to all students except Freshmen on approval of the instructor. Two hours throughout the year. M., W., 9. Mr. R. F. HOXIE.]

54b. **Contemporary Socialism.** A critical study of present day socialism. In this course the various groups of contemporary socialists are studied with reference to their strength, organization, ideals, theories and methods; the ideas of some of the most able critics of enlarged state activity and socialism are reviewed, and an attempt is made to set forth the relation of contemporary socialism to various essential aspects of modern life. Open only to students who have taken Economics 51 or its equivalent. Two hours throughout the year. M., W., 9. Morrill 12. Mr. R. F. HOXIE.

43. **Race and Immigration Questions.** Survey of the social and economic problems resulting from the presence of diverse races and nationalities within the United States. Course 41 or 48 should have been previously taken. Lectures, investigations and reports. M., W., 10, *Morrill 24*. Professor WILLCOX.

[58. **(a) Corporate Finance and Financial History.** Corporate and Private Finance. First term. The study of Wall St. methods, foreign exchanges, the organization of industrial corporations and of

some of the important financial corporations, such as trust companies, insurance companies, and savings banks. The recent literature of the subject is discussed and regular reports are made on current changes in market conditions.

58. (b) Financial History of the United States. Second term. A survey of colonial and revolutionary finances, and a more detailed study of the national finances under the constitution in connection with the industrial conditions of the times. Lectures and special studies on the important periods. Professor FETTER.]

59. **Public Finance.** (a) Principles of Taxation. First term. The nature of governmental wants, the development of tax systems, the property tax and corporation taxes, the theory of incidence, the problem of equity, and the practicable ideals for a tax system in American conditions.

(b) Public Industrial Revenues. Second term. Fees, special assessments, public industries in city, state, and nation, and the extent and theory of public debts.

Lectures with laboratory work and special reports. Open to those who have had course 51 or an equivalent. T., Th., 12, *Morrill 12*. Professor FETTER.

57. **Recent Economic Thought.** A study of the changes that the leading conceptions, such as rent, diminishing returns, capital, interest, as presented by the classical economists, are now undergoing at the hands of various writers. This subject while indispensable for economic specialists, has for others a bearing on various practical problems and disciplinary worth as an exercise in close textual criticism. Open to graduates and to advanced major students in Political Science. M. and W at 12, *Political Science Seminary*. Professor FETTER.

59 A. **Research in Finance.** Students that have done superior work in course 58 or 59, or maturer students wishing to give special attention to financial studies, may undertake research in coöperation with the laboratory exercises. Credit one to three hours a term. *Political Science Seminary*, at hours to be determined. Professor FETTER and assistant.

55A. **Research in Philanthropy.** Graduates, or undergraduates that have done superior work in course 55, may register for special studies in the history and statistics of charities and criminology, in connection with the laboratory exercises of the course in Modern Philanthropy. Credit one to three hours a term. *Political Science Seminary*, at hours to be determined. Professor FETTER.

40. **Research in the Economic History of the United States.**

A few specially prepared students may undertake studies involving original investigation in the field mentioned. Credit one to three hours a term. *Political Science Seminary.* Hours to be arranged. Professor JENKS.

60. **Seminary in Railroad Transportation.** In this seminary the subject of investigation for 1905–6 will be "Railroad Rates," as viewed from the standpoint of the public, the investor, the financier, and the courts, and as exemplified in all the leading countries. Open to graduates and to a few other mature students. *Political Science Seminary*, Th., 3. Professors JENKS and FETTER.

80. **General Seminary.** For research work in the field of Political Science. In 1905–6 various important problems of city government will be considered. Open to graduates. *Political Science Seminary.* T., 3. Professors JENKS, WILLCOX, FETTER.

Greek Politics. M., W., 9. See History 2 (page 39.)

Roman Law. M., W., 12. See History 4 (page 39.)

Related Courses in Another College.

American Constitutional Law. W., 9. See Law 36.

BIBLIOGRAPHY.

1. **Introduction to the Use of Books.** A systematic study of Bibliographies, Indexes, Dictionaries, Cyclopedias, etc., including the principles of classification; cataloguing, indexing and preparing manuscript for printing. Lectures and exercises. First half-year. T., 2:30. Assistant Librarian AUSTEN.

1a. Laboratory work covering the same subjects as course 1, intended for students wishing more of the practical work. Open to students who have had course 1. One afternoon, from 2:30 to 5, each week. Second half-year. 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.

Pure Mathematics.

The work in mathematics prescribed for students in ENGINEERING and ARCHITECTURE takes one year. It presupposes a good knowledge of plane and solid geometry, of elementary and advanced alge-

bra, 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, chemistry, etc., 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.

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. Although these courses are in the field of pure mathematics, yet they are necessary, as introductions to most of the subjects in the second group mentioned below, 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, as are also courses in electricity and magnetism less mathematical in character than course 46 below.

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; the club meets every 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 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.

Elementary Courses open to Freshmen and Sophomores in Arts.

6. **Geometry, Algebra, and Trigonometry.** 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 requirements in mathematics, and is sufficient for the elementary work in physics. M., W., F., at 8, *White 12*. Professor JONES.

(*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. **Geometry, Algebra, and Trigonometry.** 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. **Geometry, Algebra, and Trigonometry.** 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*. 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. Assistant Professor SNYDER.

Elementary Courses Prescribed for Students in Engineering and Architecture, and open to Election by Students in Arts.

2. **Analytic Geometry and Calculus.** For freshmen in Engineering and Architecture.

Eighteen sections daily, ex. Sat.

(*a*) Analytic Geometry. Credit, 5 hours first term.

(*b*) Differential Calculus. Credit, 2 hours second term.

(*c*) Integral Calculus. Credit, 3 hours second term.

At 8—C. E. A., *I*, Assistant Professor FITE, *White 22* (S., 11); C. E. A., *II*, Dr. HASKINS, *White 24;* C. E. A., *III*, Assistant Professor SNYDER, *White 17;* C. E. A., *IV*. Mr. CARRUTH, *White 18A.*

At 9—M. E., *C.F.*. Professor MCMAHON, *White 18;* M. E., *C.F.*, Assistant Professor HUTCHINSON, *White 24;* M. E., *C.F.*, Assistant Professor SNYDER, *White 17;* M. E., *C.F.*, Mr. COLPITTS, *White 18A.*

At 10—M. E., *B.E.*, Assistant Professor HUTCHINSON, *White 24;* M. E., *B.E.*, Mr. EDMINSTER, *White 21;* M. E., *B.E.*, Mr. CARRUTH, *White 18A;* M. E., *B.E.*, Mr. SHARPE, *White 22.*

At 11—M. E., *A*, Professor WAIT, *White 22;* M. E., *A*, Mr. EDMINSTER, *White 21.*

At 12—M. E., *D*, Professor WAIT, *White 22;* M. E., *D*, Mr. EDMINSTER. *White 21;* C. E. A., *V*, Assistant Professor FITE, *White 17;* C. E. A., *VI.*, Dr. HASKINS, *White 24.*

4. **Analytic Geometry and Differential Calculus.** For freshmen in Engineering and Architecture.

Second Term. Daily ex. Sat., *White 21*, Mr. SHARPE.

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 to 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 21.* 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*. Assistant Professor HUTCHINSON.

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 studied, 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. M., W., F., 9, *White 22*. Professor WAIT.

Lines of the first and second orders. Two hours. Surfaces of the first and second orders. One hour.

16. **Elements of Infinite Series and Products.** Various criteria for convergence and divergence. Detailed study of the most important series, their use for numerical computation, and the limit of error in the approximations. Expression of trigonometric and other functions as infinite series or products. Divergent series and the asymptotic representation of functions by means of them. Useful in many of the courses that follow, and in applied mathematics. Two hours. Assistant Professor HUTCHINSON.

17. **Advanced Work in Calculus.** Requires courses 2 or 10, and 12. Necessary to all the courses that follow.

(*a*) Differential Calculus. T., Th., 9, *White 22*. Professor WAIT.

(*b*) Integral Calculus. Hedrick's translation of Goursat's Cours d'analyse mathematique, volume one, will be used as a text. Two hours. Assistant Professor FITE.

[18. **Introduction to the Theory of Groups.** This course includes a discussion of the important properties of abstract, substitution, and linear groups; the Galois theory of algebraic equations; and the theory of group characteristics. Three hours. Assistant Professor FITE.]

19. **General Theory of Algebraic Curves and Surfaces.** Requires courses 12, 13, 15, 17. Necessary to course 33, and very useful in many of the courses that follow.

[(*a*) Algebraic Plane 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 orders. Three hours. Assistant Professor SNYDER.]

[(*b*) Theory of Surfaces. Requires courses 13, 15, 17, 19*a*, 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 formulæ 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. Assistant Professor SNYDER.]

(*c*) **Algebraic Twisted Curves.** A detailed study of cubics and quartics will be followed by the derivation of the formula connecting the characteristics of a general twisted curve. The principal subsequent topics will be the development of involutions and point systems on a given curve, parametric representation, rational curves, and birational transformations. Two hours. Assistant Professor SNYDER.

20. (*a*) **Algebraic Invariants and Theory of Polynomials.** Requires course 2 or 10, and preferably courses 11 and 13. The course will be given mainly by lecture. Among the subjects considered will be: Linear dependence, the divisibility and reducibility of polynomials, linear transformation, the theory of elementary divisors and its application to collineations, the transformation of bilinear and quadratic forms, and differential equations; invariants of algebraic and differential forms. Throughout the course stress will be laid on the application of the subjects treated to geometry and to mathematical physics. Three hours. Dr. HASKINS.

[(*b*) **Higher Algebra.** Continuation of course 12. It includes symmetric functions, general theory of elimination, linear transformations, elements of invariants and covariants, etc. Two hours. Professor TANNER.]

21. **Ordinary Differential Equations.** Advanced course. Requires courses 11, 25 (*a*). Introduction to the analytic theory of differential equations and to the theory of functions defined by such equations. Lectures. Two hours. Dr. HASKINS.

[22. **Non-Euclidean Geometry.** Requires courses 2 or 10, 11, 12, 13, 15, and preferably 19. Begins with some consideration of the foundations 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. Assistant Professor SNYDER.]

[23. **Continuous Groups.** Lie's Continuierliche Gruppen will be followed. Requires courses 11 and 17. Three hours.]

24. **Calculus of Variations.** Requires courses 11, 17*b*. Development of the general theory with applications to classic problems. Lectures. Two hours. Dr. HASKINS.

Only one of the two courses 21 and 24 will be given in 1905–6.

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. Two hours. Assistant Professor FITE.

[(*b*) Second year. Elliptic and Abelian Functions. The elliptic and abelian integrals studied by the methods of Riemann. The theta functions, and the inversion problem; geometrical applications to curves of genus one, and to hyperelliptic surfaces. Two hours. Assistant Professor 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.]

[30. **Quaternions and Vector Analysis.** Requires courses 12, 17, and something of mechanics. Two hours. 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; tranformation of coördinates, Klein's fundamental complexes, the quadratic complex, and the Kummer surface. Three hours. Assistant Professor SNYDER.]

Mathematical Physics.

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. Professor MCMAHON.

42. (*a*) **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. Three hours.

(*b*) Continuation of 42 (*a*). Reading course in Riemann-Weber

Die partiellen Differential-gleichungen der mathematischen Physik. Two hours. 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. 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. Three hours. Professor Trevor.

Other courses in Mathematical Physics are given by the Department of Physics.

ASTRONOMY.

Course 1 will meet the requirements of students of general science, including those who intend to qualify themselves for teaching sciences in high schools. It is a fundamental course in astronomy. It should be supplemented by Course 2.

Those desiring to pursue the subject farther for the purpose of specialization should take the various courses in the order given. Special practical work may be arranged. The higher work presupposes a knowledge of spherical trigonometry and calculus.

1. **General Astronomy.** Descriptive, physical, and historical. A comprehensive study of the heavenly bodies; their motions and mutual relations; their forms and dimensions; their composition and evolution. Methods of investigation. Astro-physics. Astronomical photography. Instruments and apparatus. Requires a knowledge of trigonometry and physics. Two hours' credit. Lectures illustrated with lantern slides and the equipment of Fuertes Observatory. T., Th., 10, *Lincoln 34*. Mr. Leland.

2. **Observations.** Uranography. Star-charts. Use of the equatorial telescope. Sketching. The sun and the planets. Double and multiple stars and clusters. Nebulae. To accompany Course 1. One hour credit; second term. One evening per week, to be arranged, at *Fuertes Observatory*. Mr. Leland.

[3. **Spherical Astronomy.** The mathematical theory of observations and instruments. Co-ordinates on the celestial sphere and their transformations. The corrections to observations; parallax, refraction, aberration, etc. The motion of the earth; precession and nutation. The theory of the determination of time, latitude, longitude, and azimuth. Eclipses and occultations. Method of least squares. Should be preceded by Course 1 or its equivalent. Three hours' credit. Mr. LELAND.]

4. **Practical Astronomy and Computation.** The determination of time, latitude, longitude, and azimuth. Observations and computation of the results. Sextant and surveyor's transit problems. Altazimuth, astronomical transit, and zenith telescope. Use of star catalogues. Should be preceded by Course 1. Three hours' credit; second term. Lectures, recitations, and observatory work. Hours to be arranged. Mr. LELAND.

If desired by a sufficient number of students, Course 4 may be made to include problems in practical navigation or nautical astronomy.

5. **Advanced Practical Astronomy.** Work along special lines. Determination of positions of stars. Double star observations. Investigation of star catalogues. Variation of latitude. Applications of the method of least squares. Supplementary reading. A course primarily for graduates, with opportunities for research. Hours and credit to be arranged. Mr. LELAND.

PHYSICS.

Lecture Course in Elementary Physics.—The instruction in the elements of physics is by means of lectures given four times a week for each term. 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 makes 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.

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 com-

plete 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 portion 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 suit 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 mechanician 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*.

Rockefeller Hall, a new building now under construction for the use of the Department of Physics, is situated on the upper side of East Avenue, opposite Goldwin Smith Hall. It consists of a lecture room wing on the south, 73 x 157 feet, which contains three lecture rooms with a seating capacity of 600, 160 and 120 respectively, a suite of seven recitation rooms, several large rooms for the storage of apparatus, an instrument maker's shop and various small rooms designed with reference to special lines of physical investigation. Parallel to this on the north is a similar wing, likewise four stories in height, which is devoted to the work in pure and applied electricity, to the laboratory for general physics, and to the photographic laboratory.

These wings are joined by a structure, parallel to East Avenue, which is 152 feet long and which contains research rooms, offices, library, periodical room, seminary room, the rooms of the elementary laboratory, and special rooms, on the upper floor, for advanced work in optics and photography.

To the east of the north wing is the dynamo laboratory of the department, a one-story structure 130 x 60 feet. The group of connected laboratories, the construction of which has been made possible by a gift of $250,000 from Mr. John D. Rockefeller, will afford opportunities for experimental work in physics, and for laboratory instruction, unequalled in this country.

1. **Introductory Lectures in Experimental Physics.** Four hours a week. M., T., W., Th., at 8, 10 or 12. First term or second term. Professors NICHOLS, MERRITT and SHEARER.

Required of students in M.E., C.E. Agr., Arch., M.D., elective for students in Arts and Sciences. *Entrance physics is not accepted as an equivalent for this course.*

5. **Recitations in Introductory Experimental Physics.** Two hours a week for one term as assigned. Required of students in Sibley College. May be elected by students in any other college. Messrs. FENNER, CRITTENDEN and WAGGONER.

6. **Recitations in Introductory Physics.** Second term; four hours a week as assigned. Required of students in C.E., may be

elected by students in other colleges. Messrs. OLSHAUSEN, WOLD, ROBERTS, and PALMER.

8. **Recitations in General Physics.** Two hours. Two recitations per week throughout the year. Assistant Professor BLAKER and Messrs. ———, ———.

This course is required of students in Sibley College and is to be taken in connection with laboratory course 14.

Course 8 may be elected by students of other colleges who have the requisite preparation.

10. **Introductory Physical Experiments.** One or two hours; one or two 2½ hour periods per week in the laboratory. Assistant Professor BLAKER, Messrs. FISHER, DORSEY, and PALMER.

Course 10 is offered especially for those students taking courses 1 and 6, but is open to those who are taking or have completed courses 1, 1 and 5, or 6 or the equivalent. One hour each term is required of students in Civil Engineering. If desired the course may begin in the second term provided the first term's work in one of the combinations noted in the preceding paragraph has been satisfactorily completed. The first term is devoted to mechanics, molecular physics and magnetism; and the second term to electricity, light and sound.

14. **Physical Experiments.** Theory and methods of physical measurements. One to six hours. The laboratory will be open M., T., W., and Th., 9–12 and 2–5, F., 2–5, and S., 9–12. Assistant Professor BLAKER, Messrs. GAEHR, GAGE, PIERCE, LEIGHTON, and RODGERS.

Course 14 is open to students who have passed satisfactorily in courses 1 or 2 (old system), or their equivalents. This course 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, electricity and magnetism. Each student devotes to the course one or more periods per week, according to the amount of credit desired. Students in Mechanical Engineering and Electrical Engineering are required to take the equivalent of two hours a week only.

18. **Practical Photography.** Two hours. Lectures and laboratory practice. First or second term. Assistant Professor MOLER.

Lectures Thursday 3:30 to 4:30 throughout the term. Laboratory practice (at hours to be arranged).

Course 18 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 Physics, 1.

19. **Advanced Photography**, with special reference to its application to research. Two hours. Laboratory practice. First term. Assistant Professor MOLER.

Students who have completed courses 1, 10 or 14, and 18, or an equivalent, will be admitted to this class.

20. [**Heat.** First half-year. Three hours. M., W., F., at 8. Assistant Professor BLAKER, 1906–07.]

21. [**Light.** Second half-year. Three hours. M., W., F., at 8. Assistant Professor BLAKER, 1906-07.]

22. **Electricity and Magnetism.** Two hours per term throughout the year. T., Th., at 8. Assistant Professor BLAKER, 1905–06.

Courses 20, 21, and 22 are intended for students who have completed the introductory courses in general physics and who desire to take up the theoretical courses which follow, or who intend to teach physics. It is suggested that such students take also laboratory courses 14 and 25.

25. **Advanced Laboratory Practice.** Two to six hours per week, at hours to be arranged, according to the needs of the student. Assistant Professor BLAKER. This is a laboratory course in general physics for students who have completed course 14, and is preparatory to the laboratory courses in general physics which follow. It is intended to meet the wants of those who expect to teach experimental physics. The experiments may be such as to require one or more laboratory periods, and the student will be encouraged to work out the details for himself as much as is possible.

[30. **Magnetism of Iron and Alternating Current Measurement.** Not given 1905–6. Professor BEDELL.]

33. **Alternating Currents.** Two hours, lectures first term. Tu., Th., at 10. Professor BEDELL.

Special attention will be given to the study of physical principles and to the development of graphical methods of analysis, as a basis for alternating current testing and for the solution of practical problems.

34. **Electrical Laboratory Practice.** Two to six hours daily. Professor BEDELL and Mr. PATTISON.

This course includes general laboratory work in applied electricity. Particular attention will be paid to alternating current testing, the measurement of power, phase difference and frequency, the study and use of condensers, and the testing of apparatus for single and polyphase circuits. In addition to the general work in direct and alternating current testing, students will be given opportunity for individual work and investigation. This course should be taken by all

students who desire to specialize in applied electricity. Open to seniors in Sibley College and to all students who have taken course 14, or an equivalent course in electrical measurement.

35. **Advanced Course in Electrical Measurement.** Professor BEDELL.

This course is for graduate students. The character of the work and hours will be arranged to meet individual needs.

36. **Standardization of Electrical Instruments.** One hour, second term. W., 8–1. Mr. PIERCE.

The comparison and standardization of direct and alternating current instruments. Students taking this course may, by permission, include in it the standardization of instruments used by them for thesis work.

38. **Electricity and Magnetism (Seminary.)** One hour, first and second term. S., 11. Professor BEDELL.

Open to students who are taking or who are especially interested in the subjects of courses 33, 34, 35, or 39.

39. **Thesis in Applied Electricity.** Two to eight hours, second term. Professors BEDELL and MOLER.

Students desiring to take theses in applied electricity, should consult in advance with the professors in charge. Open to seniors in the College of Arts and Sciences who have taken course 33 or 34, to all seniors in Sibley College who have taken course 33, 34 or a course in experimental electrical engineering, and to others who may be qualified.

40. **Recent Advances in Experimental Physics.** Professor MERRITT. One lecture a week. F., 12. 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 subject permits.

In 1905–6 about half of the time of this course will be devoted to the subject of conduction in gases and to related subjects.

41. **The Electric Transmission of Intelligence.** First term, one hour. Lectures. Sat., 12. Professor NICHOLS.

42. [**Primary and Secondary Batteries.** Second term, one hour. Lectures. Sat., 12. Professor NICHOLS.

Not given in 1905-06.]

43. **Photometry and the Physics of Illumination.** Second term, one hour. Lectures. Sat 12. Professor NICHOLS.

[44 **The Measurement of Current, Electromotive Force and Resistance.** Second term, one hour. Lectures. Sat., 12. Professor NICHOLS.

Not given 1905–06.]

45. **Advanced laboratory practice and thesis work in general physics.** This course is open to students who have completed courses 1, 5 or 6 and 14. The amount of time to be given and hours of attendance will be arranged to suit each individual case. Professors NICHOLS and MERRITT, and Assistant Professor SHEARER.

46. **Theory of Light.** Four hours. Assistant Professor 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.

47. [**Theory of Heat.** Four hours. Assistant Professor SHEARER. Three lectures a week on the kinetic theory of matter, molecular physics and thermodynamics. One experimental lecture a week by members of the class under the direction of the instructor.]

48. **Wave Motion.** Two hours. Lectures on the theory of wave motion in optics, electricity, etc., with problems suited to the requirements of the class. Assistant Profesor SHEARER.

49. **The Radiation of Energy.** Two hours throughout the year at times to be arranged. Dr. OLSHAUSEN.

50. **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. Professor NICHOLS.

Course 50 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.

51. **Theoretical Physics.** Mechanics and Thermodynamics. Professor MERRITT. Three hours lectures and one hour seminary throughout the year. Honrs to be arranged. Probable time, M., T., W., Th., at 11 or 12.

52. [**Theoretical Physics.** Electricity and Magnetism. Professor MERRITT. Three hours lectures and one hour seminary throughout the year.]

Courses 51 and 52, together with courses 46 and 47, are intended to give an outline of theoretical physics for students who expect to specialize in this subject.

53. **Electricity and Magnetism.** Professor MERRITT. Lectures and Seminary. For advanced students who have completed course 52 or its equivalent. This course is capable of modification to suit the needs of those electing it.

CHEMISTRY.

Inorganic Chemistry. The elements of inorganic chemistry are taught by lectures, laboratory work and recitations from a text-book. The instruction conforms in the main to the course outlined by the College Entrance Examination Board.

Advanced courses of lectures and laboratory work are offered in inorganic chemistry. These courses are also open to all who have completed certain preliminary work. The lectures deal with the study of the properties of all the elements and their more important compounds, and they are based on 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 synthetic inorganic chemistry, but also in advanced spectroscopic chemical analysis and gas analysis.

Qualitative and Quantitative Analysis. Three beginning courses are given in chemical analysis. These vary in scope aud length and are designed to meet the different needs of the students of chemistry, medicine, and engineering.

Qualitative analysis begins with the study of those reactions of the elements and their compounds that 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. Instruction in this field is continued in an advanced course given to students that have completed the study of elementary organic and physical chemistry.

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 operation of the analytical work.

Advanced Quantitative Analysis. For students intending to devote themselves chiefly to the study of chemistry there are provided advanced courses iu 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.

A course of lectures upon selected topics in Advanced Quantitative Analysis is also offered.

Special Courses in Chemical Analysis. These comprise courses in gas analysis, spectroscopic chemical 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.

Micro-Chemistry. Four courses are offered, the object being to acquaint the student with the microscope and its application to the investigation of chemical phenomena and of problems arising in the industries. A fundamental course upon which the remaining courses are based deals with the microscope and its accessories and microchemical methods, the use of the microscopes of various forms and constructions, the application and use of the micropolariscope iu its different forms, the microspectroscope, the micrometer and micrometric methods, the use of illuminators both vertical and oblique, photo-micrographic stands and cameras, etc. Practice is given in methods of solution, decantation, filtration, crystallization, sublimation and distillation as applied to the examination of minute amounts of material, in the use of elective stains and special reagents, in the making of permanent preparations, in the use of the centrifuge, grinding and polishing machines, etc. Following the instruction in microchemical methods the later courses deal with the analysis of inorganic compounds, organic compounds, alloys, paper, the examination of foods, food products, textiles, etc. A special laboratory has been arranged for microchemical work. It is provided with work tables of special construction placed in windows so as to afford ample light, with work tables of the usual laboratory form along the walls, with gas, blast, water, electric current and electric light. The equipment of this laboratory in apparatus, reagents and material for study is exceptionally complete, rendering the facilities for microchemical research in all branches unexcelled.

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, recitations and laboratory work, supplemented by frequent written examinations. The lectures are fully illustrated by experiments, specimens of the compouuds 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.

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 phys-

ical 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 accompanied in each case by laboratory practice. Special laboratories are provided for practical work in sanitary chemistry. These laboratories are exceptionally well equipped with the most modern apparatus, both chemical and optical. Other laboratories are provided for the bacteriological examination of foods, water, etc. The bacteriological laboratories include a general work room with table space for ten students, a sterilizing and preparation room, and an incubator room. The material equipment includes a large and small hot air sterilizer, two steam sterilizers, one large autoclave, two large incubators, and special closets for cultures at room and at low temperatures. These laboratories have been specially equipped with a view to supplying every need for research in water analysis, water purification, and chemical bacteriology. A large collection of pure and adulterated food products supplies material for those desiring to specialize in Board of Health work or in Domestic Economy. 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.

Agricultural Chemistry. An elementary course, consisting of lectures, laboratory practice and recitations, is given during the second half-year. It treats of the fertility of the soil, the relations of soils to plant growth, and the composition of plants and fertilizers. The laboratory practice is intended to familiarize the student with the chemical and physical properties of soils and fertilizers.

Two advanced courses are given during the first half-year; one on dairy chemistry and one on the chemistry of plant and animal life.

A series of elementary lectures is given for the winter course students.

A laboratory course in chemical analysis of agricultural products

extends through the year. Special attention is given to the methods of analysis recommended by the Association of Official Agricultural Chemists.

Seminary. A general seminary, attended by the members of the staff of instruction in the Department of Chemistry and by graduate students and seniors specializing in chemistry, meets once each week throughout the year. Members of the seminary report upon recent advances and selected topics in chemical science.

The Chemical Laboratory. The Laboratory, named Morse Hall, consists of two buildings, with floor space of over 43,000 square feet. The buildings are connected by corridors on each floor. The laboratory 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 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 micro-chemical 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 for 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. 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. Air blast is conducted wherever required from a 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 100 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, sanitary, 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, sucn as the manufacture of the various acids, alkalies and salts, pigments, glass, pottery, soap, stearine and glycerine, and the chemical processes of metallurgy, 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 courses in chemistry are offered as below.

Bracketed courses are not given in 1905–1906.

The following course of study is recommended for students specializing in chemistry, and deviation from the plan should be made only with the approval of Professor Dennis. This special course in chemistry is open to all students registered in the College of Arts and Sciences, but those intending to pursue it are advised to defer the study of chemistry until after entering the University, and to take before entrance solid geometry, advanced algebra, plane and spherical trigonometry, two years of German, two years of French, and four years of preparatory English instead of three. Permission to take the

courses recommended in another college may be obtained under the provisions of paragraph 6 of the requirements for the degree of Bachelor of Arts. (See page 88.)

First Year.	No. Course.	1st Term.	2d Term.
Introductory Inorganic Chemistry	1	6	–
Qualitative and Quantitative Analysis	7	–	6
Mathematics: Analytic Geometry, Differential Calculus, Integral Calculus	2	5	5
Physics	1	4	–
Physics	6	–	4
Drawing (Sibley College) M.D.	1	2	3

Second Year.	No. Course.	1st Term.	2d Term.
Organic Chemistry	30	6	6
Microchemical Methods	71	2	–
Spectroscopic Chemical Analysis	17	–	2
Mineralogy	11	3	3
Mechanics of Engineering (Civil Engineering)	20	5	5
Physics	14	2	2

Third Year.	No. Course.	1st Term.	2d Term.
Introductory Physical Chemistry	50	3	3
Physico-chemical Methods	51	3	3
General Economic Geology	32	3	3
Assaying	18	2	–
Gas Analysis	19 and 20	3	–
Advanced Qualitative Analysis	9	–	3
Advanced Quantitative Analysis	14	–	4
Quantitative Analysis—Lectures	15	–	2
Mechanical Laboratory (Sibley Coll.) X.E.	11	4	–

Fourth Year.	No. Course.	1st Term.	2d Term.
Electrochemistry	56a	3	–
Electrochemistry	56c	2	2
Potable Water	66	–	2
Water Analysis	70	–	3
Research	95	At least 4 hrs. per term	

In filling out the remainder of his time in the fourth year the student may elect advanced courses either in Chemistry, or in other departments of the College of Arts and Sciences, or, under the regular restrictions, in Sibley College.

Introductory Inorganic Chemistry.

1. **Introductory Inorganic Chemistry.** Six hours. Either term.

(a) Lectures, M., W., F., 11, *Ch. L. R.*, *1*. Professor DENNIS.

(b) Laboratory practice (two periods of 2½ hours each), and one recitation per week. Professor DENNIS and Mr. SNOWDON, Messrs. BROWN, and HAWKINS and ——.

For students registered in the College of Arts and Sciences, at hours to be arranged.

For students registered in the College of Medicine, Veterinary College, College of Agriculture, College of Civil Engineering, and Sibley College, at hours indicated in their respective schedules.

Students in the College of Arts and Sciences, may, if they so desire, elect the lectures alone (credit 3 hours), and may take the recitations and laboratory practice (credit 3 hours) in some subsequent term.

Examinations for those unavoidably absent from the term examination in course 1, or who have conditions to remove in this course, will be held at 2:00 P. M. on the day before instruction begins in the Fall, and also in the month of May at a date to be announced. No special examinations will be given at other times.

Analytical Chemistry.

6. **Qualitative and Quantitative Analysis.** Five hours. Either term. Required of students in Mechanical Engineering. Lectures, T., Th., 9, *Ch. L. R. 1*. Laboratory practice, M., W., F., 2–5; or T., Th., S., 10–1.

Qualitative Analysis. Dr. BROWNE and Messrs. RANDOLPH, BADER, TURRENTINE and MEHLING.

Quantitative Analysis. Mr. CUSHMAN and Messrs. RANDOLPH, BADER, TURRENTINE and MEHLING.

Course 6 is open only to those who have taken course 1 or its equivalent.

7. **Qualitative and Quantitative Analysis.** Six hours. Second half-year. Students in science are advised, and those specializing in chemistry are required, to take this course instead of course 6. Lectures, T., Th., 9, *Ch. L. R. 1*. Laboratory practice, M., F., 10–1, and T., Th., 2–4:30.

Qualitative Analysis. Three hours. Dr. BROWNE and Mr. ——.

Quantitative Analysis. Three hours. Mr. CUSHMAN and Mr. ——.

Course 7 is open only to those who have taken course 1 or its equivalent.

8. **Qualitative Analysis.** Two hours. Second half-year to April 23rd. Required of students in medicine. Lecture, S., 12, *Ch. L. R. 3*. Dr. BROWNE. Laboratory practice, W., 10–1, and Th., 8–10. Dr. BROWNE and Mr. ———.

Course 8 is open only to those who have taken course 1 or its equivalent, and it is followed by course 68.

9. **Advanced Qualitative Analysis.** Three hours. Second half-year. Laboratory practice at hours to be arranged. Dr. BROWNE and Mr. ———.

This course is essentially a continuation of the qualitative work given in course 7. A study is made of the most approved methods for separating and detecting a large number of metals and acids not studied in course 7, including many of the rarer elements. In certain cases a comparative study is made of different methods designed to accomplish a given separation. Close attention is given throughout the course to the writing of equations expressing the reactions involved in the work.

Course 9 is open only to those who have taken course 30 and course 50.

14. **Quantitative Analysis.** Advanced course. Either term. Mr. CUSHMAN and Mr. KRAUSKOPF.

This course comprises ultimate organic analysis and the analysis of iron ores, iron and steel, slags, paints, lubricants, coal and coke, cements and cement materials, alloys, ores of copper, lead, zinc, mercury, manganese, tin, etc.

Course 14 is open only to those who have taken course 6 or course 7.

15. **Quantitative Analysis.** Two hours. Second half-year. Lectures on selected topics in advanced quantitative analysis. M., F., 11, *Ch. L. R. 3*. Mr. CUSHMAN.

Course 15 is open only to those who have taken course 6 or course 7.

17. **Spectroscopic Chemical Analysis and Colorimetry.** Two hours. Second half-year. Lecture, W., 11, *Ch. L. R. 3*. Dr. GEER. Laboratory practice (3 actual hours), at hours to be arranged. Dr. GEER, Mr. HAWLEY and Mr. ROBERTSON.

The laboratory instruction comprises the observation and mapping of emission spectra with the Krüss spectroscope and direct vision spectroscope, 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.

The course also includes a study of the refractometer and the polariscope.

Course 17 is open only to those who have taken course 6 or course 7, and courses 1 and 6 in Physics.

18. **Assaying.** Three hours. First half-year. Lectures and laboratory practice. Lecture, W., 11, *Ch. L. R. 3*. Laboratory practice at hours to be arranged. Mr. CUSHMAN, and Mr. ———

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 and silver ores and of bullion.

Course 18 should be preceded by course 6 or course 7 and by a course in Mineralogy.

19. **Qualitative and Quantitative Gas Analysis.** One hour. First half-year. Lecture, M., 11, *Ch. L. R. 3*. Dr. BROWNE.

20. **Technical Gas Analysis.** Two hours. First half-year. Laboratory practice at hours to be arranged. Dr. BROWNE, Mr. HAWLEY and Mr. ROBERTSON.

Instruction is given in the analysis of gas mixtures with the apparatus of Honigmann, Bunte, Orsat, Lunge and Hempel; in the complete analysis of flue gas, illuminating gas, generator gas, acetylene and air; in 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. Within certain limits the work may be selected to suit the requirements of the individual student.

Course 20 is open only to those who have taken course 6 or course 7 in Chemistry and courses 1 and 6 in physics.

Organic Chemistry.

30. **Organic Chemistry.** Six hours throughout the year. Lectures and written reviews. M., W., F., 9, *Ch. L. R., 3*. Laboratory practice (7½ actual hours) in sections, M. and W., 1 to 5:30; T. and Th., 1 to 5:30, F., 1 to 5:30 and S., 8 to 1. Professor ORNDORFF, Mr. DELBRIDGE, and Messrs. PAPPE and RAY.

The lectures and written reviews 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, reactions and relations.

Course 30 is open only to those who have had course 1 and course 7.

31. **Organic Chemistry.** Three hours throughout the year.

Lectures and written reviews. M., W., F., 9, *Ch. L. R.*, *3*. Professor ORNDORFF.

This course is identical with the lectures and written reviews of course 30.

32. **Elementary Organic Chemistry.** Two hours. Second half-year. Lectures and written reviews. T., F., 12, *Ch. L. R.*, *3*. Professor ORNDORFF.

This course is required of first year students in medicine, and is preparatory to course 40.

33. **Special Chapters in Organic Chemistry.** Two hours throughout the year. Lectures, T., Th., 9, *Ch. L. R.*, *3*. Professor ORNDORFF. 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.

Course 33 is open only to those who have taken Course 30.

34. **Advanced Organic Chemistry.** Laboratory practice. Hours to be arranged. Professor ORNDORFF and Mr. DELBRIDGE.

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.

35. **The Coal Tar Dyestuffs.** One hour. First half-year. Lectures. Th., 11, *Ch.*, *L. R.*, *2*. Professor ORNDORFF.

The coal tar dyestuffs have become so important, from both a theoretical and a 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.

Physiological Chemistry.

40. **Physiological Chemistry.** Two hours. First half-year. Lectures and written reviews. M., W., 8, *Ch. L. R. 3*. Mr. DELBRIDGE.

This course is the continuation of course 32, and is required of students in medicine.

41. **Physiological Chemistry.** Three hours. First half-year. Laboratory practice. Mr. DELBRIDGE and Mr. PAPPE.

This course is required of students in medicine.

42. **Physiological Chemistry.** Advanced course. Laboratory practice. Hours to be arranged. Professor ORNDORFF and Mr. DELBRIDGE.

Inorganic Chemistry.

46. **Inorganic Chemistry.** Advanced course. Two hours throughout the year. Lectures. T., Th., 11, *Ch. L. R. 3*. Professor DENNIS.

The chemical elements are discussed in the order in which they occur in the Periodic Law of Meudeléeff, 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.

Course 46 is open only to those who have completed courses 1, 7, and 30, and have completed or are taking courses 50 aud 51.

47. **Inorganic Chemistry.** Laboratory practice. Hours to be arranged. Professor DENNIS and Mr. HAWLEY. The preparation and purification of inorganic compounds and the extraction of the rarer elements from ores and minerals.

Course 47 is designed to accompany course 46, but either course may be taken separately.

Physical Chemistry.

50. **Introductory Physical Chemistry.** Three hours throughout the year. Lectures. M., W., F., 9, *Ch. L. R.4*. Dr. GEER.

The object of this course is to give a simple systematic presentation of modern chemical theory. The effect of the variables met in chemical work is studied in detail; from a consideration of typical cases many of the laws of chemistry are derived, and the methods employed in chemical practice critically examined.

Courses 50 and 51 are open only to those who have had course 30, Physics 14 and Mathematics 2.

51. **Physico-Chemical Methods.** Three hours a week throughout the year. Laboratory practice. Dr. GEER and Mr. KELSEY.

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.

This course should be taken in connection with course 50.

52. **Advanced Physical Chemistry.** Three hours throughout the year. Lectures. M., W., F., 10, *Ch. L. R., 4.* Professor BANCROFT.

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 a week of laboratory practice, course 57.

This course must be preceded by course 30.

53. **Mathematical Chemistry.** Three hours per week at times to be arranged. Lectures, and problems for practice. Professor TREVOR.

An exposition of thermodynamic theory of chemical equilibria, comprising the mathematical formulation of the general principles of thermodynamics, and application of these principles to material systems of one, two, and three independently variable components. The development of the theory follows the classification of the Phase Rule, and includes treatment of the thermodynamic properties of homogeneous masses, the multifarious processes allied to evaporation, solubility, and fusion, the properties of critical states, and the equilibria of reversible chemical reactions. This general treatment is accompanied by an account of the attempts that have been made to integrate the differential equations of the theory, whereby the theory of ideal gases, the theory of dilute solutions, and the integral theory of the equilibria of reversible reactions are obtained. Throughout, especial attention is given to application of the criteria of thermodynamic equilibrium and stability; and graphical representations of relations are freely employed. The course presupposes an acquaintance with differential and integral calculus.

54. **Advanced Mathematical Chemistry.** Hours to be arranged. Prosessor TREVOR.

An examination of special details of the thermodynamic theory of chemical equilibrium together with supplementary reading and the study of new problems. Calculus is presupposed.

[55. **Electrochemistry.** Two hours throughout the year. Lectures, T., Th., 10, *Ch. L. R. 4.* Professor BANCROFT.

The historical development of the subject with special reference to the theory of the voltaic cell. For advanced students in chemistry and physics.]

56. **Applied Electrochemistry.** Any one of the three divisions may be elected independently of the others.

(a) Three hours. First half-year. Lectures, M., W., F., 12, *Ch. L. R. 4.* Professor BANCROFT and Mr. WHITE. Electrolytic extrac-

tion and refining of metals; theory of plating; the preparation of compounds in the electric furnace; electrolytic manufacture of inorganic and organic compounds; theory and practice of storage cells. Students taking this course are advised to supplement the lectures by laboratory practice, course 56b or course 56c.

Course 56a is open only to those who have taken course 6 or course 7.

(b) Two hours a week. First half-year. Laboratory practice. Mr. WHITE. Determination of current and energy efficiencies in electrolytic and electrothermal work; preparation and tests of storage batteries.

This course is open to engineering students and to students registered in the College of Arts and Sciences, but it must be preceded by course 6 or course 7. Students specializing in chemistry are expected to elect course 56c instead of course 56b.

(c) Two hours a week throughout the year. Laboratory practice. Professor BANCROFT and Mr. WHITE. Preparation of electrical standards and measurement of electrical constants; qualitative study of conditions affecting electrolytic reactions; determination of current and energy efficiencies in electrolytic and electrothermal work; preparation and tests of storage batteries; electrolytic preparation of inorganic and organic compounds.

Course 56c is intended for students specializing in chemistry and is open only to those who have taken courses 50 and 51.

57. **Laboratory Practice.** Advanced course. Hours and work to be arranged. Professor BANCROFT and Mr. KELSEY.

Students may elect work in mass law, reaction velocity, efficiency, conductivity, electrometric measurements, high and low temperature measurements with special reference to course 52; in electrometric determinations with special reference to course 55; in electrochemical synthesis with special reference to course 56; in metallography; in the application of physical chemical methods to organic chemistry; or in advanced problems and research work.

The prerequisites for this course will be determined in each case by the professor in charge.

Sanitary Chemistry, Toxicology, and Microchemical Analysis.

(The courses under this heading, with the exception of course 68, are open only to those who have had courses in Introductory Inorganic Chemistry and Elementary Qualitative and Quantitative Analysis.)

65. **Foods, Beverages and Food Accessories.** Two hours. First half-year. Lectures. W., F., 12, *Ch. L. R. 2.* Assistant Professor CHAMOT.

Source, preparation for use, chemical composition, assimilability, digestibility, relation to the public health, adulteration, alteration, sterilization and preservation, dietaries and dietary standards.

66. **Potable Water.** Two hours. Second half-year, Lectures. W., F., 12, *Ch. L. R.* 2. Assistant Professor CHAMOT.

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.

[67. **Toxicology.** Two hours. Lectures. Assistant Professor CHAMOT.

A brief review of 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.]

68. **Toxicology.** One hour. April 28th to end of year. Laboratory practice. W., 10-1 ; Th., 8–10 ; Lecture T., 8. Assistant Professor CHAMOT and Mr. JENNINGS.

This course has been planned to meet the needs of the students in the College of Medicine, and is intended to serve as an introduction to the methods employed for the separation and identification of the common poisons.

Course 68 is open only to those who have completed the courses in chemistry required of first year students in medicine.

69. **Food Analysis.** Three hours. First half-year. Laboratory practice. M., W., F., afternoons. Assistant Professor CHAMOT and Mr. JENNINGS.

Instruction is given in the examination of foods by chemical and optical methods, with reference to adulteration, imitation, and alteration ; the examination of foods for artificial coloring matters, preservatives, and poisonous substances. This course comprises a study of milk, infant and invalid foods, comestible fats and oils, cereal products and starchy foods, canned goods, jellies, etc. The course may be extended so as to include the analysis of alcoholic beverages.

70. **Water Analysis.** Second half-year. Three hours. Laboratory practice, M., W., F., afternoons. Assistant Professor CHAMOT and Mr. JENNINGS.

Instruction in the methods employed for the examination of waters with reference to their fitness for household purposes, steam boilers, etc. The testing of filters and water purifying devices for efficiency.

Course 66 should be taken in connection with course 70.

71. **Microchemical Methods.** Two hours. First half-year. Laboratory practice. T., 8:30–1. Assistant Professor CHAMOT.

The aim of this course is to familiarize the student with the use of the microscope and its accessories, and with microchemical methods and apparatus as applied to chemical investigations.

72. **Microchemical Analysis.** Elementary course. Three hours, either term. Laboratory practice. Assistant Professor CHAMOT.

Practice in the examination and analysis of inorganic substances containing the more common elements with reference to rapid qualitative methods and the analysis of minute amounts of material.

Course 72 is only open to those who have taken course 71.

73. **Microchemical Analysis.** Advanced course. Hours to be arranged. Laboratory practice. Assistant Professor CHAMOT.

This course may be arranged so as to comprise the analysis of inorganic substances containing the rarer elements or of organic compounds, or the work may, if desired, be devoted to investigation.

Course 73 is open only to those who have taken courses 71 and 72.

74. **Microscopical Examination of Foods.** Two hours, either term. Laboratory practice. Assistant Professor CHAMOT.

Instruction in the use of the microscope in the examination of foods and condiments for the purpose of detecting adulterations and admixtures.

Course 74 is open only to those who have taken course 71.

Agricultural Chemistry.

81. **Agricultural Chemistry.** Six hours. Second half-year. General course. Three lectures, M., W., F., 11, *Ch. L. R.*, No. 4. Two laboratory periods, T., Th., 2–4:30, and one recitation, F., 8. Assistant Professor CAVANAUGH.

This course treats of the "Fertility of the Land," and deals with such subjects as the composition of plants, the sources of their food, the chemical and physical properties of soils, and the composition and behavior of fertilizers and manures.

Course 81 is open only to those who have had course 1.

82. **Agricultural Chemistry.** Two hours. First half-year. Advanced course. Lectures, W., F., 10, *Ch. L. R.* No. 2. Assistant Professor CAVANAUGH.

83. **Agricultural Analysis.** First half-year. Hours by appoint-

ment. Laboratory practice. Foods and feeding stuffs, and dairy products. Assistant Professor CAVANAUGH.

Course 83 is open only to those who have had course 1 and course 6 or 7.

84. **Agricultural Analysis.** Second half-year. Hours by appointment. Laboratory practice. Soils, fertilizers, insecticides, and fungicides. Assistant Professor CAVANAUGH.

Course 84 is open only to those who have had course 1 and course 6 or 7.

85. **Dairy Chemistry.** Two hours. First half-year. Lectures, T., Th., 8, *Ch. L. R.* No. 4. Laboratory practice in Dairy Chemistry is given in course 83. Assistant Professor CAVANAUGH.

89. **Advanced Agricultural Analysis.** This course is designed to meet the needs of those doing research work in agricultural chemistry. Assistant Professor CAVANAUGH.

Seminary.

90. **Seminary.** One hour a week throughout the year. Credit, one hour.

This is a general seminary in which graduate students with major subjects in chemistry, and seniors specializing in chemistry, are expected to take part.

Research.

95. **Research.** Seniors specializing in chemistry are expected to elect at least four hours per term in research under the direction of some member of the staff of instruction.

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 philogeny, as applied in these topics. Aside

from the elementary courses these courses 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 developmental 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 gardner 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, and 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 in order that there may be time to take the advanced courses necessary for specialization.

Students wishing to specialize in natural history will find it economical in time and profitable for education to elect elementary courses in botany, zoology and geology before specializing in either, and those expecting to take plant physiology should have chemistry and physics.

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 25. 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. Students in agriculture register in the second section (Thursday and Friday); other students register in either section. Professor ATKINSON, Dr. DURAND and Mr. ———

2. **Special Morphology, Taxonomy and Adaptation of Higher Plants.** Continues from course 1. Second half-year beginning March 27. 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. ———.

3. **Dendrology.** Special course for engineering students, but open by special permission to students in Arts. The morphology and taxonomy of trees. The structure and development of wood. The qualities and use of woods. First half-year to Christmas vacation. Lectures, one hour per week, Th., 9. Demonstrations and laboratory work, two hours per week. Section *a*, F., 2–4; section *b*, S., 9–11. Assistant Professor ROWLEE and Mr. ———. *Botanical Lecture Room.* The diseases of timber and forest trees. From Christmas vacation to the end of the term. Lectures, one hour per week. Demonstrations and laboratory work, two hours per week. Hours are the same as above. Professor ATKINSON and Mr. JACKSON.

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. SMITH.

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.

Advanced Undergraduate Courses.

These advanced courses may be elected in any order which the student chooses, the only prerequisite being courses 1 and 2. They are also open to graduate students.

Comparative Histology and Systematic Botany.

7. **Taxonomy and Phylogeny of Angiosperms.** Three hours through the year. Lectures, T., 9. Laboratory work by appointment. 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 tissue. Kinds of tissue. Comparative study of vascular tissue. Secondary thickening. Lectures, F., 9. Laboratory work, Friday afternoon and Saturday morning. Dr. WEIGAND.

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. Prerequisities, courses 1, and 2. Course 5 may advantageously precede this course. Lectures, T., 8. Laboratory work, Friday afternoon and Saturday morning. Assistant Professor ROWLEE and Mr. SMITH.

Not to be given in 1906–7, but offered in 1905–6.

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. Lab-

oratory work Monday and Wednesday afternoons. Professor ATKINSON and Dr DURAND. Prerequisites, courses 1 and 2. Offered in 1905–6; alternates with course 12.

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 Monday and Wednesday afternoons. Professor ATKINSON and Mr. JACKSON. Prerequisites, courses 1 and 2.

[12. **Taxonomy of the Pteridophytes, Bryophytes, and Algae.** Three hours throughout the year. Lecture, one hour, Th., 11. Laboratory, two hours, Friday afternoon and Saturday morning. The laboratory work will consist of a study of typical genera, practice in taxonomy, and field work. Dr. DURAND. Alternates with course 10.]

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, spermagensis, oogensis, 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 or in problems of plant pathology. The periods are arranged as follows, but are subject to change in special cases:

14*a*. **General taxonomic survey of the fungi**. Four hours through the year; or eight hours for the first half-year. Should follow course 11, or in special cases may be taken as a parallel course. Hours by appointment. Professor ATKINSON and Mr. JACKSON.

14*b*. **Research**; monograph of some genus or a limited number of genera; or some monographic study of development, or of plant pathology; 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. Hours by appointment. Professor ATKINSON.

Plant Physiology..

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. Prerequisite, courses 1 and 2, and in addition, one of courses 8, 10, or 11 (or an equivalent). Hours by appointment. Professor ATKINSON and Mr. REDDICK. 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; 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.

Botanical Seminaries.

18. **Seminary in Embryology, Mycology, Physiology, etc.** Weekly seminaries 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. One hour. By appointment. Professor ATKINSON.

19. **Seminary of Comparative Histology and Taxonomy of the Angiosperms.** Weekly seminaries 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 connec-

tion with similar courses offered by the Department of Neurology 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 session 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 studeuts; 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 studeuts for special investigation in the study of the life history of insects, and for experiments in applied entomology.

1. **Invertebrate Zoology.** General course. First half of the first half-year, Credit, 2 hours. M., W., F., 10, *White 12*. Professor COMSTOCK; and one practical exercise by the class in sections. 1st section, W., 2–4:30; 2d section, F., 2–4:30, *White 20*. Dr. MACGILLIVRAY, Dr. RILEY and Mr. HEADLEE.

This course is followed by course 2 in Vertebrate Zoology, which occupies the corresponding hours in the last half of the first half-year.

2. **Morphology of Invertebrates.** Special laboratory course. T., 8–5, Th., 8–1, *White 20.* Dr. MACGILLIVRAY.

3. **General Entomology.** Lectures on the characteristics of the orders, sub-orders, and the more important families and on the habits of representative species. Second half-year. Credit, 2 hours or 3 hours. M., W., 10. *White 12,* Professor COMSTOCK; and one practical exercise in sections for those who have not had courses 4 and 5. W., F., 2–4:30, *White 20.* Dr. MACGILLIVRAY, Dr. RILEY and Mr. HEADLEE.

Course 3 is open only to students who have taken course 1.

4. **Elementary Morphology of Insects.** Laboratory work. First half year. Credit, 3 hours. M., T., 8–5, W., Th., F., 8–1, *White 20.* Dr. MACGILLIVRAY and Dr. RILEY.

5. **Elementary Systematic Entomology.** Laboratory work. Credit, 2 hours. M., T., 8-5, W., Th., F., 8–1, *White 20.* Dr. MACGILLIVRAY and Dr. RILEY.

Course 5 is open only to students who have taken course 4, and are taking or have taken course 3.

6. **Advanced Systematic Entomology.** Laboratory work. Credit, 3 hours. T., 8–5, Th., 8–1, *White 20.* Dr. MACGILLIVRAY.

7. **Histology of Insects.** Laboratory work. Introductory course. M , 8–5; W., F., 8–1, *White 12.* Dr. RILEY.

Course 7 is open only to students who have taken courses 4 and 5.

10. **Classification of the Coccidæ.** A course designed to familiarize the student with the more injurious species of scale insects, the method of preparing specimens for study, and the systematic arrangement of the species. Lectures and laboratory work. Second half-year. T., 11–1, 2–5, *White 20.* Credit, 2 hours. Dr. MACGILLIVRAY.

Course 10 is open only to students who have taken courses 4 and 5.

11. **Morphology and Classification of the Arachnida.** Special laboratory course. M., T., 8–5; W., Th., F., 8–1, *White 20.* Professor COMSTOCK, Dr. MACGILLIVRAY and Dr. RILEY.

12. **Morphology and Development of Insects.** Lectures and demonstrations. Second half-year. T., Th., 9, *White 12.* Credit, 2 hours. Professor COMSTOCK and Dr. RILEY.

Course 12 is open only to students who have taken courses 1, 3, 4, and 5. Students are advised to take course 7 also before taking this course.

13. **Research in Entomology.** Advanced laboratory course, special work arranged with reference to the needs and attainments of each student. M,, T., 8–5; W., Th., F., 8–1, *White 20.* Professor COMSTOCK, Dr. MACGILLIVRAY and Dr. RILEY.

14. **Seminary.** The work of an entomological seminary is carried on by the *Jugatæ*, an entomological club which meets for the discussion of current literature, and of the results of investigations. Attendance at the meetings may be counted as laboratory work. M., 4–5, *White 12*.

Related Courses in Another College.

Economic Entomology. Second half-year. T., Th., 10. See Agriculture, course 8.

Advanced Economic Entomology. Second half-year. One afternoon a week by appointment. See agriculture, course 9.

NEUROLOGY, AND VERTEBRATE ZOOLOGY

Courses 2 to 7 are open to Freshmen.

The laboratories and lecture-rooms of the department occupy the entire north wing of McGraw Hall. The museum is in the central portion of the building on the main floor and in the first gallery.

Courses of Instruction. With all, practical work constitutes an essential feature. With Vertebrate Zoology and Neurology, certain exercises are in the form of practicums, 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 (more than 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, stickleback, 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. In addition to ordinary forms, there are readily obtained living necturus, amia, and two kinds of lamprey. 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 vertebrate brains and cerebral topography, unusual facilities are offered in both material and literature.

The following courses are offered in 1905–1906:

2. **Vertebrate Zoology.** Second half of the first term. Credit, 2 hours. Three lectures per week, Monday, Wednesday and Friday at 10. One practicum, the class in two sections, Wednesday and Friday, 2–4:30. At the practicums are dissected representative forms, including necturus, lamprey, ray, shark, etc.; sections of the lancelet are studied under the microscope. Professor WILDER and Mr. SHELDON.

Course 2 should be preceded by course 1 in Entomology and Invertebrate Zoology.

3. **Neurology.** Second term. Credit, 2 hours. One lecture. Thursday at 11. One practicum, the class in two sections, Thursday, 8–10:30, and Saturday, 9–11:30. There are considered (a) the various modifications of the vertebrate brain, beginning with that of the acanth shark (*Squalus acanthias*); (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. There is given a demonstration of the methods of 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 1,500 preparations distributed as follows, in round numbers: Human adults and children, 420; human embryo, fetal and at birth, 213; apes and monkeys, 282; other mammals, 400; other vertebrates, 185. See also course 7. Professor WILDER, Mr. WRIGHT, and Mr. SHELDON.

Course 3 should be preceded by courses 2 or 4, or by course 8 in the Medical College.

4. **Anatomic Methods and Dissection of the Cat.** First term. 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, in preparation for a medical course, desire to gain manipulative skill and familiarity with mammalian structure. Mr. WRIGHT.

5. **Comparative Anatomy.** Second term. Credit, 3 hours. Lectures and laboratory work at hours to be arranged. The several systems of organs are considered in turn with reference to their structure, development, evolution and homology. Wiedershiem's "Vertebrates" is used as a text. Dr. REED.

Course 5 must be preceded or accompanied by at least one of the courses 2, 4 or 6.

6. **Systematic and Economic Vertebrate Zoology.** Three hours during the year. One lecture Mondays at 8 and five hours of laboratory and field work in two sections: A. Thursday 2—4:30 and Saturday 8—10:30; B. Friday 2—4:30 and Saturday 10:30—1. The lectures discuss the principles of classification and nomenclature, the characters and relationships of groups, and the habits, life-histories and economic value of the common Vertebrates. As laboratory work representative species are examined with special reference to parts employed in classification. In the fall the fishes are studied, in the spring the birds, and the other classes in the winter. Dr. Reed and Mr. WRIGHT.

7. **Advanced Neurology.** Second term. Credit, two or more hours. Laboratory work and reading, with occasional lectures at hours to be arranged. This course runs parallel with course 3, and permits those who are interested and have time to consider forms, problems and literature that cannot be included in that course. Professor WILDER and Mr. SHELDON.

8. **Research and Theses.** Daily throughout the year. Professor WILDER, Dr. REED, Mr. WRIGHT and Mr. Sheldon.

9. **Conference or Seminary.** Fortnightly throughout the year.

For all the courses the ability to draw free-hand and to read ordinary French and German will be found very useful. A year of Latin and Greek will greatly facilitate the interpretation of the technical terms that are so largely derived from those languages.

PHYSIOLOGY.

Courses are offered in elementary, experimental, and advanced Physiology, to students of medicine, biology, and to those preparing to teach physiology in the secondary schools. The Department is

located in the east half of the second floor of Stimson Hall and is well equipped with laboratory and demonstration apparatus and appliances. The following courses are open to students in the College of Arts and Sciences. For courses open to students of medicine, see Medical College. For courses in Comparative Physiology, see Veterinary.

3. **Elementary Human Physiology.** First term. Three hours. Lectures or demonstrations upon the Physiology of the body. Designed for students who expect to teach physiology in the secondary schools, or as an introductory course for students of the Biological Sciences. Assistant Professor KINGSBURY.

9. **Experimental Physiology.** First term. Two or more University hours. (Five or more actual hours' work per week.)

An arrangement of experiments in physiology intended to meet the needs of students of the Biological Sciences. Assistant Professor KINGSBURY and ——.

Course 3 should be preceded or accompanied by Course 4 or 2 in Vertebrate Zoology. It may with advantage be preceded or followed by Course 2 or 3 in Histology and Embryology.

Course 9 must be preceded or accompanied by Course 3 or its equivalent.

7. **Research and Advanced Work in Physiology.** Eight or more actual hours per week. Assistant Professor KINGSBURY and Instructors.

MICROSCOPY, HISTOLOGY AND EMBRYOLOGY.

This department offers instruction in the theory and use of the microscope and its accessories, in photo-micrography, in vertebrate histology, and vertebrate embryology; and opportunities for advanced work in all of 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. Two projection microscopes are available for class demonstrations and for wax-plate reconstructions. 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 manipulations necessary for acquiring the facts are practiced 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 makes it possible to obtain material for the study of the development of the sheep, cow, and pig. The veterinary clinic and department of anatomy supply material for the embryology of the cat and dog. Every encouragement is given for the fullest utilization of these opportunities.

2. **Vertebrate Histology.** Second term in alternate years. Credit 4 University hours (10 actual hours of work per week. This course consists of laboratory work, lectures, demonstrations and recitations. It is designed for students wishing to learn the elements of histology and the technic of the subject, and is especially adapted for those wishing to teach and to carry on independent investigations in anatomy and zoology. It will be given in 1905–1906. Professor GAGE and assistants.

[3. **Vertebrate Embryology.** Second term in alternate years credit 4 University hours (10 actual hours of work per week.] This course consists of laboratory work, lectures, demonstrations and recitations. Especial attention is given to the methods of serial sectioning, the preparation of embryologic models and the method of embryologic interpretation. It is designed for those wishing to teach and investigate in vertebrate morphology. It will be offered in 1906–1907. Professor GAGE and assistants.]

For course 1, including microscopy, see the announcement in the Medical and Veterinary Colleges.

Courses 2 and 3 are not open to freshmen.

These courses should be preceded or accompanied by work in zoology and very advantageously followed by courses 3 and 9 in physiology, and courses 1 and 2 in psychology.

4. **Advanced Work 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 assistants.

Course 4 is open only to those who have taken course 1, 2 or 3 or the equivalent in some other university. Drawing, and a reading knowledge of French and German are indispensable for the most successful work in this course.

Subjects for investigation should be decided upon as early as possible so that material in suitable stages of development and physiologic activity may be prepared.

7. **Seminary.** Hours to be arranged. At the seminary, there will be presented reports of special methods and the results of advanced work. Professor GAGE.

8. **Structure, Development and Physiology of the Nervous System and the Organs of Special Sense.** Credit 3 hours. Professor GAGE, Dr. KERR and Dr. KINGSBURY.

This course consists of three parts: (A) Gross Anatomy with special reference to medicine and surgery, Dr. KERR; (B) Histology and Development, Professor GAGE and assistants; (C) Physiology, Dr. KINGSBURY.

The instruction in each part consists of laboratory work, demonstrations or lectures and recitations. The gross anatomy, histology and development are given during the latter part of the first term, and are immediately followed by the physiology in the first part of the second term. This course is only open to students who have done work in human or comparative anatomy and have completed course 1, 2 or 3. It is a regular part of the curriculum of second year students in medicine.

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 advanced work almost indispensable.

GEOLOGY.

The Geological Department offers elementary instruction to undergraduates in Dynamic and Structural Geology; Physical Geography, Physiography and Meteorology; Mineralogy, Crystallography and Petrography; Economic Geology; Paleontology and Historical Geol-

ogy. Provision is also made for advanced instruction in these branches for undergraduates and graduates. For graduates, primarily, courses will be given on the methods of conducting geological surveys and geological mapping; on the correlation and classification of formations; and on evolution and the history of organisms.

In providing for graduate work special consideration has been given to the exceptional natural advantages offered by Ithaca as a place for geological research. The richly fossiliferous, paleozoic rocks, in the midst of which the University is situated, have become by the great series of paleontological reports of the state the standard formations for the geology of the Continent; the Devonian system has been for the last twenty-five years the subject of minute research and discussion by members of the United States geological survey, by state geologists and by private investigators who have brought it into international importance and have made its problems of the highest scientific interest; the territory immediately surrounding Ithaca is at the present time being thoroughly studied and mapped geologically, both by the government and state surveys; the trustees have made provision for securing standard collections representing the typical sections upon which the classification of these maps is based; the Devonian laboratory of the United States Geological Survey has been transferred to Ithaca by the authority of the Director of the Survey, and special provision has been made by the Trustees for its installment, care and use in McGraw Hall. The general collections of the Museum have been selected with special reference to making a working collection for studeuts of Paleontology. The Newcomb collection of recent shells, and the large collections of Tertiary fossils collected by Professor Harris (and his own private collections of the same kind), furnish the finest kind of material for minute and thorough study of the zoological characters of such organisms which are less perfectly expressed by Paleozoic fossils.

These accumulated facilities, together with the exceptional advantages for zoological and botanical studies offered by other departments of the University, make it possible for the geological department to offer specially attractive courses for men wishing to fit themselves for teaching geology or for practical geological survey work, and for the higher fields of research work connected with the evolutional history of organisms.

Students in this or other institutions wishing to take advantage of the facilities here offered should consult Professor Williams personally at his office in McGraw Hall, or by letter addressed to the Geological Department, Cornell University, Ithaca, N. Y.

Dynamic Geology and Physical Geography. The elementary introductory courses are offered, one in physical geography, the other in geology, placing especial stress upon the dynamic side, but introducing the other aspects of geology where they have a distinct bearing upon the course. These are not primarily professional courses but are intended to meet the needs of those who, without meaning to specialize, desire a general knowledge of the earth sciences. At the same time they serve as the basis for more advanced work. These two courses together will serve as a preparation for those who expect to teach the earth sciences in secondary schools. After taking these two courses the student is able to undertake work for himself in the library, laboratory 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 elementary courses consists partly of lectures and partly of field and laboratory work; but in the advanced course 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, for example, to Niagara and to the coal mines at Wilkes-Barre. 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. In 1902 several advanced students were taken as assistants in work on Pleistocene geology, which is being done by the head of the department for the United States Geological Survey.

Mineralogy and Petrography. In these branches 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 crystal-

ized 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.

Paleontology and Stratigraphic Geology. The courses of these departments 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 Teritary 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 the Professor of Paleontology and Stratigraphic Geology 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 Teritary and younger formations necessarily occupies much time. Summers, however, have been devoted to the interests

of a school of field geology, established by the 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 caual. The opportunity for original research in almost all the different horizons of the geologic scale can properly be styled exceptionally good.

Economic Geology. The courses of instruction are both required elective. The former are for studeuts in the colleges of architecture, and 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.

The collection 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.

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.

Students expecting to specialize in the field of Natural History will find it advantageous to elect elementary courses in Botany, Zoology, and Geology before specializing in either. Those intending to become geologists should take both Elementary Chemistry (Chemistry, No. 1, and Elementary Physics (Physics No. 1 or 2) before the beginning of Junior year.

Dynamic Geology and Physical Geography.

1. **Elementary Physical Geography or Physiography.** This course is divided into two parts, 1a, lectures, and 1b, laboratory and field work. 1a may be taken without 1b.

1a. **Lectures**, two hours, M., W., 9, *Geological Lecture Room.* Professor TARR.

A study of the forms of the land, their origin, development, and influence on man. Followed by a briefer consideration of the atmosphere and the oceans. Illustrated by maps, models and lantern slides. The class is required to take an all day excursion to Enfield Glen in the fall, and to Lake Ontario in the spring. For this purpose one Saturday must be reserved each term. Voluntary excursions to Freeville, Watkins Glen and Niagara are also open to members of this class.

1b. **Field and Laboratory Work.** One hour. Either M., T., or Th., 2–4:30, *Physical Geography Laboratory.* Mr. BUTLER.

Field excursions to points near the University in the fall and spring, and indoor laboratory work with maps and models of type laud forms in the winter.

Meteorology. Course 40, three hours for second term, is correlated with course 1.

2. **Dynamic, Structural and Physiographic Geology.** Three hours throughout the year. Lectures, field work and laboratory work. Includes a study of weathering, rivers, 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 geological phenomena near the University. One all-day excursion is made by lake to Taughannock, and another to Union Springs. A voluntary excursion to the coal mines at Wilkesbarre is also offered.

Lectures T., Th., 9, *Geological Lecture Room.* Laboratory and field work either M., T., Th., or F., 2–4:30. In addition it is necessary to have one free Saturday in fall and spring for the all-day excursions. Professor TARR and Mr. ———.

[4a. **The Geography of North America.** Two hours. 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, early settlements, occupations of the people, location of cities, etc. The lect-

ures are illustrated by lantern slides, maps and models. Lectures T., Th., 10, *Geological Lecture Room*. Professor TARR.]

Courses 4a and 4b are given in alternate years.

4b. **The Geography of Europe.** Two hours. 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. Illustrated by lantern slides, maps and models. Lectures T., Th., 10, *Geological Lecture Room*. Professor TARR.

Courses 4a and 4b are given in alternate years.

5. **Advanced Physiography.** Three hours. A study of special topics of physiography in the field and laboratory. In addition to discussions, conferences, review of literature, and directed excursions each student will be required to do independent field and laboratory work. Admission to this course by undergraduates requires special permission. W., 2–5, *Physical Geography Laboratory*. Professor TARR and Mr. BUTLER.

[6. **Experimental Geology.** Original investigation by experiment in dynamic and physiographic geology. Each student will take a line of work for experiment, for example, mountain folding, sedimentation, glacial action, river erosion, river deposit, etc. Credit depending upon the nature of the problem selected, but in no case less than two hours for the full year or four hours for a single term. Undergraduates are admitted only by special permission, and in all cases courses 1a, 1b and 2, or their equivalent, are prerequisite. This work may be made the basis for both graduate and undergraduate theses. Professor TARR.]

7. **Glacial Geology.** Three hours. Lectures, conferences and discussions. Preparation and reading of essays. T., 4:30–6. Field work all day Saturday during fall and spring. Admission for this course requires special permission. *Physical Geography Laboratory*. Professor TARR.

8. **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.

9. **Geological Seminary.** Two hours. 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. M., 4:30-6. Professor TARR.

Mineralogy and Petrography.

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.

12. **Crystal Measurement and Drawing.** Second half-year. two hours. Students in course 11 who intend to continue crystallographic work either in course 14 or course 17 are advised to take this course. Assistant Professor GILL.

13. **Determination of Minerals by the Blowpipe Method.** First half year. One laboratory hour. Must be preceded by some course in Mineralogy. 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. Especial attention is paid to the optical properties of crystals. 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 aud some of the more important classic writings. Assistant Proressor 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.

Paleontology and Stratigraphic Geology.

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; generally at *Geol. Lect. Room*, M., W., F., 10, Assistant Professor HARRIS, and Mr. WHITNEY.

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, Mr. WHITNEY and Mr. ———.

23. **Elementary Conchology.** Three periods a week; fall and spring only. Credit, two hours. Pelecypoda and Gastropoda, fall; Brachipoda and Trilobita, spring. Hours to be arranged. Assistant Professor HARRIS.

24. **Field and Laboratory Work.** All special and advanced work is included under this heading. Hours various. Assistant Professor HARRIS.

Courses 27, 28, and 29 constitute a consecutive series of studies on the history of organisms.

In the treatment of the subject, the method of Darwin is adopted, in which the living organism is considered as an organic unit, whose behavior, structure and form change in relation to ancestry and environment; in contrast with the methods of histologists and physiologists whose attention is more directly given to the molecular and chemical phenomena of parts of organisms.

Course 27 deals comprehensively with the fundamental problems of evolutionary science and theory. While primarily designed as an introduction to investigations of the biological problems of geology, it is adapted to the needs of students of all branches of organic science, including the study of man and society.

27. **Organic Evolution.** A discussion of the evolutional phe-

nomena of orgauisms; the factors of evolution as formulated in the various theories of evolution; and the facts of evolution as expressed in historical paleontology. An introduction to the historical study of organisms. Two hours lectures, supplemented by reading Darwin's "Origin of Species," on which written examinations will be held about once a month throughout the year, to count as a three-hours course. M., W., 8, *Geological Lecture Room*. Prof. H. S. WILLIAMS.

Courses 28 and 29 are advanced courses in special fields of Paleontology, designed for those wishing to fit for professional work as geologists or teachers.

As a preparation for taking courses 28 and 29, the following courses are recommended and deviation from such plan should not be made except upon the approval of Professor Williams, viz.:

English	Courses	1 and 2
French	"	1 and 2
German	"	1 and 2b
Mathematics.	"	6 and 10
Philosophy	"	1
Chemistry	"	1
Physics	"	1, 6 and 10
Botany	"	1 and 2
Zoology (invertebrate)	"	1
Zoology (vertebrate)	"	2
Geology (dynamic)	"	2
Geology (historical)	"	21

28. **Invertebrate Paleontology.** Systematic study of the structure, mode of occurrence, geological range and geographical distribution of fossil organisms; and of their uses in determining time horizons and in correlating geological formations. Chiefly laboratory work; hours to be arranged. Prof. H. S. WILLIAMS.

29. **Geological Evolution of Organisms.** Investigation of the evidences of evolution exhibited by selected groups of fossil organisms, with preparation of theses. Assignment of topics, methods and field of research to be arranged. Prof. H. S. WILLIAMS.

Economic Geology.

32. **General Economic Geology.** a. Two hours lectures throughout the year. M., W., 10. b. Laboratory, M., or T., 2–4 throughout the year. Students may take the lectures without the laboratory, but those who have the time should take both. A comprehensive course upon the origin, nature, and distribution 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. *Economic Geology Laboratory.* 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. Assistant Professor RIES.

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.

36. **Seminary in Economic Geology.** Three hours credit. Time to be arranged. Abstracts and discussions of the current literature on economic geology, and preparation of papers on special subjects. Primarily for graduates, but open to undergraduates who have had sufficient preparation. Assistant Professor RIES.

Meteorology.

[40. **Meteorology.** Three hours, second term. Two lectures and one period devoted to laboratory work and weather observations. The course is concerned with the temperature, rainfall, and other meteorlogical elements, their normal conditions, variations and distribution; with the general atmospheric circulation; the cyclonic and special storms. Students will be made acquianted with the weather map, forecasting, and the instruments used in measuring and recording meteorologic elements. Lectures, T., Th., 11; laboratory F., 2-4:30. Mr. ———.]

Courses given by the Geological Department to students in Technical Courses.

(Under some circumstances the following courses may be elected by students in the College of Arts and Sciences.)

45. **Practical Geology and Mineralogy.** Civil Engineering, A single course counting as three hours throughout the year composed of two parts. (a) Elements of Mineralogy; first term until Christmas. Assistant Professor GILL, Mr. MCCOURT, and ———. (b) General principles of geology and their practical applications, treated with special reference to the needs of engineers. Christmas to end of secondterm. Assistant Professor RIES, Mr. MCCOURT, and

———. Lectures, M., W., 11; Laboratory practice, (a) in Mineralogical Laboratory, *McGraw Hall*, (b) in Economic Geology Laboratory, *McGraw Hall*. Sect. I, M., 2-4:30; II, T., 2-4:30; III, Th., 2-4:30; IV, F., 10-12:30; T., F., 2-4:30.

Note.—This course is a consolidation of courses Geology, Nos. 10, 3, 30, as previously given.

46. **Clay Products and Building Stones.** Architecture. Required for architects. Open to elective students only by special permission. Second half-year. Two hours. Lecture M., 12. Laboratory, W., 2-4. *Geological Lecture Room.* Assistant Professor RIES and Mr. MCCOURT.

MILITARY SCIENCE AND TACTICS.

All candidates for a degree in a four year course pursued at the University in Ithaca must, in addition to the scholastic requirements for the degree, take for two years three actual hours a week of physical training, and all candidates for a degree in a three year course must take for one year three actual hours a week of such training. This work must be under University supervision and be completed at the beginning of the Junior year, that is, two years prior to graduation.

Men in four year courses must take the first year of this work unless properly excused, in the Department of Military Science and Tactics, in accordance with the requirements of the War Department. They shall take the second year either in that department or in the Department of Physical Culture as they may elect, and men in the first year of three year courses shall have the same election.

Women must take all of this work in the Department of Physical Culture.

Students in the New York State Veterinary College are temporarily exempt from the above requirements.

Any member of the Cornell University Cadet Corps who has satisfactorily performed all the duties required for the first year, and who is qualified therefor, may be selected by the Commandant for appointment as a commissioned officer, and when appointed by the President of the University and confirmed by the University Faculty, will be commissioned accordingly. Upon the performance of his duties as a commissioned officer in the sophomore, junior or senior year, and provided he has completed the course in military science, he is entitled at graduation to receive a certificate of military proficiency.

Upon the graduation of each class, the names of such students as

have shown special aptitude for military service will be reported to the Military Secretary of the Army and to the Adjutant General of the State of New York, aud the names of the three most distinguished students in military science and tactics will be inserted in the Official Army Register. from the Headquarters of the Army.

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. M., W., F., 4:45. Captain BARTON.

2. **Artillery Drill, for selected detachment.** School of the battery, dismounted. Sabre exercise. First term until Christmas recess and second term after Easter recess. M., W., F., 4:45. Captain BARTON.

3. **Signal Drill, for selected detachment.** First term until Christmas recess and second term after Easter recess. M., W., F., 4:45. Captain Barton.

4. **Small Arms Firing Practice.** For volunteers only. Theoretical instruction. Position and aiming drills and gallery practice. First term until Christmas recess. Daily except Saturday and Sunday 12 to 1, *Armory*. Range Practice, 100, 200 and 300 yards. Second term after Easter recess. T., Th., and Sat., 2 to 5. Captain BARTON and Assistants.

The marksman's badge, presented by the University, 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 battalion.

6. **Theoretical Work.** Christmas recess to Easter recess. Recitations by company, in Infantry Drill Regulations, Manual of Guard Duty and Small Arms Firing Regulations. M., W., F., 4:45. Captain BARTON and Captains of the Cadet Corps. Supplemented by lectures to be announced. Captain BARTON.

Elective Courses.

7. **Military Science.** (For students in 2nd, 3rd, or 4th year). Lectures and text book. Christmas recess until Easter recess. Credit, 1 hour each term. T., Th. Captain BARTON.

8. **Elective Drill.** Students of the sophomore, junior and senior classes may elect drill.

The military band is supported by the University. A director, band instruments and uniforms are provided. Members of the band are members of the Cadet Corps.

PHYSICAL CULTURE.

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 the Professor of Physical Culture and Director of the Gymnasium, who with the assistance of an experienced physician examines every male student at his entrance and at stated intervals thereafter, learns the condition of his health, takes his physical measurement, 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 exercise 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, subject to exceptions in particular cases by the committtee 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 aud 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 repre-

sentatives from the trustees, faculty, and student athletic organizations, was incorporated in June, 1889. A standing committee on student organization, 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.

Fifty-five acres of land adjoining the University campus have been set aside by the trustees of the University for a new University Playground and Athletic Field, the construction of which has already been taken by the Alumni.

All candidates for a degree in a four year course pursued at the University in Ithaca must, in addition to the scholastic requirements for the degree, take for two years three actual hours a week of physical training, and all candidates for a degree in a three year course must take for one year three actual hours a week of such training. This work must be under University supervision and be completed at the beginning of the Junior year, that is, two years prior to graduation.

Men in four year courses must take the first year of this work unless properly excused, in the Department of Military Science and Tactics, in accordance with the requirements of the War Department. They shall take the second year either in that department or in the Department of Physical Culture as they may elect, and men in the first year of three year courses shall have the same election.

Women must take all of this work in the Department of Physical Culture.

Students in the New York State Veterinary College are temporarily exempt from the above requirements.

Physical Examinations. Required of all regular undergraduate students entering the University this year, and at the beginning of each athletic season for all men who are to train for athletic competition in Class or University contests. Make special appointment at Gymnasium Office. Dr. GRAY and Assistants.

No student unable to swim and not excused because of physical disability, will be given credit for work done in this Department.

1. **Physical Exercises.** For Freshmen, who in the judgment of the Director are physically unfitted for required Military Drill, and those who are allowed to substitute work in the department in place of Military Drill. The work consists of class and squad work indoors and out, exercises prescribed for individual deformity or immaturity, or of work prescribed in one of the various branches of athletics under the supervision of the Department. Hours to be arranged. Professor YOUNG and Assistants.

2. **Physical Exercises.** For Sophomores who elect work in the department as part of the required work in Physical Training. Work and hours same as in Course 1.

3. **Gymnasium Exercises.** Christmas recess until Easter recess. Elective for Juniors and Seniors. The work consists of gymnasium exercises. Four hours each week at time to be arranged. Credit, 1 hour for students taking courses in Arts, Mechanical Engineering and Agriculture. Professor YOUNG and Assistants.

4. **Advanced Gymnastics.** Open to those already proficient in apparatus work, and desiring special instruction. Hours, 6–6:30 daily except Sat. Mr. DANA.

5. **Leaders' Class.** Selected from students who have had previous training, and who will be excused from part of the required work for rendering assistance as squad leaders.

6. **Hygiene.** Announcement of lectures to be given in this course to be made later. Open to all students in the University.

7. **Swimming Class.** Instruction will be given from 11–12 daily and 3–4 daily except Sat. The pool will be reserved at that time for those learning to swim. Professor YOUNG.

10. **Women's Gymnastic Exercise.** Freshmen and Sophomores. Daily exc. S. Credit 2 hours each term. Miss CANFIELD.

11. **Practical Gymnastics.** Open to women who have completed Course 10. 2 hours. Miss CANFIELD.

12. **Physical Examinations,** Miss CANFIELD and Dr. EMILY BARRINGER.

Regular Gymnasium classes will be held from 4–4:45 and 5–5:45 daily except Saturday, throughout the year.

Special Medical Advice, or re-examination of old students from 11–12:30 throughout the year. *Gymnasium Office.* Dr. GRAY.

Instruction will be offered by the Department in Boxing, Wrestling, and Fencing, for each of which a fee of $5.00 a term will be charged. Payments are to be made at the Treasurer's Office, the receipt for which will entitle the holder to two lessons per week in Boxing and Wrestling, and three in Fencing. Work in these branches can be counted toward the required work of Freshman and Sophomore years.

THE COLLEGE OF LAW.

FACULTY.

JACOB GOULD SCHURMAN, A.M., D.Sc., LL.D., President.
ERNEST W. HUFFCUT, B.S., LL.B., Director of the College, Dean of the Faculty, and Professor of Law.
FRANCIS M. FINCH, A.B., LL.D., Professor Emeritus, and Lecturer on the History and Evolution 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.
WILLIAM L. DREW, B.S., LL.B., Professor of Law.
FREDERICK D. COLSON, B.L., LL.B., Instructor in Procedure.
JOSEPH WALTER BINGHAM, A.B., LL.B., Acting Assistant Professor of Law.

JUDGE ALFRED C. COXE, A.M. (United States Circuit Judge), 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., (United States District Judge, Alaska), Lecturer on the United States Bankruptcy Act.

ALEXANDER H. R. FRASER, LL.B., Librarian.

[*Inquiries as to acceptance of certificates should be addressed to The Registrar, Cornell University, Ithaca. N. Y.*

Address all other communications to The College of Law, Cornell University, Ithaca, N. Y.]

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 :

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* On leave of absence, 1905-06.

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. When 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 examinations 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 ; and no one taking the examination in English and found markedly deficient will be admitted.

All students preparing for admission to law are strongly advised to pursue the elementary subjects and one of the groups of advanced subjects required for admission to the College of Arts and Sciences. The certificates of students who desire to take the four-year course in law must cover those subjects.

For admission to the College of Law on examination an applicant must offer the Elementary Subjects and also 30 units from the list of Advanced Subjects. See pages 33–53. For admission on Regents' credentials and school certificates, see above.

B. ADMISSION ON EXAMINATION. The subjects that may be offered for admission are named in the following lists :

Elementary Subjects.

The following Elementary Subjects are required for admission to all colleges of the University except the Veterinary College :

English,
History,*
Plane Geometry,
Elementary Algebra.

Advanced Subjects.

In addition to the Elementary Subjects, an applicant must offer from the following list the Advanced Subjects required by the college to which he seeks admission. The figure following each subject indicate its relative weight :

Advanced Mathematics (6).
  Solid Geometry (2).
  Advanced Algebra (2).
  Plane Trigonometry } (2).
  Spher. Trigonometry }
German (12).
  Elementary German (6).
  Advanced German (6).
French (12).
  Elementary French (6).
  Advanced French (6).
Spanish (12).
  Elementary Spanish (6).
  Advanced Spanish (6).
Latin (18).
  Latin Grammar and Caesar (6).
  Latin Composition and Cicero (6).
  Virgil (6).
Greek (12).
  Greek Grammar, Xenophon (6).
  Greek Composition, Homer (6).
Physics (6).
Chemistry (6).
Botany (6).
Geology (6).
Zoology (6).
Drawing (6).

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 upon all the subjects of the first year are given at the University in September, beginning Tuesday of registration week, as follows : Tuesday, 9 a. m. Contract and agency ; 3 p. m. Torts ; Wednesday, 9 a. m. Criminal Law ; 3 p. m. Property ; Thursday, 9 a. m. Civil Procedure.

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, provided they present the New York Regents' law student

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*One of the following: (1) American (including Civil Government), (2) English, (3) Ancient (to 814 A. D.), (4) Mediæval and Modern European (from 814 A.D.)

certificate or a substantial equivalent. 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 Dean of the College before presenting themselves in person. Special students may be admitted as candidates for a degree if they satisfy the entrance requirements before the beginning of their second year in College.

Admission of Students from the College of Arts and Sciences. Seniors in good standing in the College of Arts and Sciences of the University, are allowed, with permission of the Faculty of Arts and Sciences and with the consent of the Faculty of Law in each case to take all or any part of their work in the College of Law and count it toward graduation in both Colleges. Under this provision a student may complete a general course of university study and the law course in six years.

COURSE OF INSTRUCTION.

The course of instruction extends through three years of about 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 synopses, by lectures and exposition, and by colloquy and discussion. In addition to the courses given by the resident Faculty, provisiou is made each year for conrses of lectures by eminent specialists in the profession.

TABULAR OUTLINE.

Three-Year Law Course.

The course of instruction extends through three years (for four-year course, see p. 226), of nine months each.

1st Year.	No. Course.	1st Term.	2nd Term.
Contract	1a	4	2
Agency	1b	–	2
Torts (including Master and Servant)	2	3	3
Criminal Law and Procedure	3	4	–
Real Property	4	3	3
Civil Procedure	5	–	4

Junior Year.	No.	Course.	1st Term.	2nd Term.
Sales	20		3	–
Suretyship	21		–	3
Probate Law	22		3	–
Equity Jurisdiction and Trusts	23		3	3
Insurance	24		2	–
Domestic Relations and Persons	25		–	2
Evidence	26		–	3
Civil Procedure	28		3	–
Procedural Papers	28a		–	3
College Court	29		1	1

Senior Year.	No.	Course.	1st Term.	2nd Term.
Property	30		–	4
Partnership	31		3	–
Corporations	32		–	4
Quasi-Contracts	33		2	–
Carriers	34		–	2
Bills, Notes and Checks	35		2	–
Constitutional Law	36		–	2
Civil Procedure	37		4	–
Conveyancing	38		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.) M., T., Th., F., 9. Professor WOODRUFF.

1. b. **Agency.** Four hours from the Easter recess. Huffcut's Agency (2d ed.), Huffcut's Cases on Agency. M., T., 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., W., F., 10. Professor HUFFCUT.

3. **Criminal Law and Procedure.** First term. Four hours. Beale's Cases on Criminal Law; Beale's Criminal Pleading and Practice; New York Penal Code and Code of Criminal Procedure. T., W., Th., F., 11. Professor DREW.

4. **Real Property.** Three hours. Finch's Cases on the Law of

Property in Land; Tiffany on Real Property. T., Th., S., 12. Assistant Professor BINGHAM.

5. **Civil Procedure.** Second term. Four hours. Introductory lectures on the relation of procedure to substantive law, and the development of the reformed procedure; New York Code of Civil Procedure, first five chapters, and selected cases on topics included therein; Common Law Pleading. T., W., Th., F., 11. Professor IRVINE.

Junior Year.

Boardman B.

20. **Sales.** First term. Four hours. Burdick on Sales; Burdick's Cases on Sales (2d ed.) M., W., F., 10. Assistant Professor BINGHAM.

21. **Suretyship.** Second term. Three hours. Ames's Cases on Suretyship. M., W., F., 10. Professor DREW.

22. **Probate Law.** First term. Three hours. Wills and Administration and Surrogate's Practice. Statutes, codes and selected cases. T., Th., S., 9. Mr. COLSON.

23. **Equity Jurisdiction and Trusts.** Three hours. Ames's Cases on Equity Jurisdiction; selected cases on Trusts. T., Th., S., 10. 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.** Second term. Three hours. Thayer's Cases on Evidence. M., W., F., 9. Professor IRVINE.

28. **Civil Procedure.** First term. Three hours. New York Code of Civil Procedure, chapters 6 and 8 inclusive; and selected cases. The preparation of pleading 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. M., W., F., 9. Professor IRVINE and Mr. COLSON.

28a. **Procedural Papers.** Second term. Two hours. Courses 22 and 28 continued with preparation of papers. T., Th., S., 9, 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. Hours to be assigned.

Senior Year.

Boardman C.

30. **Property.** Second term. Four hours. Tiffany on Real Property ; Finch's Cases on Property in Land, and other selected cases. T., W., Th., F., 10. Assistant Professor BINGHAM.

31. **Partnership.** First term. Three hours. Burdick on Partnership ; Burdick's Cases on Partnership. M., T., F., 9. Professor DREW.

32. **Corporations.** Second term. Four hours. Smith's Cases on Private Corporations. M., T., Th., F., 9. Professor DREW.

33. **Quasi-Contracts.** First term. Two hours. Woodruff's Cases on Quasi-Contracts. W., 9, F., 11. Professor WOODRUFF.

34. **Carriers.** Second term. Two hours. Goddard's Cases on Bailments and Carriers. W., 9, F., 11. Professor WOODRUFF.

35. **Bills, Notes and Checks.** First term. Two hours. Huffcut's Statutes, Cases and Authorities on Negotiable Instruments. M., W. 11. Professor HUFFCUT.

36. **Constitutional Law.** Second term. Two hours. McClain's Cases on Constitutional Law. M., W., 11. Professor HUFFCUT.

37. **Civil Procedure.** First term. Four hours. New York Code of Civil Procedure, chapters 9 to 17 inclusive 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., Th., F., 10. Professor IRVINE and Mr. COLSON.

38. **Conveyancing.** First term. Two hours. This course includes conveyancing and special actions concerning real property. T., Th., 11. *Mr. Colson.*

41. **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. M., 10. Professor IRVINE.

Four-Year Law Course.

Students who meet the specific requirements for admission to the College of Arts and Sciences (and no others) may take a four-year course as follows :

The course of instruction extends through four years (for three-year course see page 22) of nine months each.

1st Year.	No. Course.	1st Term.	2d Term.
Contract	1a	4	2
Agency	1b	–	2
Torts (including Master and Servant)	2	3	3
Property	4	3	3
Electives (College of Arts and Sciences)	–	5–6	5–6

2nd Year.	No. Course.	1st Term.	2d Term.
Criminal Law and Procedure	3	4	–
Civil Procedure	5	–	4
Sales	20	3	–
Suretyship	21	–	3
Equity Jurisdiction and Trusts	23	3	3
Electives (College of Arts and Sciences)	–	5–8	5–8

3rd Year.	No. Course.	1st Term.	2d Term.
Probate Law	22	3	–
Insurance ; Domestic Relations	24–25	2	2
Civil Procedure	28–28a	3	3
Evidence	26	–	3
College Court	29	1	1
Electives from Senior Law Subjects	–	2	2
Electives (College of Arts and Sciences)	–	5–8	5–8

Senior Year.	No. Course.	1st Term.	2d Term.
Property	30	–	4
Partnerships : Corporations	31–32	3	4
Quasi-Contracts	33	2	–
Carriers	34	–	2
Bills, Notes and Checks	35	2	–
Constitutional Law	36	–	2
Civil Procedure	37	4	–
Conveyancing	38	2	–
Practice Court	41	1	1

Special Courses of Lectures.

History and Evolution of Law. *Professor F. M. Finch.*
The Patent Laws of the United States. *Mr. Walker.*
The Law of Shipping and Admiralty. *Judge Coxe.*
[The above two courses are given in alternate years.]
The United States Bankruptcy Act. *Judge Gunnison.*

Special Lectures.

During the past year the following special lectures have been given before the College of Law:

Some Aspects of the Civil Law. *Hon. William H. Taft*, Secretary of War.

The Arguments of Motions and Appeals. *Hon. Frank H. Hiscock*, of Syracuse, Justice of the Supreme Court, Appellate Division.

The Office of District Attorney for New York County. *Eugene E. Philbin, Esq.*, of New York City.

The Hague Conference and the Future of International Arbitration. *Hon. Andrew D. White*, former President of Cornell University.

Physical Culture.

Each student during his first year is required to take three hours of physical training a week, and may elect to take this either in military science and tactics under the direction of the Commandant or in the field and gymnasium under the direction of the Professor of Physical Culture.

Examinations and Class Standing.

Examinations are held twice a year at the end of the term and papers are graded "excellent," "good," "pass," "condition." In order to remain in the College a student pursuing five law subjects in any term must pass at least three of them, and a student pursuing less than five law subjects must pass at least two of them (exclusive in each case of College Court work). A student having conditions in four term-subjects standing against him at the end of any year cannot take examinations to remove them unless he has, in an equal number of subjects, credits of the grade of "good" or "excellent." If he fails to meet this requirement at the end of the first year he must repeat that year; if at the end of the second year, he ceases to be a candidate for a degree. A senior who after the September examinations has still two conditions standing against him will not be considered a candidate for graduation in that year.

Irregular attendance or neglect of work is sufficient cause for the 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 without 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 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 papers 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.

Electives in the College of Arts and Sciences.

Students registered in the above three year course may not elect work in the College of Arts and Sciences during their first year. Those who have satisfactorily completed their first year may elect not to exceed three hours during their Junior and Senior years respectively, but such electives must be regularly pursued. In the Department of Elocution and Oratory special classes are formed for the ben-

efit of members of the College of Law who desire to elect work in Public Speaking. Electives may be taken only upon petition approved by both Faculties.

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 accomodations for forty thousand volumes and three hundred readers.

Law Library. The library of the College of Law numbers about 33,000 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 text books and statutes, and complete sets of substantially all law periodicals in English.

GRADUATION FROM THE COLLEGE.

Degree of Bachelor of Laws. The degree of Bachelor of Laws (LL.B.) is conferred upon all students who have met the entrance requirements and 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. In no case can a student take the degree unless he has been in residence for two years, and then only if, at the time of his admission, he passes a satisfactory examination in the work of the first year.

Certificate 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. The certificate of a year's regular attendance, required by bar examiners, implies the completion of a full year's work (not less than fourteen hours per week) of which at least nine hours per week shall be in the year for which the certificate is granted.

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.[1] It is available during the senior year and is payable in the same way as other University scholarships. This scholarship may be forfeited in case the faculty is satisfied that the holder has not maintained a high standard of work, or has been guilty of any conduct unbecoming the holder of such a scholarship.

Other Scholarships and Prizes are open to law students as well as to students in other colleges. (See pages 63-64).

FEES AND EXPENSES.

Tuition Fees. The fee for tuition for all law studeuts, 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 term and $55 at the beginning of the second term.

These fees must be paid at the office of the Treasurer within twenty days after registration for each term.

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.

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
Total	$285 to $485

[1] Awarded for 1904-1905 to Walter McMeekan. Awarded for 1905-1906 to Arthur Brothers Weber.

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 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.

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 College of Arts and Sciences 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. 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.

At the foundation of the Medical College the following resolutions establishing a Medical College Council and determining its functions was adopted by the Board of Trustees of Cornell University:

***Resolved*, that for the purpose of making recommendations to the Board of Trustees or the Executive Committee in relation to the business management of the Medical College there be established, and there is hereby established a Medical College Council which shall consist of seven members, to wit: the President of the University (who shall be *ex-officio* chairman), the Director of the Medical College and three trustees to be elected by the Board of Trustees or the Executive Committee, who shall be appointed, one for one year, one for two years, and one for three years, and their successors be appointed for three years, and two members of the Faculty, to be elected by the Faculty, who shall be appointed, one for one year, and one for two years, and their successors to be appointed for two years, and that all appointments to fill vacancies be made for unexpired terms."**

The Council at present consists of the following members:

JACOB GOULD SCHURMAN, President of the University and Chairman *ex-officio* of the Council.

WILLIAM M. POLK, Director of the Medical College.

H. W. SACKETT,
H. R. ICKELHEIMER, } of the Board of Trustees.

L. A. STIMSON,
R. A. WITTHAUS, } of the Faculty.

J. THORN WILLSON, *Secretary.*

FACULTY OF MEDICINE IN NEW YORK.

(For Faculty at Ithaca see later.)

JACOB GOULD SCHURMAN, A.M., D.Sc., LL.D., President, and Chairman *ex-officio* of the Council.

WILLIAM MECKLENBERG POLK, M.D., LL.D., Dean and Professor of Gynæcology.

LEWIS A. STIMSON, A.B., M.D., LL.D., Professor of Surgery, Consulting Surgeon to Bellevue Hospital and Surgeon to New York and Hudson Street Hospitals.

RUDOLPH A. WITTHAUS, A.M., M.D., Professor of Chemistry, Physics and Toxicology.

W. GILMAN THOMPSON, Ph.B., M.D., Professor of Medicine, Physician to the Presbyterian and Bellevue Hospitals.

GEORGE WOOLSEY, A.B., M.D., Professor of Anatomy and Clinical Surgery, Surgeon to Bellevue Hospital, Associate Surgeon to the Presbyterian Hospital.

HENRY P. LOOMIS, A.B., Ph.B., M.D., Professor of Materia Medica, Therapeutics and Clinical Medicine, Physician to the New York and Bellevue Hospitals.

J. CLIFTON EDGAR, Ph.B., A.M., M.D., Professor of Obstetrics and Clinical Midwifery, Attending Obstetrician to the Emergency Hospital of Bellevue Hospital, Consulting Obstetrician to the City Hospital. Obstetric Surgeon to the Manhattan Maternity and Dispensary.

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, A.B., M.D., F.R.C.S., Professor of Clinical Surgery, Surgeon to Bellevue and St. Vincent Hospitals.

FREDERICK GWYER, M.D., Professor of Operative and Clinical Surgery, Surgeon to Bellevue and Beth Israel Hospitals.

IRVING S. HAYNES, Ph.B., M.D., Professor of Practical Anatomy, Surgeon to the Harlem Hospital.

JAMES EWING, A.M., M.D., Professor of Pathology.

JOSEPH E. WINTERS, M.D., Professor of Diseases of Children, Physician to Willard Parker Hospital.

CHARLES STEDMAN BULL, A.M., M.D., Professor of Ophthalmology, Surgeon to New York Eye and Ear Infirmary, Consulting Ophthalmic Surgeon to St. Luke's, 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 Hospitals, Consulting Surgeon to the New York Infirmary for Women and Children.

CHARLES L. DANA, A.M., M.D., Professor of Diseases of the Nervous System, Physician to Bellevue Hospital, Neurologist to the Montefiore Home.

SAMUEL ALEXANDER, A.M., M.D., Professor of Diseases of the Genito-Urinary System, Surgeon to Bellevue Hospital, and to the Montefiore Home.

GEORGE THOMSON ELLIOT, A.B., M.D., Professor of Dermatology, Consulting Dermatologist to St. Luke's, Columbus, and New York Lying-in-Hospitals.

CHARLES H. KNIGHT, A.M., M.D., Professor of Laryngology, Surgeon to the Manhattan Eye and Ear Hospital, Throat Department.

ALEXANDER LAMBERT, A.B., Ph.B., M.D., Professor of Clinical Medicine, Physician to Bellevue Hospital.

FRANCIS W. MURRAY, A.B., M.D., Professor of Clinical Surgery, Surgeon to the New York Hospital, and Consulting Surgeon to St. Luke's Hospital.

CHARLES E. NAMMACK, Ph.B., 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 Hospitals.

PERCIVAL R. BOLTON, Ph.B., M.D., Professor of Clinical Surgery, Surgeon to the New York Hospital.

WARREN COLEMAN, A.M., M.D., Professor of Clinical Medicine, Instructor in Materia Medica, Therapeutics, and Clinical Medicine, Assistant Visiting Physician to Bellevue Hospital.

LEWIS A. CONNER, Ph.B., M.D., Professor of Clinical Medicine, Visiting Physician to the New York Hospital, and to the Hudson Street Hospital.

ALEXANDER B. JOHNSON, Ph.B., M.D., Professor of Clinical Surgery, Surgeon to the New York Hospital.

BERTRAM H. BUXTON, A.B., M.D., Professor of Experimental Pathology.

FREDERICK WHITING, A.M., M.D., Professor of Otology, Aural Surgeon to New York Eye and Ear Infirmary, and Surgeon to St. Bartholomew's Clinic.

ADOLF MEYER, M.D., Professor of Mental Diseases. Director of the Pathological Institute of the New York State Hospitals Ward's Island.

IVIN SICKELS, M.S., M.D., Assistant Professor of Chemistry and Physics.

JOHN A. HARTWELL, Ph.B., M.D., Assistant Professor of Physiology, and Instructor of Physiology, Surgeon to the Lincoln Hospital, Adjunct Assistant Surgeon to Bellevue Hospital.

JOHN ROGERS, A.B., Ph.B., M.D., Secretary of the Faculty.

JESSIE P. ANDRESEN, Assistant Secretary.

Lecturers.

CHARLES N. BANCKER CAMAC, A.B., M.D., Lecturer on Medicine. Instructor in Medicine and Physical Diagnosis.

JOSEPH FRAENKEL, M.D., Lecturer on Neurology and Clinical Instructor in Diseases of the Nervous System and Psychiatry.

CHARLES L. GIBSON, A.B., M.D., Lecturer on Surgery and Instructor in Surgery.

EDWARD L. KEYES, JR., A.B., M.D., Lecturer on Surgery.

MAX G. SCHLAPP, M.D., Lecturer on Pathology and Instructor in the Histology and Pathology of the Nervous System.

OTTO H. SCHULTZE, A.B., M.D., Lecturer on Pathology, Instructor in Gross Pathology.

BENJAMIN T. TILTON, A.B., M.D., Lecturer on Surgery, Instructor in Surgery.

JOHN McGAW WOODBURY, A.B., M.D., M.R.C.S., Lecturer on Municipal Sanitation.

Instructors.

HEADS OF SUB-DEPARTMENTS.

WILLIAM J. ELSER, M.D., Instructor in Bacteriology.

JEREMIAH S. FERGUSON, M.S., M.D., Instructor in Histology.

THOMAS WOOD HASTINGS, A.B., M.D., Instructor in Clinical Pathology.

LOUIS W. RIGGS, A.M., Ph.D., Instructor in Chemistry and Physics.

EDMUND PENDLETON SHELBY, A.B., M.D., Instructor in Pharmacology and Therapeutics.
ISRAEL STRAUSS, M.D., Instructor in Embryology.
CHARLES G. L. WOLF, A.B., C.M.M.D., Instructor in Physiological Chemistry.

Instructors and Assistants.

THEODORE B. BARRINGER, A.B., M.D., Instructor in Medicine and Clinical Medicine.
GEORGE PATTEN BIGGS, M.D., Demonstrator of Gross Pathology.
JOHN W. COE, Ph.B., M.D., Assistant in Clinical Pathology.
JOHN F. CONNORS, M.D., Demonstrator of Anatomy.
GEORGE EUGENE DODGE, B S., M.D., Instructor in Operative Surgery, Clinical Instructor in Surgery.
WILLIAM A. DOWNES, M.D., Instructor in Operative Surgery and Demonstrator of Anatomy.
B. J. DRYFUS, M.D., Assistant in Chemistry.
ROBERT E. GABY, B.A., Assistant in Physiology.
FRANK S. FIELDER, Ph.B., M.D., Demonstrator of Anatomy.
GEORGE D. HAMLEN, A.M., M.D., Instructor in Obstetrics and Gynæcology.
ROBERT ANTHONY HATCHER, Ph.G., M.D., Instructor in Pharmacology.
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J. RAMSEY HUNT, M.D., Instructor in Neurology.
FRANK M. HUNTOON, M.D., Assistant in Bacteriology and Pathology.
LEOPOLD JACHES, M.D., Assistant in the Pathology and Histology of the Nervous System.
JAMES C. JOHNSTON, A.B., M.D., Instructor in Pathology and Dermatology.
HARVEY E. JORDAN, M.D., Assistant in Histology and Embryology.
FREDERICK L. KEAYS, A.B., M.D., Instructor in Medicine and Physical Diagnosis.
BURTON J. LEE, A.B., M.D., Demonstrator of Anatomy.
HENRY T. LEE, M.D., Assistant in Pathology.
GUY D. LOMBARD, M.D., Assistant in Histology.
M. McKIM MARRIOTT, B.S., Assistant in Chemistry.
ALBERTUS A. MOORE, M.D., Instructor in Obstetrics.
THOMAS A. NEAL, M.D., Assistant in Gross Pathology.
WALTER LINDSAY NILES, M.D., Instructor in Medicine.
NATHANIEL R. NORTON, M.D., Instructor in Medicine.

JOHN J. NUTT, M.D., Demonstrator of Anatomy, Clinical Instructor in Orthopædic Surgery.
JOHN ROGERS, A.B., Ph.B., M.D., Instructor in Clinical Surgery.
JOSEPH C. ROPER, M.D., Assistant in Histology.
MONTGOMERY H. SICARD, B.S., M.D., Instructor in Physical Diagnosis.
WILLIAM F. STONE, Ph.B., M.D., Instructor in and Demonstrator of Anatomy, Clinical Instructor in Surgery.
JOHN C. TORREY, A.B., Ph.D., Fellow in Experimental Pathology.
GEORGE GRAY WARD, M.D., Instructor in Gynæcology.
MORTIMER WARREN, M.D., Assistant in Clinical Pathology.
RICHARD WEIL, M.D., Demonstrator in Gross Pathology.
JOSEPH S. WHEELWRIGHT, A.B., M.D., Demonstrator of Anatomy and Assistant in Physiology,

Clinical Instructors.

JOHN ASPELL, A.B., M.D., Clinical Instructor in Gynæcology.
CHARLES C. BARROWS, A.M., M.D., Clinical Instructor in Gynæcology.
WILLIAM S. BRYANT, M.D., Clinical Instructor in Otology.
J. HERBERT CLAIRBORNE, M.D., Clinical Instructor in Ophthalmology.
WALTER A. DUNCKEL, M.D., Clinical Instructor in Diseases of Children.
FRANCIS C. EDGERTON, B.S., M.D., Clinical Instructor in Diseases of the Genito-Urinary System.
P. HENRY FITZHUGH, M.D., Clinical Instrnctor in Orthopædic Surgery.
J. PRESCOTT GRANT, M.D., Clinical Instructor in Surgery.
ISIDORE L. HILL, M.D., Clinical Instructor in Obstetrics.
AUGUST HOCH, M.D., Clinical Instructor in Psychiatry.
ARCHIBALD E. ISAACS, M.D., Clinical Instructor in Surgery.
GEORGE H. KIRBY, M.D., Clinical Instructor in Psychiatry.
GEORGE B. McAULIFFE, A.B., M.D., Clinical Instructor in Otology.
ALBERTUS A. MOORE, M.D., Clinical Instructor in Obstetrics.
JAMES E. NEWCOMB, A.B., M.D., Clinical Instructor in Laryngology and Rhinology.
EDWARD PISKO, M.D., Clinical Instructor in Dermatology.
ROBERT G. REESE, Ph.G., M.D., Clinical Instructor in Ophthalmology.
GUSTAVE SEELIGMANN, M.D., Clinical Instructor in Obstetrics.

WILLIAM SHANNON, A.B., M.D., Clinical Instructor in Diseases of Children.

HENRY H. WHITEHOUSE, Ph.B., M.D., Clinical Instructor in Dermatology.

PERCY H. WILLIAMS, A.B., M.D., Ciinical Instructor in Surgery.

Clinical Assistants.

ROBERT STAUNTON ADAMS, A.B., M.D., Clinical Assistant in Diseases of Children.

HARRY MORTIMER ARCHER, M.D., Clinical Assistant in Surgery.

DONALD BARSTOW, M.D., Clinical Assistant in Otology.

FRANK T. BURKE, M.D., Clinical Assistant in Laryngology and Rhinology.

EARLE CONNER, M.D., Clinical Assistant in Otology.

H. E. COOK, M.D., Clinical Assistant in Otology.

GEORGE W. CRARY, M.D., Clinical Assistant in Dermatology.

ROBERT M. DALEY, M.D., Clinical Assistant in Diseases of the Nervous System.

SAMUEL M. EVANS, M.D., Clinical Assistant in Diseases of Children.

JOHN H. P. HODGSON, M.D., Clinical Assistant in Diseases of Children.

LESTER M. HUBBY, Ph.B., M.D., Clinical Assistant in Diseases of Children.

WILLIAM J. JONES, M.D., Clinical Assistant in Therapeutics.

GEORGE W. KUNZ, M.D., Clinical Assistant in Otology.

ALEXANDER S. LEVERTY, M.D., Clinical Assistant in Diseases of the Nervous System.

CHARLES MACK, A.B., M.D., Clinical Assistant in Laryngology and Rhinology.

LESLIE J. MEACHAM, M.D., Clinical Assistant in Diseases of the Nervous System.

JOHN ENGLISH McWHORTER, M.D., Clinical Assistant in Diseases of the Genito-Urinary System.

NATHAN S. ROBERTS, M.D., Clinical Assistant in Otology.

PERRY SCHOONMAKER, M.D., Clinical Assistant in Laryngology and Rhinology.

HENRY SCOTT, M.D., Clinical Assistant in Orthopædic Surgery.

HANS J. SCHWARTZ, M.D., Clinical Assistant in Dermatology.

ELISHA MATHER SILL, M.D., Clinical Assistant in Diseases of Children.

HORACE S. STOKES, M.D., Clinical Assistant in Diseases of Children.

FRANK CLARK YEOMANS, A.B., M.D., Clinical Assistant in Diseases of the Genito-Urinary System.

Dispensary Staff.

DEPARTMENT OF MEDICINE.

CHARLES N. B. CAMAC, M.D., Chief of Staff.
MONTGOMERY H. SICARD, M.D., Assistant Physician.
THEODORE B. BARRINGER, M.D., Assistant Physician.
WILLIAM J. Jones, M.D., Assistant Physician.
THOMAS W. HASTINGS, M.D., Assistant Physician.
WILLIAM ARMSTRONG, M.D., Assistant Physician.
FREDERICK L. KEAYS, M.D., Assistant Physician.
WILLIAM R. STONE, M.D., Assistant Physician.
JOSEPH STORER WHEELWRIGHT, M.D., Assistant Physician.
LEONARD G. WEBER, M.D., Assistant Physician.
H. J. SCHWARTZ, M.D., Assistant Physician.
WALTER L. NILES, M.D., Assistant Physician.
ARTHUR R. GREEN, M.D., Assistant Physician.
RICHARD WEIL, M.D., Assistant Physician.

DEPARTMENT OF SURGERY.

WILLIAM F. STONE, M.D., Attending Surgeon.
GEORGE EUGENE DODGE, M.D., Attending Surgeon.
J. PRESCOTT GRANT, M.D., Attending Surgeon.
PERCY H. WILLIAMS, M.D., Attending Surgeon.
EDWARD W. PINKHAM, M.D., Assistant Surgeon.
F. A. AULETA, M.D., Assistant Surgeon,
GEO. W. WARREN, M.D., Assistant Surgeon.
F. M. PAUL, M.D., Assistant Surgeon.

DEPARTMENT OF OBSTETRICS AND GYNÆCOLOGY.

GEORGE D. HAMLEN, M.D., Chief of Staff.
GEORGE G. WARD, M.D., Attending Gynæcologist.
RUSSELL BELLAMY, M.D., Attending Gynæcologist.
CHARLES E. CARTER, M.D., Assistant Gynæcologist.
EDWARD W. PETERSON, M.D., Assistant Gynæcologist.
ARTHUR R. GREEN, M.D., Assistant Gynæcologist.
A. A. ROSENBLOOM, M.D., Assistant Gynæcologist.

DEPARTMENT OF GENITO-URINARY DISEASES.

FRANCIS C. EDGERTON, M.D., Chief of Staff.
JOHN E. McWHORTER, M.D., Assistant Surgeon.

A. J. GILMOUR, M.D., Assistant Surgeon.
THOMAS J. CARNEY, M.D., Assistant Surgeon.

DEPARTMENT OF NEUROLOGY.

JOSEPH FRAENKEL, M.D., Chief of Staff.
J. RAMSEY HUNT, M.D., Attending Physician.
ROBERT M. DALEY, M.D., Assistant Physician.
LESLIE J. MEACHAM, M D., Assistant Physician.
ALEXANDER S. LEVERTY, M D., Assistant Physician.

DEPARTMENT OF PEDIATRICS.

WALTER A. DUNCKEL, M.D., Chief of Staff.
WILLIAM SHANNON, M.D., Attending Physician.
HORACE S. STOKES, M D., Assistant Physician.
ALBERT EWING CHILDS, M D., Assistant Physician.
EDWARD HAND, M D., Assistant Physician.
A. S. KELLY, M.D., Assisting Physician.
THOMAS C. CHALMERS, M.D., Assistant Physician.
GEORGE DOW SCOTT, M.D Assistant Physician.

DEPARTMENT OF DERMATOLOGY.

JAMES C. JOHNSTON, M.D., Chief of Staff.
EDWARD PISKO, M.D Attending Surgeon.
GEORGE W. CRARY, M.D., Assistant Surgeon.
HANS J. SCHWARTZ, M.D., Assistant Surgeon.

DEPARTMENT OF OTOLOGY

GEORGE B. McAULIFFE, M.D., Chief of Staff.
WILLIAM S BRYANT, M.D., Attendiug Surgeon.
EARLE CONNER, M.D Assistant Surgeon.
H. E. COOK, M.D., Assistant Surgeon.
DONALD BARSTOW, M.D., Assistant Surgeon.
GEORGE W. KUNZ, M.D Assistant Surgeon.
NATHAN S. ROBERTS, M.D,, Assistant Surgeon.

DEPARTMENT OF LARYNOLOGY.

JAMES E. NEWCOMB, M.D., Chief of Staff.
FRANK T. BURKE, M.D Assistant Surgeon.
CHARLES MACK, M.D., Assistant Surgeon.
WALTER C. MONTGOMERY, M.D., Assistant Surgeon.
PERRY SCHOONMAKER, M.D., Assistant Surgeon.

DEPARTMENT OF ORTHOPÆDICS.

P. HENRY FITZHUGH, M.D., Attending Surgeon.
HENRY SCOTT, M.D., Attending Surgeon.
DEAS MURPHY, M.D., Assistant Surgeon.
JOHN T. NUTT, M.D., Assistant Surgeon.
PERCY WILLARD ROBERTS, M.D., Assistant Surgeon.

DEPARTMENT OF OPTHALMOLOGY.

ROBERT G. REESE, M.D., Chief of Staff.
J. HERBERT CLAIBORNE, M.D., Attending Surgeon.
G. W. VANDERGRIFT, M.D., Assistant Surgeon.
EDWARD B. COBURN, M.D., Assistant Surgeon.
A. L. OBERDORFER, M.D., Assistant Surgeon.
J. L. DIAS, M.D., Assistant Surgeon.

J. THORN WILLSON, Managing Clerk of the College,
First Avenue, Twenty-seventh and Twenty-eighth Streets.

GENERAL STATEMENT.

The Medical Department of Cornell University was established in 1898. This undertaking, which had been contemplated by the Trustees for several years, was made possible by the gift to the University of a commodious aud fully equipped building designed for medical instruction, and by the bestowal of a sufficient "Endowment Fund" for the generous maintenance of a large and vigorous school for higher education in medicine.

The Main College Building comprises a Medical School and Dispensary, with principal entrance on First Avenue, opposite Bellevue Hospital, and occupies the entire block between Twenty-seventh and Twenty-eighth Streets on First Avenue, extending back 100 feet, thus affording au available space of nearly 20,000 feet on each floor. The building is designed in a severe style of Renaissance architecture, and is constructed of Indiana limestone and red brick.

The Loomis Laboratory (founded 1886) serves the purpose of undergraduate instruction, in connection with the laboratories in the College building, in such subjects as can best be taught in a laboratory, and it is also especially available to graduates in medicine who may desire to pursue further study or original research in the various departments of laboratory investigation.

The Metropolitan Street Railroad cars on Twenty-eighth and Twenty-ninth Streets and First Avenue connect with all the other

lines of the company, by a system of transfers at Fourteenth, Twenty-third, Thirty-fourth, and Fifty-ninth Streets, and so put all the hospitals in the city within easy access of the College. A convenient station of the Manhattan Elevated Railroad is also at Twenty-eighth Street and Third Avenue.

CLINICAL FACILITIES.

The College Dispensary.—One-half of the college building is allotted to the Dispensary, in which ample provision has been made for the accommodation of the various clinical departments, of which there are eleven, viz.: General Surgery, General Medicine, including the diseases of the Heart and Lungs, Gynæcology and Obstetrics, Diseases of Children, of the Nervous System, of the Genito-Urinary System, of the Skin, Eye, Ear, Nose and Throat, and Orthopædic Surgery.

Each Department has been furnished with all the instruments and apparatus necessary for the examination and treatment of patients. A number of small ampitheatres are placed in the Dispensary, so that the clinical instruction provided by the curriculum can be carried on without interfering with the treatment of patients.

The attendance in the Dispensary averages 500 patients daily, and is steadily increasing, so that the clinical material is abundant and accessible.

Members of the Faculty of Cornell Medical College hold appointments in the hospitals and dispensaries of the city, and are thus enabled to utilize for teaching purposes a great quantity and variety of clinical material. The most important and best of these hospitals are the Bellevue, New York, Presbyterian, German, St. Vincent, Gouverneur, Hudson Street, Willard Parker and Reception Hospitals, and the New York Eye and Ear Infirmary. Others are utilized from time to time as necessity or opportunity arises. The major part of the bedside and clinical instruction, is, however, conducted in Bellevue Hospital, which is directly opposite the College.

This hospital has 900 beds, and receives 24,000 patients annually. It contains an amphitheatre capable of seating 300 students, and also a number of small, newly built operating theatres, where section demonstrations in surgery and gynæcology are made before the class. Connected with the hospital is a hydropathic establishment where students are shown the practical applications of baths, douches, massage, etc.

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 33–57.

For admission to advanced standing from other colleges and universities, communications should be directed to Secretary of Faculty, Stimsom Hall, Ithaca, N. Y.; or to the Secretary of the Faculty, 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 academy or high school 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 hand-book No. 3 published by the Regents, and mailed on application to the "Regents' Office, Albany, New York." 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 was accomplished in a registered institution. In lieu of this the applicant is required to pass the examinations conducted by the State authorities at regular intervals throughout the year.

As the ordinary 48 count "Medical Student Certificate" required by law 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 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' "Hand-book No. 3, High School Department Examinations":

Algebra, 4 counts; Plane Geometry, 4 counts; Elementary United States History and Civics, or its equivalent, 2 counts; Second-Year English, or its equivalent, 8 counts; Second-Year Latin, or the first four books of Cæsar's "Commentaries," or First-Year Latin and First-Year German, French, or Spanish, 8 counts. Total, 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, or its equivalent, 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 Coverly" 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 college or university 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 had had one or more years in a college or university, present the special Cornell Medical-Student 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 the 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; bnt 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 in New York 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 class-room 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.

Registration and Matriculation. Students on entering the College must register and pay the registration fee of $5. The payment of this fee is required only once. They will receive a receipt which will be exchanged for a certificate of full matriculation when they shall have complied with the requirements stated on page 243. No conditional matriculation will be accepted. The full 48 count Regents' certificate, including the 26 counts in the subjects specified, must be presented.

Advantages Gained by Preliminary Education. 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 or 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 these departments, and provided they give to dissection and electives as described on pp. 252, 253, in the various departments, a full equivalent in hours to the subjects they may have passed by examination.

Students who have had training in microscopical technique or in histology will be given advanced work in the histological laboratory,

Admission to Advanced Standing. 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 the requisite Cornell Regents' medical student

certificate and by passing examinations in the subjects described on pp. 252, 253 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 law, no student from a Medical School which has not been registered by the Regents may obtain a degree on less than two years of medical study in this State.

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 by this 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.

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, First Avenue, 27th and 28th Sts., New York.

NEW YORK STATE SCHOLARSHIPS.

Under the law of the State, the Commissioner of Education 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 in any department of Cornell University. They are awarded on examination to candidates from the general Assembly Districts "in consideration of their superior ability and as a reward for superior scholarship in the academies and public schools of this State."

For particulars in regard to these scholarships, application should be made to the Commissioner of Education at Albany, N. Y.

Holders of State scholarships are notified that failure to register before the close of registration day 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 Commissioner of Education and the Commissioner fills vacancies forthwith.

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.

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.

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 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 three of the following five subjects: first year English, second year English, third year English, fourth year English, and English reading. See pages 34 and 54. *Other diplomas and School certificates* are not accepted in place of this English examination.

These scholarships will be awarded on the basis of examinations in three of the six groups mentioned below.

[(a) and (b), however, may not be taken by the same candidate and every candidate must take either (b) or (c) or (d).]

(*a*) Plane geometry and algebra through quadratic equations.

(*b*) Solid geometry, advanced algebra, plane and spherical trigonometry. (*c*) Greek. (*d*) Latin. (*e*) French. (*f*) German.

For further information see pages 63–65.

CHARGES FOR INSTRUCTION.

First Year.		
Registration*	$ 5 00	
Tuition	150 00	
Laboratory fees	35 00	$190 00
Second Year.		
Tuition	$150 00	
Laboratory fees	30 00	$180 00
Third Year.		
Tuition	$150 00	
Laboratory fees	30 00	$180 00
Fourth Year.		
Tuition	$150 00	
Laboratory fees	25 00	
Graduation fees	25 00	$200 00

*The registration fee is payable only once—on entrance.

Each student is required to pay to the Clerk of the College a sum ranging from five to fifteen dollars each year to cover breakage in the laboratories and dispensary. This sum, less the amount charged against it for breakage, will be returned at the end of each year.

Tickets must be paid for at the beginning of the session.

Special Students.

Special students, on the recommendation of the head of the department concerned, may be admitted to any of the courses of instruction offered in the College, or to any course of instruction especially provided, on the payment of a registration fee of five dollars and a tuition fee of twenty-five dollars, except in dissection, where the tuition fee is fifteen dollars.

The graduation fee is payable on registering for graduation. The tuition fees for the first two years at Ithaca are identical with those of the same period in New York. All fees are payable at the beginning of the term, but in special cases they may be paid semi-annually in advance. No rebate will be made in any case.

No remission of laboratory fees will be made because of previous instruction elsewhere in the subjects.

Expenses of Students.

The following estimate of the annual expenses of a candidate for a degree in the Medical School is based on the statements of students:

	Low	*Average*	*Liberal*
Matriculation (once only)	$ 5 00	$ 5 00	$ 5 00
Tuition (as at present fixed)	190 00	190 00	190 00
Books	16 00	28 00	35 00
Chemical apparatus	4 00	5 00	6 00 up
Room	92 00	130 00	190 00 up
Board	124 00	129 00	147 00 up
Clothes and laundry	59 00	80 00	112 00 up
College incidentals	16 00	21 00	24 00 up
Other expenses	46 00	74 00	98 00 up
Graduation fee (last year)	25 00	25 00	25 00 up
Total	$577 00	$687 00	$832 00

GENERAL STATEMENT OF THE PLAN OF INSTRUCTION.

The chief features in the scheme of instruction are thorough 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 subjects 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 entitles 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 essential feature of the entire system is the division of the classes of the several years into small sections for recitations, demonstrations, laboratory exercises, and for clinical instruction in the college dispensary, and in the wards of the numerous hospitals attended by the members of the Faculty.

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.

If a student, without neglecting his required schedule work desires to take advanced work and can make an opportunity to do this, without interfering with the work of other students, he shall be permitted to do so and shall receive credit for it.

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 and a consideration of their physiology in the second half of the session.

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 iu 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 these subjects. In their place 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, 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, is 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, in connection with the study of the gross and histological aspects of the parts under discussion, are more fully comprehended. Organic and physiological chemistry are 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 microörganisms.

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 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. 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 recitation of the third year. 3. Manikin course in obstetrics. 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. Students are allowed to take the State Board licensing examinations in the primary subjects at the end of the second year. Those intending to reside in this State are encouraged to avail themselves of this opportunity.

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. A sufficient number of 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.

Students in groups of ten or twelve are taught the methods of examining patients for the detection of abnormal physical signs, and at the close of the session 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 aud gynæcology. They are taught by clinical lec-

tures as part of the general subjects of the practice of medicine, surgery and obstetrics.

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 seventy 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 if 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 diagnosis 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.

To meet the requirements of hospital and other boards of examination, such as those of the civil service or of the army and navy, students who wish to compete in these examinations may elect in the fourth year to have all their recitation exercises with special instructors appointed by the faculty. A separate fee is required for this service. 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 as opportunity arises.

DETAILS OF THE PLAN OF INSTRUCTION.

Anatomy.

GEORGE WOOLSEY, M.D., Professor of Anatomy.
IRVING S. HAYNES, M.D., Professor of Practical Anatomy.
DR. WILLIAM F. STONE, Instructor and Demonstrator of Anatomy.
DR. FRANK S. FIELDER, Demonstrator of Anatomy.
DR. JOHN F. CONNORS, Demonstrator of Anatomy.
DR. WILLIAM A. DOWNES, Demonstrator of Anatomy.
DR. BURTON J. LEE, Demonstrator of Anatomy.
DR. JOSEPH S. WHEELRIGHT, Assistant in Anatomy.
DR. JOHN J. NUTT, Assistant in Anatomy.

Anatomy is taught in the first and second years by lectures, recitations, section demonstrations aud laboratory courses, and by dissection. The course in anatomy is arranged to correspond as far as possible with the courses in physiology and histology.

Lectures in the first year are confined to the 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 surgical anatomy, the students being already well grounded in descriptive anatomy.

One lecture a week is given during the first half of the second year by the Professor of Practical Anatomy on the development and gross anatomy of the nervous system, and the topographical anatomy of one of the extremities.

Descriptive Anatomy is taught by recitations, section demonstrations and laboratory courses and by 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 the recitations are upon the bones, joints, muscles, arteries, veins, and a preliminary study of the central nervous system; during the second year upon the nervous system and the viscera.

PRACTICAL ANATOMY.

Section Demonstrations are now conducted as laboratory courses in which a given region is not only demonstrated, but each member of the group is required to identify the structures on the part, specimen or model. They are conducted by the Professor and Demonstrators of Practical Anatomy twice a week for each section during the first half of the first year and the last half of the second year, and once a week during the rest of the first and second years.

During the first three months of the first year the students are taught by section demonstrations on that part of the cadaver they are next to dissect; 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 courses 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 studied. In the second year the brain and nervous system, the organs of sense, the thoracic and abdominal viscera, and the perineum are studied.

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. Twelve hours a week are assigned in the schedule for this anatomical laboratory course during the first and second year, and dissection is permitted at any time after 10 A.M. that 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, including the joints. This course is begun after the recitations and section demonstrations have prepared each student for the part assigned to him.

The second course consists of the dissection of four parts and is designed for second year students and those first year students who 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.

Examinations.—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 iu practical anatomy.

SUMMARY.*

	First Year.	*Second Year.*
Lectures	30 hours.	90 hours.
Demonstrations	45 hours.	45 hours.
Recitations	60 hours.	30 hours.
Dissection	288 hours.	200 hours.

EMBRYOLOGY.

Lectures	15 hours.
Laboratory	30 hours.

Text Book. Gerrish, second edition.

Collateral Reading—Cunningham; Morris; Gray; Quain; Toldt's *Atlas of Human Anatomy*; Woolsey, *Applied Surgical Anatomy*; Deaver's *Surgical Anatomy*; Haynes, *Guide to Dissection* and *Manual of Anatomy*.

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*This and the following summaries represent the total number of hours for each student.

Physiology.

AUSTIN FLINT, M.D., LL.D., Professor of Physiology.
DR. JOHN A. HARTWELL, Assistant Professor and Instructor.
DR. JOSEPH S. WHEELWRIGHT, Assistant.
ROBERT E. GABY, A.B., Assistant.

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.

As a preparation for the study of physiology proper, first-year students, during the first half of the session, receive instruction in the gross auatomy of the thoracic and abdominal viscera, by section demonstrations in the department of Practical Anatomy. The histology of the heart and blood-vessels, respiratory organs, alimentary canal and glandular organs is taught in the laboratory and by recitations.

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 in 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 encephalou and cranial nerves, and from the department of Histology in the functional traits in the central nervous system.

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 and force. 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. The first ten 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. — Part 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 carbohydrates and fats, proteids and albuminoids, food-stuffs, and the digestive secretions, endosmosis and exosmosis, and the chemistry of blood, bile, urine, and the simple tissues.

A laboratory course of forty hours is given to the second year students on the subject of Embryology. This is under the supervision of the department of Pathology.

In addition to the work in histology and physiological chemistry and in close connection with the lectures on physiology proper, the Assistant gives, 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 hour is 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.

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.

SUMMARY.

	First Year.	*Second Year.*	*Fourth Year.*
Lectures	45 hours.	45 hours.	6 hours.
Demonstrations	15 hours.	30 hours.	
Recitations	45 hours.	60 hours.	

Text Book—Flint's *Physiology*, fifth edition, 1905.

Collateral Reading—Kirke's *Handbook of Physiology*, nineteenth English edition, 1904; Schaffer's *Text Book of Physiology*; Stewart; Foster.

ALLIED BRANCHES.

Physiological Chemistry (see Department of Chemistry, Physics and Toxicology).

Embryology (see Department of Pathology).

Chemistry, Physics, and Toxicology.

RUDOLPH A. WITTHAUS, M.D., Professor of Chemistry.
DR. IVIN SICKELS, Assistant Professor.
DR. LOUIS W. RIGGS, Instructor.
DR. CHARLES G. L. WOLF, Instructor.
DR. B. J. DREYFUS, Assistant.
Mr. W McKIM MARRIOTT, B.S., Assistant.

Lectures.—Students of the first year will receive three 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 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 mineral poisons.

Students of the second year will receive laboratory instruction two hours weekly until February 14th, 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 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.

SUMMARY.

	First Year.	*Second Year.*	*Third Year.*
Recitations	60 hours.	60 hours.	
Laboratory	96 hours.	84 hours.	
Lectures	90 hours.	60 hours.	20 hours.

Text Book—Witthaus, *Manual of Chemistry.*

Collateral Reading — Wolf, *Laboratory Handbook;* Ganot's *Physics.*

Materia Medica and Therapeutics.

HENRY P LOOMIS, M.D., Professor of Materia Medica and Therapeutics.

DR. WARREN COLEMAN, Instructor.

DR. EDMUND P. SHELBY, Instructor.

DR. ROBERT ANTHONY HATCHER, Ph.G., Instructor in Pharmacolgy.

DR. WILLIAM J. JONES, Clinical Assistant.

Instruction is given in this department during the second, third, and fourth years by means of: 1. Lectures. 2. Clinical instruction. 3. Recitations. 4. 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 methods 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 diseases. 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 aspirator, leeches, cups, cautery, 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 conditions observed will be systematically studied, and opportunities will be given to the members of the class to make personal examination of the patient 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 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 the 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 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. Instruction includes numerous exercises involving the manipulation of crude drugs and preparations, the occasion being used to review their physicial, chemical, and medical properties.

About half of the laboratory course will be devoted to demonstrations and operations by the students upon frogs and mammals. This instruction, termed pharmaco dynamics, is recognized as essential for a correct understanding of therapeutics.

In addition to these exercises the student will have frequent opportunities for examining the extensive materia medica collection, the ability to recognize the more important specimens being obligatory.

Considerable attention will be paid to prescription writing, and test prescriptions are compounded by members of the class.

SUMMARY.

	Second Year.	*Third Year.*	*Fourth Year.*
Lectures		47 hours.	30 hours.
Recitations		60 hours.	30 hours.
Laboratory	90 hours.		
Clinics		30 hours.	30 hours.
Sections		5 hours.	5 hours.

Text Book—White and Wilcox, *Materia Medica and Therapeutics.*
Collateral Reading—Coleman, *Syllabus of Materia Medica*, *American Text Book of Applied Therapeutics;* Thompson, *Practical Dietetics*. Sollman's *Pharmacology.*

Medicine.

W. GILMAN THOMPSON, M.D., Professor of Medicine.
ALEXANDER LAMBERT, M.D., Professor of Clinical Medicine.
WARREN COLEMAN, M D., Professor of Clinical Medicine.
CHARLES E. NAMMACK, M.D., Professor of Clinical Medicine.
LEWIS A CONNER, M.D., Professor of Clinical Medicine.
DR. C. N. BANCKER CAMAC, Instructor and Assistant.
DR. MONTGOMERY SICARD, Instructor and Assistant.
DR. FREDERICK L. KEAYS, Instructor and Assistant.
DR. THOMAS WOOD HASTINGS, Instructor and Assistant.
DR. JOHN W. COE, Instructor and Assistant.
DR. WALTER L. NILES, Instructor and Assistant.
DR. THEODORE B. BARRINGER, Instructor and Assistant
DR. NATHANIEL R. NORTON, Instructor and Assistant.
DR. MORTIMER WARREN, Instructor and Assistant.

The Course of Medicine comprises a graded plan of study extending throughout three years. General didatic lectures upon the the practice of medicine are wholly supplanted by bedside and dispensary instruction and recitations. The course includes the following subdivisions :

Second Year :

Recitations from a text-book upon elementary medicine, with written reviews.

Third Year :

1. Recitations from an advanced text-book, with written reviews.
2. Physical diagnosis of the heart and lungs.
3. History recording.
4. Bedside course in symptomatology.
5. Dispensary course in general medicine.
6. Clinical Pathology.
7. Twenty lectures on symptomatology.
8. Hospital medical clinics.

Fourth Year :

1. Advanced bedside study iu symptomatology and diagnosis.
2. Demonstrations of patients by the student before the class in the out-patient clinic.
3. Physical diagnosis.

4. Hospital medical diagnosis clinics.
5. Medical conferences.
6. Ten lectures upon diatheses, toxæmias, etc.
7. Elective advanced work in clinical diagnosis (clinical pathology, history-recording, etc.).
8. Recitations in medicine.

The details of the methods of instruction in medicine for each year of the curriculum are as follows:

SECOND-YEAR STUDENTS.

Recitations.—Second-year students begin the study of medicine with systematic recitations each week from an elementary text book, in which the subjects of nomenclature, etiology, morbid anatomy, and typical symptoms only are dwelt upon.

THIRD-YEAR STUDENTS.

Recitations.—Third-year students recite twice each week from an advanced text-book on the Practice of Medicine, 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 Professors of Clinical Medicine on rounds through the hospital wards. Examples of all the common diseases are studied, and the student has opportunity to personally examine many cases of disease in different stages of development, and of following their daily progress. A special course in general medical diagnosis is given at the bedside, in which the student observes cases illustrating all the important physical examinations.

Dispensary Classes.—Students in small clases are instructed in general medicial diagnosis by Dr. Barringer in the new Out Patient Department of Bellevue Hospital.

Clinical Laboratory Courses are conducted in immediate connection with the study of hospital and dispensary cases.

The laboratory is designed to meet the three requirements of:

(1) *Teaching*; (2) *Original Research, and* (3) *Diagnosis.*

(1) *Teaching.*—The third-year class is divided into small sections, so that each member receives the personal assistance of the demon-

strator. 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 mark received by him in medicine. When assigned to cases at the general medical clinic in fourth-year the student is required to report the result of his examination of the sputum, blood, urine, etc.

The apparatus employed may readily be transported to the bedside, the work being thus essentially practical, and the student *himself* uses it so that he may become familiar with its care and application.

The course comprises the thorough study of the sputum, blood, gastric contents, fæces, urine, exudates and transudates.

Each student is furnished typical specimens which he stains and studies at the demonstrations.

(2) *Original Research.* Facilities are offered to graduate and undergraduate special students for the undertaking and publication of original investigations.

(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.

Physical Diagnosis.—Physical diagnosis of the chest is taught in classes not exceeding a dozen students each. This course of 30 lessons for each class is very comprehensive, owing to the large number of patients in the class of heart and lung diseases at 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 Profossor Loomis, as described for the fourth year. These clinics are held weekly in the amphitheatre of Bellevue Hospital.

Lectures.—A course of twenty 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.

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 Drs. Lambert and 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 previously studied in the hospital wards. 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, and a few of them are conducted in coöperation with the Professor of Surgery in order to present to the students the value of conjoint medical and surgical points of view in appropriate cases. 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 opportnnity to examine patients, study minor ailments, as well as all the forms of disease in the ambulatory cases of a large and varied clinical service. More than 5,000 cases were treated during the past year in this department alone of the dispensary.

Lectures.—A course of ten lectures is given by the Professor of Medicine upon such general topics as the diatheses, toxæmias, auto-intoxication, cachexias, etc. Three lectures are also given by Dr. Conner upon the Internal Secretions, and three lectures by Dr. Camac upon the Clinical Aspects of Immunity.

Medical Conferences.—Under Dr. Coleman's direction, students are assigned to special cases which they study in detail for several weeks, reviewing the literature of the subject, and which they then report in writing at a medical conference, at which their fellow-students are called upon to offer criticisms and general discussion.

An elective course in advanced clinical pathology and diagnosis is offered in the fourth year.

SUMMARY.

	Second Year.	*Third Year.*	*Fourth Year.*
Lectures		20 hours.	10 hours.
Recitations	30 hours.	60 hours.	30 hours.
Clinics		46 hours.	66 hours.
Sections		50 hours.	78 hours.

CLINICAL PATHOLOGY.

Laboratory	60 hours.
Recitations	6 hours.

Text Books—Thompson's *Practical Medicine;* Musser, *Medical Diagnosis*. Tyson's *Physical Diagnosis;* Salinger and Kalteyer, *Medicine.*

Collateral Reading—American System of Practical Medicine, Loomis Thompson.

Surgery.

LEWIS A. STIMSON, M.D., Professor of Surgery.
FREDERIC S. DENNIS, M.D., Professor of Clinical Surgery.
GEORGE WOOLSEY, M.D., Professor of Clinical Surgery.
FREDERICK KAMMERER, M.D., Professor of Clinical Surgery.
FREDERICK GWYER, M.D., Professor of Clinical Surgery.
FRANCIS W. MURRAY, M.D., Professor of Clinical Surgery.
PERCIVAL R. BOLTON, M.D., Professor of Clinical Surgery.
ALEXANDER B. JOHNSON, M.D., Professor of Clinical Surgery.
DR. BENJAMIN TILTON, Instructor.
DR. JOHN ROGERS, Instructor.
DR. CHARLES L. GIBSON, Instructor.
DR. ARCHIBALD E. ISAACS, Instructor.
DR. JAMES MORLEY HITZROT, Instructor.
DR. GEORGE E. DODGE, Assistant.
DR. WILLIAM F. STONE, Assistant.
DR. WILLIAM A. DOWNES, Assistant.

Surgery will be taught in the recitation room, at the bedside, in the dispensaries, 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 also be given at the bedside.

In the third year recitations are continued upon regional surgery; the class is instructed in sections in Bellevue Hospital in history-tak-

ing and methods of surgical examination and diagnosis, three hours a week for part of the term; and also two hours a week bedside instruction. 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 throughout the term 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; may attend the lectures and 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, the administration of ether and assisting at operations.

The opportunities for the 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.

In addition to the clinics at Bellevue and the New York hospitals specified above, Professor Gibson will give clinics at St. Luke's and the General Memorial hospitals at dates to be announced during the session.

Lectures on special topics are given in the college lecture courses in the second term, to which students of all classes are admitted.

Operative Surgery will be taught to small sections of the class in the fourth year. The course consists of recitations, work upon the cadaver, the bandaging. As the material is abundant, each member of the class will perform 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.

SUMMARY.

	Second Year.	*Third Year.*	*Fourth Year.*
Lectures		30 hours.	30 hours.
Recitations	60 hours.	60 hours.	30 hours.
Clinics		86 hours.	86 hours.
Sections		25 hours.	35 hours.
Operative Surgery			30 hours.

Text Book—Tillman.

Collateral Reading—American Text Book; Parks' *Surgery*; Stimson's *Fractures and Dislocations*; Stimson's *Operative Surgery*; Dennis, *System of Surgery*.

Obstetrics.

J. CLIFTON EDGAR, M.D., Professor of Obstetrics and Clinical Midwifery.
DR. RUSSELL BELLAMY, Instructor.
DR. GEORGE D. HAMLEN, Instructor.
DR. ALBERTUS A. MOORE, Instructor.
DR. I. L. HILL, Instructor.
DR. GUSTAVE SEELIGMANN, Instructor.

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 an 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 appreciatton 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 in character. To this end ample blackboard 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 by Professor Edgar a portion of the year for both the third and fourth-year classes at the Manhattan Maternity and Dispensary, 327 East 60th Street. 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 the 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 attendance 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. To fulfill this requirement students may register as internes in the Manhattan Maternity and Dispensary, 327 East 60th Street, and receive this practical instruction from Professor Edgar and the instructor in obstetrics. Students are lodged in the above hospital for periods of two weeks or more and attend confinement cases both in the hospital building and in the tenement house districts of the upper east side of the city.

Duriug the student's attendance upon his practical maternity course he may be excused from the exercises of the College during the fourth college year, but he should take his practical obstetric course during vacation time. Students will attend confinement cases under the supervision of the clinical instructors, and may obtain further information concerning their practical obstetric work by applying at the Secretary's office.

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 dry 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 palpitation, and pelvic mensuration.

6. **Obstetric Histology, Pathology, and Bacterology.**—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.

SUMMARY.

	Second Year.	*Third Year.*	*Fourth Year.*
Lectures		30 hours.	30 hours.
Recitations	30 hours.	30 hours.	
Clinics		30 hours.	30 hours.
Sections		15 hours.	

Text-Book—Edgar's *Practice of Obstetrics.*

Gynæcology.

WILLIAM M. POLK, M.D., Professor of Obstetrics and Gynæcology.
DR. GEORGE D. HAMLEN, Instructor.
DR. GEORGE G. WARD, JR., Instructor.
DR. CHARLES C. BARROWS, Instructor.
DR. JOHN ASPELL, Instructor.

Instruction in gynæcology is given by recitations; lectures, ward and clsss-room demonstrations, clinics, and laboratory demonstrations.

Six Lectures, upon topics of special interest and importance to the subject as a whole, will be given during the fourth year.

Recitations are planned to cover the entire subject, and are held one hour a week during the fourth 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 the 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 actual practice 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.

SUMMARY.

	Third Year.	*Fourth Year.*
Lectures	6 hours.	6 hours.
Recitations		30 hours.
Clinics	30 hours.	30 hours.
Sections		20 hours.

Text-Book—Penrose's *Gynæcology*.

Collateral Reading—Dudley's *Gynæcology*. Garrigue's *Diseases of Women*.

Department of Pathology.

[INCLUDING HISTOLOGY, GROSS AND MICROSCOPICAL PATHOLOGY, AND BACTERIOLOGY.]

JAMES EWING, M.D., Professor of Pathology.
DR. BERTRAM H. BUXTON, Professor of Experimental Pathology.
DR. JEREMIAH S. FERGUSON, Instructor in Histology.
DR. OTTO H. SCHULTZE, Instructor in Gross Pathology.
DR. MAX G. SCHLAPP, Instructor in the Histology and Pathology of the Nervous System.
DR. WILLIAM J. ELSER, Instructor in Bacteriology.
DR. JAMES C. JOHNSTON, Instructor in Pathology.

DR. ISRAEL STRAUSS, Instructor in Embryology.
DR. HENRY T. LEE, Assistant in Pathology.
DR. GUY D. LOMBARD, Assistant in Histology.
DR. J. C. ROPER, Assistant in Histology.
DR. JOHN C. TORREY, Assistant in Histology and Bacteriology.
DR. GEORGE PATTEN BIGGS, Demonstrator of Gross Pathology.
DR. LEOPOLD JACHES, Assistant in the Histology and Pathology of the Nervous System.
DR. RICHARD WEIL, Demonstrator in Gross Pathology.
DR. HARVEY E. JORDON, Assistant in Histology and Embryology.
DR. THOMAS A. NEAL, Assistant in Gross Pathology.
DR. FRANK M. HUNTOON, Assistant in Bacteriology and Pathology.

Histology.

The work in this subject is conducted throughout the first and during a portion of the second year by laboratory exercises and by recitations. Laboratory exercises, in two two-hour sessions weekly during the first year, and one two-hour session weekly during 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 physiology, 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 of 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 week in the laboratory exercises.

An examination is held at the end of each year. The standing of the student in this, as in the other subjects, is determined equally rom the work in the laboratory exercises and in the recitations.

Embryology.

In the latter half of the first year, a series of topics in embryology which have special importance in medicine and pathology, are presented in a laboratory course, occupying about 40 hours for each student. These topics embrace the fertilization and maturation of the ovum, formation of germ layers, and the main facts regarding the developement of the different systems and viscera. These topics are illustrated by microsopical sections, charts, lantern slides, and models.

Pathology.

The course of instruction in pathology in the second year comprises a preliminary course of lectures on the theory and classiffcation 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 the second year, also, attendance is required at one weekly demonstration 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 microsopical changes in diseased tissues. In the fourth year the students perform autopsies, and attend one recitation weekly in review of the entire subject.

Miscroscopical Demonstrations in Pathology.—The microscopical demonstrations occupy three two-hour sessions weekly throughout the year, in all about 175 hours. The specimens studied illustrate the topics of inflammation, tumors, autointoxications, 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 autopsis. 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 ordiuary and in medico-legal cases.

Recitations.—One recitation weekly is required of each student throughout the third year.

Lectures.—A series of lectures on special topics in pathology is given to students of the third and fourth years. These topics have included: The Mechanism of Immunity, The Etiology of Tumors, Cerebral Hemorrhage, Comparative Morphology of Cerebral Cortex, etc. Attendance at these lectures is optional.

Experimental Pathology.—During the year 1903 definite plans were formed to facilitate experimental studies in the Department of Pathology. The direct object of the plans is to associate together a number of competent workers whose time shall be entirely devoted to the study of new problems in medical science.

Abundant space and modern facilities have been provided for experimental work in cellular pathology, bacteriology, and physiological chemistry, and are available to approved applicants who desire to engage in this work, under the immediate direction of Professor Buxton. Dr. Vaughan has been appointed a member of this staff, and further appointments in the several branches involved will be made according to the requirements of the work undertaken.

It is the ultimate object of the present plans to increase the number of these workers and enlarge their facilities until they shall form a fully equipped institution of experimental medicine.

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 the 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 inoculation 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 laboratory on the fourth floor of the 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.

SUMMARY.

	First Yr.	*Second Yr.*	*Third Yr.*	*Fourth Yr.*
Histology:				
Recitations	60 hours.	30 hours.		
Laboratory	120 hours.	60 hours.		
Embryology:				
Laboratory				40 hours.
Lectures				15 hours.
Pathology:				
Lectures		10 hours.		
Laboratory			180 hours.	
Recitations			30 hours.	
Gross Pathology:				
Laboratory		15 hours.	60 hours.	30 hours.
Bacteriology:				
Laboratory		90 hours.		

Text-Books—Histology—Stohr, *Text-Book of Histology.*

Pathology—Delafield and Prudden, *Pathological Anatomy and Histology.*

Bacteriology—Sternberg, *Manual of Bacteriology.*

Clinical Diagnosis—V. Jaksch, *Clinical Diagnosis.*

Collateral Reading—Bohm, Davidoff and Huber, *Text-Book of Histology;* Orth, *Pathological Diagnosis;* Ziegler, *General Pathology;* Muir and Ritchie, *Manual of Bacteriology;* Ewing, *Pathology of the Blood.*

SPECIAL DEPARTMENTS OF MEDICINE AND SURGERY.

Diseases of Children.

JOSEPH E. WINTERS, M.D., Professor of Diseases of Children.
DR. WALTER A. DUNCKEL, Instructor.
DR. WILLIAM SHANNON, Instructor.
DR. ROBERT S. ADAMS, Assistant.
DR. SAMUEL M. EVANS, Assistant.
DR. ELISHA M. SILL, Assistant.
DR. HORACE S. STOKES, Assistant.
DR. JOHN H. P. HODGSON, Assistant.
DR. LESTER M. HUBBY, Assistant.

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 iu the Willard Parker Hospital on scarlet fever and diphtheria.

In connection with the dispensary of the Children's Department in the college building there is an amphitheatre for section teaching, and isolation rooms for contagious diseases, so that students have ample opportunity for the personal study of disease.

Two 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.

SUMMARY.

	Third Year.	*Fourth Year.*
Clinics	30 hours.	30 hours.
Sections		10 hours.

Text-Book—Williams, *Medical Diseases of Infancy and Childhood.*
Collateral Reading—Starr, *American Text-Book of the Diseases of Children.*

Surgical Diseases of the Genito-Urinary Organs.

SAMUEL ALEXANDER, M.D., Professor of Genito Urinary Surgery.
DR. FRANCIS C. EDGERTON, Instructor.

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 male genital and urinary organs and in syphilis. It consists in recitations, lectures, clinics, and section work in the dispensary of the college and in the wards of Bellevue Hospital.

Recitations.—Recitations are held during the third and fourth years by the instructors in the department of general surgery.

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. A syllabus of these lectures will be furnished to each member of the class.

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 and post-operative management of cases. 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 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.

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 or the Chief of Clinic. 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.

SUMMARY.

	Third Year.	*Fourth Year.*
Clinics	18 hours.	18 hours.
Sections	15 hours.	10 hours.
Lectures		6 hours.

Text-Book—White and Martin.

Collateral Reading—Hyde and Montgomery, Keyes and Chetwood.

Nervous Diseases.

CHARLES L. DANA, M.D., Professor of Diseases of the Nervous System.
DR. JOSEPH FRAENKEL, Instructor.
DR. J. RAMSAY HUNT, Instructor.
DR. ROBERT M. DALEY, Assistant.
DR. LESLIE J. MEACHAM, Instructor.
DR. ALEXANDER S. LEVERTY, Instructor.

The regular work consists of a preliminary series of lectures 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 held weekly in the amphitheatre of Bellevue Hospital or at the college. Section work is given weekly to classes in the wards of Bellevue Hospital, and three times a week is the dispensary of the college. In this dispensary, section work instruction is given in history-taking in the examination of patients, and in electro-therapeutics.

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 with practical clinical instruction in the amphitheatre, at the bedside, and in the dispensary.

SUMMARY.

	Third Year.	*Fourth Year.*
Lectures	5 hours.	
Clinics	20 hours.	20 hours.
Sections	15 hours.	5 hours.

Text-Book—Dana, *Diseases of the Nervous System.*

Collateral Reading—Gower's *Diseases of the Brain and Spinal Cord;* Dercum, Obersteiner, *Anatomy of the Nervous System.*

Psychiatry.

ADOLPH MEYER, M.D., Professor of Mental Diseases.
DR. GEORGE H. KIRBY, Clinical Instructor.
DR. AUGUST HOCH, Clinical Instructor.

A series of five introductory lectures will be followed by eight clinics of two hours each at the Manhattan State Hospitals on Ward's Island, and seven optional lectures reviewing the clinical demonstrations. Provision will be made for some optional section work on Ward's Island or at the College Dispensary.

The course is to cover the principal data and methods of modern psychopathology, the diagnosis and legal commitment of the insane and the medico-legal problems of insanity.

SUMMARY.

Introductory lectures	5 hours.
Clinics	14 hours.
Lectures (optional)	7 hours.
Section work (optional)	4 hours.

Text-Book—Dana, *Mental Diseases;* Paton, *Psychiatry;* Kraeplin, *Clinical Lectures on Psychiatry.*

Collateral Reading—Tuke's *Dictionary of Psychological Medicine.*

Dermatology.

GEORGE T. ELLIOTT, M.D., Professor of Dermatology.
DR. JAMES C. JOHNSTON, Instructor.
DR. EDWARD PISKO, Instructor.

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.

SUMMARY.

Fourth Year.

Sections	25 hours.

Text-Book—J. Nevins Hyde, *Dermatology;* H. Stilwagon, *Diseases of the Skin.*

Collateral Reading—H. Radcliffe Crocker, third edition.

Laryngology and Rhinology.

CHARLES H. KNIGHT, M.D., Professor of Laryngology.
DR. JAMES E. NEWCOMB, Instructor.
DR. FRANK T. BURKE, Assistant.
DR. CHARLES MACK, Assistant.
DR. WALTER C. MONTGOMERY, Assistant.
DR. PERRY SCHOONMAKER, Assistant.

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 instructor and 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.

SUMMARY.

	Fourth Year.
Lectures	14 hours.
Sections	15 hours.

Text-Book—Knight, *Diseases of the Nose and Throat.*

Collateral Reading—Grünwald, *Atlas of Diseases of the Larynx*; Grünwald, *Atlas of Diseases of the Mouth, Pharynx and Nose.*

Opthalmology.

CHARLES STEDMAN BULL, M.D., Professor of Ophthalmology.
DR. ROBERT G. REESE, Instructor.
DR. J. HERBERT CLAIBORNE, Instructor.

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 didatic, and consider the subjects of the external or superficial diseases of the eye, the anomalies of the ocular muscles, and the deep lesions of the eye which are not susceptible of clinical demonstration. 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. Thus the entire field of ophthalmology is covered.

SUMMARY.

	Fourth Year.
Clinics	10 hours.
Sections	20 hours.

Text-Book—Noyes.
Collateral Reading—De Schweinitz, Swanzy, Jackson, Nettleship.

Otology.

FREDERICK WHITING, M.D., Professor of Otology.
DR. GEORGE B. McAULIFFE, Instructor.
DR. WILLIAM S. BRYANT, Instructor.
DR. EARLE CONNER, Assistant.
DR. DONALD BARSTOW, Assistant.
DR. GEO. W. KUNZ, Assistant.
DR. H. E. COOK, Assistant.

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 students with the symptoms and character of the more important diseases.

For clinical instruction in the dispensary, the fourth-year class is divided into sections. Each student receives practical instruction from Professor Whiting and his assistants in the examination of patients, the use of the otoscope, and the various methods of testing and hearing. The student is permitted to examine patients and, after a probationary period, to proscribe for them and thus gradually assume the duties of a clinical assistant. The students also have an opportunity of witnessing the more important operations in aural surgery, including intracranial complications at the New York Eye and Ear Infirmary.

SUMMARY.

	Fourth Year.
Clinics	9 hours,
Sections	15 hours.

Text-Book—Bacon on the Ear.
Collateral Reading—Politzer, *Diseases of the Ear;* Macewen, *Pyogenic Infective Diseases of the Brain and Spinal Cord.*

Orthopædic Surgery.

NEWTON M. SHAFFER, M.D., Professor of Orthopædic Surgery.
DR. P. HENRY FITZHUGH, Instructor.
DR. HENRY SCOTT, Assistant.
DR. DEAS MURPHY, Assistant.
DR. PERCY WILLARD ROBERTS, Assistant.
DR. JOHN JOSEPH NUTT, Assistant.

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.

SUMMARY.

Fourth Year.

Clinics ..... 10 hours.
Sections ..... 10 hours.

Text-Book—Bradford and Lovett.

Department of Hygiene.

—— —— ——, M.D., Lecturer.

Instruction in many of the branches of hygiene and preventive medicine is a prominent feature in some of the courses pursued in the several departments of Chemistry, Bacteriology, Pathology and Medicine.

The topics thus covered include the chemical and bacterial analysis of air, water and milk; the preservation and adulteration of foodstuffs; and the general diagnosis, control and prevention of infectious disease.

The more distinctive branches of hygiene are presented in a course of ten lectures to the fourth-year students. Some of the topics thus considered are the hygiene of dwellings, ventilation, sanitary plumbing, lighting, water supply, disposal of sewage, school hygiene, cli-

matology, epidermiology and municipal sanitation. These lectures are given by the Professors of Chemistry and Pathology and by special lecturers.

Text-Book—Egbert, *Hygiene and Sanitation.*
Collateral Reading—Notter, *Theory and Practice of Hygiene.*

SUMMARY OF THE PLAN OF INSTRUCTION.

The right is reserved to make amendments to this curriculum as experience may prove necessary.

The hours stated indicate the number of hours assigned to each student.

FIRST YEAR.

Anatomy.

Lectures, one hour weekly	30 hours
Demonstrations, 1½ hours weekly	45 hours
Recitations, 2 hours weekly	60 hours
Dissection, 12 hours weekly, 16 to 20 weeks	190 to 240 hours

Physiology.

Lectures. 3 hours weekly, half-term	45 hours
Laboratory Demonstrations, 1 hour weekly, half-term	15 hours
Recitations, 3 hours weekly, half-term	45 hours

Chemistry.

Recitations, 2 hours weekly	60 hours
Laboratory, 4 hours weekly, 18 weeks	72 hours
Laboratory, 2 hours weekly, 12 weeks	24 hours

Physics.

Lectures, 3 hours weekly	90 hours

Histology.

Laboratory, 4 hours weekly	120 hours
Recitations, 2 hours weekly	60 hours

Embryology.

Lectures, 1 hour weekly, 15 weeks	15 hours
Laboratory, 2 hours weekly, 20 weeks	40 hours

Electives.

Laboratory Pharmacology.
Physiological Chemistry.
Bacteriology.

These elective courses are open to certain advanced students as described on page 251.

In the course of the session one written review is held in the subjects recited upon. The papers are examined by the professors of the respective branches.

SECOND YEAR.

Anatomy.

Lectures, 2½ hours weekly	75 hours
Demonstration Lectures, 1 hour weekly, 15 weeks	15 hours
Demonstrations, 1½ hours weekly, 30 weeks	45 hours
Recitations, 1 hour weekly	30 hours
Dissection, 10 hours weekly, 8 to 12 weeks	8 to 120 hours

Physiology.

Lectures, 3 hours weekly, half-term	45 hours
Recitations, 4 hours weekly, half-term	60 hours
Laboratory Demonstrations, 1 hour weekly	30 hours

Organic and Physiological Chemistry.

Laboratory, 2 hours weekly, 18 weeks	36 hours
Laboratory, 4 hours weekly, 12 weeks	48 hours
Lectures, 2 hours weekly	60 hours
Recitations, 1 hour weekly	30 hours

Pharmacology.

Laboratory, 6 hours weekly, 15 weeks	90 hours

Bacteriology.

Laboratory, 6 hours weekly, 15 weeks	90 hours

Histology.

Laboratory, 2 hours weekly	60 hours
Recitations, 1 hour weekly	30 hours

Pathology.

Lectures	10 hours
Gross Pathology, 1 hour weekly for 15 weeks	15 hours

Medicine.

Recitations, 1 hour weekly	30 hours

Surgery.

Recitations, 2 hours weekly	60 hours

Obstetrics.

Recitations, 1 hour weekly	30 hours

Electives.

Bacteriology.
Materia Medica Recitations of the Third Year.
Manikin Course in Obstetrics.
Obstetrical Clinic.

The conditions under which certain students may avail themselves of these electives are stated on page 252.

THIRD YEAR.

Medicine.

Lectures, 2 hours weekly, 10 weeks	20 hours
Clinics, 1 hour weekly	30 hours
Clinics, 1 hour weekly, 16 weeks	16 hours
Recitations, 2 hours weekly	60 hours
Section Work, 3 hours weekly, 10 weeks	30 hours
Section Work, 1 hour weekly, 5 weeks	5 hours
Section Work, 3 hours weekly, 5 weeks	15 hours

Surgery.

Lectures, 3 hours weekly, 12 weeks	30 hours
Clinics, 1 hour weekly, 18 weeks	18 hours
Clinics, 1 hour weekly,	30 hours
Clinics, 1 hour weekly, 8 weeks	8 hours
Clinics, 1 hour weekly	30 hours
Recitations, 2 hours weekly	60 hours
Section Work, 3 hours weekly, 5 weeks	15 hours
Section Work, 2 hours weekly, 5 weeks	10 hours

Therapeutics.

Lectures, 1 hour weekly	30 hours
Lectures, 1 hour weekly, 17 weeks	17 hours
Clinics, 1 hour weekly	30 hours
Section Work, 1 hour weekly, 5 weeks	5 hours

Materia Medica.

Recitations, 2 hours weekly	60 hours

Pathology.

Laboratory, 6 hours weekly	180 hours
Recitations, 1 hour weekly	30 hours

Gross Pathology.

Laboratory, 2 hours weekly	60 hours

Clinical Pathology.

Laboratory, 2 hours weekly	60 hours
Recitations, 1 hour weekly, 6 weeks	6 hours

Obstetrics.

Lectures, 1 hour weekly, 30 weeks	30 hours
Clinics, 1 hour weekly	30 hours
Recitations, 1 hour weekly	30 hours
Section Work (manikin), 3 hours weekly, 5 weeks	15 hours

Gynæcology.

Lectures	6 hours
Clinics, 1 hour weekly	30 hours

Toxicology.

Lectures, 1 hour weekly, 20 weeks	20 hours

Diseases of Children.

Clinics, 1 hour weekly	30 hours

Genito-Urinary Surgery.

Clinics, 1 hour weekly, 18 weeks	18 hours
Section Work, 3 hours weekly, 5 weeks	15 hours

Neurology.

Lectures	5 hours
Clinics, 1 hour weekly, 20 weeks	20 hours
Section Work, 3 hours weekly, 5 weeks	15 hours

FOURTH YEAR.

Medicine.

Lectures, 1 hour weekly, 10 weeks	10 hours
Clinics, 1 hour weekly	30 hours
Clinics, 1 hour weekly	30 hours
Clinics, 1 hour weekly, 6 weeks	6 hours
Recitations, 1 hour weekly	30 hours
Section Work, 4 hours weekly, 5 weeks	20 hours
Section Work, 1 hour weekly, 5 weeks	5 hours
Section Work, 4 hours weekly, 5 weeks	20 hours
Section Work, 3 hours weekly, 5 weeks	15 hours
Section Work, 2 hours weekly, 4 weeks	8 hours
Section Work, 4 hours weekly, 5 weeks	20 hours

Surgery.

Lectures, 3 hours, 10 weeks	30 hours
Clinics, 1 hour weekly, 18 weeks	18 hours
Clinics, 1 hour weekly, 8 weeks	8 hours
Clinics, 2 hours weekly	60 hours
Section Work, 1 hour weekly, 5 weeks	5 hours
Section Work, 4 hours weekly, 5 weeks	20 hours
Section Work, 2 hours weekly, 5 weeks	10 hours
Operative Surgery, 6 hours weekly, 5 weeks	30 hours
Recitations, 1 hour weekly	30 hours

Therapeutics.

Lectures, 1 hour weekly	30 hours
Clinics, 1 hour weekly	30 hours
Recitations, 1 hour weekly	30 hours
Section Work, 1 hour weekly, 5 weeks	5 honrs

Obstetrics.

Lectures, 1 hour weekly, 30 weeks	30 hours
Clinics, 1 hour weekly	30 hours

Gynæcology.

Lectures, 1 hour weekly, 6 weeks	6 hours
Clinics, 1 hour weekly	30 hours
Section Work, 4 hours weekly, 5 weeks	20 hours
Recitations, 1 hour weekly	30 hours

Gross Pathology.

Laboratory, 6 hours weekly, 5 weeks	30 hours

Diseases of Children.

Clinics, 1 hour weekly	30 hours
Section Work, 2 hours weekly, 5 weeks	10 hours

Genito-Urinary Surgery.

Lectures	6 hours
Clinics, 1 hour weekly, 18 weeks	18 hours
Section Work, 2 hours weekly, 5 weeks	10 hours

Neurology.

Clinics, 1 hour weekly, 20 weeks	20 hours
Section Work, 1 hour weekly, 5 weeks	5 hours

Mental Diseases.

Lectures	5 hours
Sections	4 hours
Clinics	14 hours

Dermatology.

Section Work, 5 hours weekly, 5 weeks	25 hours

Laryngology and Rhinology.

Lectures, 1 hour weekly, 14 weeks	14 hours
Section Work, 3 hours weekly, 5 weeks	15 hours

Opthalmology.

Clinics, 1 hour weekly, 10 weeks	10 hours
Section Work, 4 hours weekly, 5 weeks	20 hours

Otology.

Clinics, 1 hour weekly, 9 weeks	9 hours
Section Work, 3 hours weekly, 5 weeks	15 hours

Physiology of the Special Senses.

Lectures, 3 hours weekly, 2 weeks	6 hours

Orthopædic Surgery.

Clinics, 1 hour weekly, 10 weeks	10 hours
Section Work, 2 hours weekly, 5 weeks	10 hours

EXAMINATIONS.

Requirements fot Advancement in Course.

Students are advanced in course from one year to the next upon passing examinations in the work of that year, but examinations in

major or minor subjects may, at the discretion of the Head of the Department include all the work previously covered in the year or years preceding the examinations in question. There is, however, no unnecessary repetition of subjects taught from year to year. Students who have not succeeded in passing all their examinations will be allowed to enter upon the next year's studies, provided they pass examinations in the subjects failed in at the beginning of the session.

Examinations for advancement in course, graduation, and admission to advanced standing are held at the close 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 recitations 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 (including laboratory work).
Physiology (except the nervous system and organs of special sense).

Minor Subjects.—Histology (except the nervous system and organs of special sense).
Embryology.

Conditions allowed (at the spring examinations): 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 between 60 and 75 per cent. will be allowed one reëxamination within two weeks of the completion of the course, failling 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 reëxamined, 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 instructors 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 reviews conducted by the instructors shall be held as soon as possible after the return from the Christmas recess, 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).
Pharmacology.
Laboratory Organic Chemistry.

Conditions allowed: 1 Major and 1 Minor; or 2 Minor subjects.
(See Notes 1, 2 and 3, page 278.)

Subjects of Examination for Admission to the Fourth Year.

Major Subjects.—Materia Medica.
Pathology.

Minor Subjects.—*Obstetrics and Gynæcology.
*Medicine.
*Surgery.
Toxicology.
Clinical Pathology.
Pediatrics. } Clinical Paper.
Neurology. }
Gross Pathology.

Conditions allowed: 1 Major and 1 Minor; or 2 Minor.
(See Notes 1, 2 and 3, page 278.)

Subjects of Examination for Graduation at the End of the Fourth Year.

Major Subjects.—Medicine.
Surgery.
Obstetrics and Gynæcology.
Therapeutics.

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*Students whose recitation marks for the year in medicine, surgery and obstetrics are satisfactory will be excused from examinations in these subjects at the end of the year.

Minor Subjects.—Hygiene.
Ophthalmology.
Neurology.
Laryngology and Rhinology.
Orthopædics.
Pediatrics.
Mental Diseases.
Otology.
Dermatology.
Genito-Urinary Diseases.

The examinations in the major subjects are allowed two hours and in the minor subjects one hour each.

If any student fails to pass in not more than one major, or in two minor subjects, a reëxamination may be allowed within two weeks, and if the candidate is then successful the degree will be conferred at the later Commencement at Ithaca.

If the candidate fails to pass in any subject at this second examination the work of the fourth year must be repeated.

Requirements for Graduation.

1. Candidates for the degree of doctor of medicine must have studied medicine for four full years in an accredited 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 Cornell Regents' medical-student certificate as evidence of having complied with the requirements for admission.

4. Candidates must have dissected at least seven parts in anatomy (see p. 255). They must, further, have taken the regular course of two weeks in practical obstetrics.

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, surgery, therapeutics, obstetrics, and gynæcology, and the special branches as are specified on p. 289.

6. Candidates rejected at the final examination will not be reëxamined until after having repeated their fourth year of study.

Before being readmitted to the fourth year the candidate must pass a satisfactory examination in anatomy, physiology, chemistry and physics, and materia medica.

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.

Final Examination 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.

Requirements for Licensc to Practice Medicine in the State of New York.

All requirements for admission shonld be filed at leat one week before examination.—The 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 1).

3. Evidence that applicant has the general education required preliminary to receiving the degree of bachelor or doctor of medicine in this State (medical-student certificate. See examination handbook).

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 2 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 endorsement 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.

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.

In commemoration of John Metcalf Polk, an Instructor in this College, who graduated from the Medical Department of Cornell University on June 7th, 1899, and died on March 29th, 1904, an annual prize of $500 will be presented at each Commencement to the members of the graduating class who have completed the full course of study in Cornell University Medical College.

This prize will be awarded as follows:

To the student having the highest standing	$300
To the student having the second highest standing	125
To the student having the third highest standing	75

Two prizes, one of $50 and another of $25, are offered by Professor Dana to the students of the graduating class, to be designated by him, who make the two best reports of neurological cases.

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 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', 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 of service differ. The details can be learned by application, written or in person, to the superintendents or to the secretaries of the medical boards of the various hospitals.

Special Courses.

The Medical Department will continue during the summer of 1905 the System of Special Courses which has proved of advantage.

The courses are designed primarily for advanced students or for workers in specialized lines of research or for post-graduates. They are scheduled to begin early in May, and to continue about six weeks in order to terminate before the hottest weather. These courses include different portions of the subjects of normal histology: clinical, gross, and histological pathology; bacteriology, chemistry, anatomy, and operative surgery.

A pamphlet giving full details can be obtained by application to the Secretary of the College.

STAFF OF INSTRUCTION AT ITHACA.

BURT GREEN WILDER, B.S., M.D., Professor of Neurology, Vertebrate Zoology, aud 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 Chemistry.

WILLIAM RIDGELY ORNDORFF, A.B., Ph.D., Professor of Organic and Physiological Chemistry.

ERNEST GEORGE MERRITT, M.E., Professor of Physics.

ABRAM TUCKER KERR, B.S., M.D., Professor of Anatomy.

GEORGE SYLVANUS MOLER, A.B., B.M.E., Assistant Professor of Physics.

BENJAMIN FREEMAN KINGSBURY, Ph D., M.D., Assistant Professor of Physiology.

EMILE MONNIN CHAMOT, B.S., Ph.D., Assistant Professor of Sanitary Chemistry and Toxicology.

JOHN SANFORD SHEARER, B.S., Ph.D., Assistant Professor of Physics.

ERNEST BLAKER, B.S., Ph.D., Assistant Professor of Physics.

EUGENE BAKER, B.S., M.D., Lecturer on Obstetrics and Practice of Medicine.

MARTIN BUEL TINKER, B.S., M.D., Lecturer on Surgery.

SAMUEL HOWARD BURNETT, A.B., M.S., D.V.M., Instructor in Comparative Pathology and Bacteriology.

HUGH DANIEL REED, B S., Ph.D., Instructor in Systematic and Economic Zoology.

GERSHOM FRANKLIN WHITE, B.S., Ph.D., Instructor in Pathology aud Bacteriology.

ARTHUR WESLEY BROWNE, M.S., Ph.D., Instructor in Chemistry.

ELGIN ANGUS GRAY, B.A., M.B., Instructor in Anatomy.

THOMAS G. DELBRIDGE, A.B., Instructor in Chemistry.

RALPH CUTHBERT SNOWDON, A.B., Instructor in Chemistry.

MERVIN DRESBACH, M.S., M.D., Instructor in Physiology.

OMAR RAY GULLION, M.A., Instructor in Physiology and Pharmacology.

JOSEPH H. HATHAWAY, A.M., M.D., Assistant Demonstrator of Anatomy. Assistant in Histology and Embryology.

WILLIAM FREDERICK JELKE, Ph.B., M.D., Assistant Demonstrator of Anatomy.

OTTO LOUIS GOEHLE, A.B., M.D., Assistant Demonstrator of Anatomy.

CASSIUS WAY, B.Agr., Assistant in Bacteriology and Pathology.

EFFIE ALBERTA READ, A.B., Assistant in Histology and Embryology.

HARRY CLIFFORD LUKE, Ph.G., Assistant in Pharmacology and Physiology.

WESLEY MANNING BALDWIN, Assistant in Anatomy.

ELMER EUGENE RANDOLPH, Assistant in Chemistry.

WILLIAM JOHN BADER, Assistant in Chemistry.

JOHN WILLIAM TURRENTINE, Assistant in Chemistry.

FRANK HAWKINS, Assistant in Chemistry.

MORTIMER JAY BROWN, Assistant in Chemistry.

EARL VINCENT SWEET, A.B., Assistant in Histology and Embryology.

ALBERT HAZEN WRIGHT, A.B., A.M., Assistant in Neurology and Vertebrate Zoology.

JOHN ALEXANDER BLACK, Assistant in Chemistry.

ARTHUR D. CAMP, A.B., Assistant in Chemistry.

FRED HUNNINGTON JENNINGS, A.B., Assistant in Chemistry.

MORTIMER F. MEHLING, A.B., Assistant in Chemistry.

ABRAM T. KERR, B.S., M.D., Secretary of the Faculty at Ithaca.

INSTRUCTION AT ITHACA.

During the First Two Years of the Course.

General Statement.

From its very foundation Cornell University has offered special courses for students preparing for the study of Medicine; first in the Natural History course, and later also in a special two year Medical Preparatory course. In 1898, the Medical College was established in New York City with a four years course. At the same time the work of the first two years was duplicated at the University in Ithaca, since

many of the fundamental scientific subjects of which this part of the course mainly consists were already provided for in the long established departments of Botany, Zoology, Comparative Anatomy, Physics, Chemistry, Physiology, Histology, Embryology, and Bacteriology. The courses in these departments were modified where necessary and additional courses were added so as to make the work at Ithaca fully equivalent to the first two years in New York City.

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 and Comparative Anatomy, of Agriculture, of Botany, of Geology, and of Veterinary Medicine. The University Library with its 280,000 bound volumes, 44,000 pamphlets, and 600 current periodicals and transactions, is as freely open to Medical students as to other University students.

Through the generosity of the late Dean Sage, of Albany the University has been enabled to erect a building especially designed for anatomy, histology, embryology and physiology. The building is constructed of Ohio sandstone. The general form is that of an E, 157 feet long, and 50 feet wide, with wings 40 feet square.

In the cellar, are the cold-storage, embalming and cremating rooms and store rooms and a large room forty feet square for aquaria, projection, etc.

In the basement is the ventilating and cold-storage machinery, a large lecture room, a recitation room, and an office for the departments of surgery, medicine and obstetrics, besides the lower part of the large amphitheatre.

On the first floor are located the cloak rooms for men and women college office, library, faculty room, office, and private laboratory for histology, two recitation rooms, upper part of the large amphitheatere and assembly room.

The second floor is devoted to the departments of histology and physiology, each with a large general laboratory, a research laboratory preparation rooms, the private laboratories for the staff of instruction.

The third floor consists of general and special dissecting rooms, study rooms, and amphitheatre, besides rooms for the staff.

The attic is utilized for photography, macerating the skeletons, and for storage.

The air in the building is constantly changed by forced ventilation. The lighting is especially good in all the rooms.

DEPARTMENT, METHODS, AND FACILITIES.

Anatomy.

ABRAM T. KERR, B.S., M.D., Professor.
ELGIN A. GRAY, B.A., M.B., Instructor.
JOSEPH H. HATHAWAY, A. M., M.D., Assistant Demonstrator.
WILLIAM F. JELKE, Ph.B., M.D. Assistant Demonstrator.
OTTO L. GOEHLE, A.B., M.D., Assistant Demonstrator.
WESLEY M. BALDWIN, Assistant.

Anatomy is given in both the first and second years and is mostly concentrated into the first term. This gives a large amount of continuous time for the subject which consists mainly of practical work in the laboratory. Each student is independent of the others and those with special training or ability are encouraged to do more than the required work. Personal quizzes and demonstrations are given upon each stage of the work. In addition to this, there are frequent recitations and demonstrations to small sections of the class. The students are encouraged to make careful notes and drawings of the conditions which they find in their specimens. To facilitate the drawings, outline record charts are furnished. Clay also is provided for modelling bones and other parts. The department is well equipped with models and special preparations. These are for use in the demonstrations and also for the personal use of students in the laboratory.

There is plenty of dissecting material which is embalmed and kept in cold storage so as to be ready for use when needed. In the two years the student is required to make at least one complete satisfactory dissection of the human body. The work is distributed as follows :

In the first year, thirty-two and a half hours per week are given to Anatomy. A complete disarticulate skeleton is loaned to each group of two students. The vertebræ, ribs and bones of the upper extremity are studied first. Upon satisfactorily completing these the upper is studied. Upon completing the dissection of this first part, the bones of the head are studied and followed by the dissection. The lower extremity is then studied in a similar manner. As a preparation for the second term's work in Histology and Physiology an elementary course of demonstrations on the gross anatomy of the viscera is given near the end of the term.

In the second year, first term, twenty-five hours a week are devoted to laboratory work. The thoracic and abdominal viscera and central

nervous system are dissected. The work on the viscera is given in the first part of the term and the dissection is accompanied by special recitations and demonstrations to small groups. The gross anatomy of the central nervous system comes in the latter part of the term. In the second term of the second year, five demonstrations or recitations each week on topographical and regional anatomy are given to small sections of the class. In these the work of the preceding two years is reviewed. dissections are shown and the practical bearing of Anatomy on Medicine aud Surgery is particularly emphasized.

Those who satisfactorily complete the required work and others properly qualified may do advanced or research work.

1. **Anatomy.** Laboratory work with section demonstrations and recitations, thirty-two and a half actual hours weekly from September to February. Course 1 is required of first-year students in Medicine. Professor KERR, Instructor GRAY, Assistant Demonstrators HATHAWAY, JELKE and GOEHLE.

2. **Anatomy.** Laboratory work with sectiou demonstrations and recitations, twenty-two and a half actual hours weekly. September to February. Professor KERR, Instructor GRAY, Assistant Demonstrators HATHAWAY, JELKE and GOEHLE. Course 2 is required of second-year students in Medicine.

3. **Topographical and Regional Anatomy.** Section demonstrations five hours weekly. February to June. (Required of second-year students in Medicine.)

4. **Thoracic and Abdominal Viscera.** Section demonstrations two and a half hours weekly. (Required of second-year students in Medicine.) September to February. Professor KERR.

6. **Advanced and Research Work.** Laboratory work, elective, eight or more actual hours per week. Professor KERR and Instructors.

8. **Structure, Development, and Physiology of the Nervous System and the Organs of Sense.** Credit, three hours. Second year. Professors GAGE, KERR and KINGSBURY.

The course consists of three parts: (A) Gross anatomy with special reference to medicine and surgery, Dr. KERR; (B) Histology and Development, Professor GAGE; (C) Physiology, Dr. KINGSBURY.

The instruction in each part consists of laboratory work, demonstrations or lectures aud recitations. The gross anatomy, histology and development are given together during the latter part of the first term, and are immediately followed by the physiology in the first part of the second term.

Histology and Embryology.

SIMON HENRY GAGE, B.S, Professor.
EFFIE ALBERTA READ, A.B., Assistant.
JOSEPH H. HATHAWAY, A.M., M.D., Assistant.
EARL V SWEET, A.B., Assistant.

The rooms for the use of the department are on the first and second floors of Stimson Hall. They are almost perfectly lighted and consist of a large general laboratory, an advanced 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 demonstration 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.

1. **Microscopy, Histology and Embryology.** Second half-year. Credit 8 University hours. The instruction is given in 5 three hour periods per week. During the laboratory periods there are two recitations and one or more lecture-demonstrations each week. Laboratory work M., T., 2–5, Th., 10–1, F., 9–12, S., 8–11. Professor GAGE and Assistants READ, HATHAWAY and SWEET.

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 subsequeut work of the department. First two weeks.

Histology.—This includes the study of the fine anatomy of man and of the domestic animals, and also the fundamental methods of histologic investigation and demonstration. This work continues seven weeks.

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. This work continues seven weeks.

7. **Structure, Development, and Physiology of the Nervous**

System and the Organs of Sense. Credit, 3 hours. Second year. Professors GAGE, KERR and KINGSBURY

The course consists of three parts: (a) Gross Anatomy with special reference to medicine and surgery, Dr. KERR; (b) Histology and Development, Professor GAGE; (c) Physiology, Dr. KINGSBURY.

The instruction in each part consists of laboratory work, demonstrations or lectures and recitations. The gross anatomy, histology and development are given together during the latter part of the first term and are immediately followed by the physiology in the first part of the second term. Course 1 is required of first-year students; Course 8 of second-year students in Medicine.

(For other courses in Histology and Embryology see under the College of Arts and Sciences, p. 201.

Vertebrate Zoology, and Neurology.

BURT GREEN WILDER, B.S., M.D., Professor.
HUGH DANIEL REED, B.S., Ph.D., Instructor.
ALBERT HAZEN WRIGHT, A.B., A.M., Assistant.

3. **Neurology.** Second term. Credit, 2 hours. One lecture. Thursday at 12. One practicum, the class in two sections, Thursday, 8–10:30, and Saturday, 9–11:30. There are considered (a) the various modifications of the vertebrate brain, beginning with that of the acanth shark (*Squalus acanthias*); (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. There is given a demonstration of the methods of 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 1,500 preparations distributed as follows, in round numbers: Human adults and children, 420; human embryo, fetal and at birth, 213; apes and monkeys, 282; other mammals, 400; other vertebrates, 185. See also course 7. Professor WILDER, Mr. ———, aud Mr. SHELDON.

Course 3 should be preceded by courses 2 or 4, or by course 8 in the Medical College.

For other courses in Vertebrate Zoology and Neurology see page 198.

Physiology.

BENJAMIN FREEMAN KINGSBURY, Ph.D., M.D., Assistant Professor.
MELVIN DRESBACH, M.S., M.D., Instructor.
OMAR RAY GULLION, M.A., Instructor.
HARRY CLIFF LUKE, Ph.G. Assistant.

The work in the department is carried on by means of lectures, demonstrations, laboratory work and recitations. The laboratory course is intended to introduce the student to methods of laboratory work in physiology, to have him become acquainted with certain fundamental facts at first hand and to learn to draw conclusions from the facts. The part of Physiology so taken up in the laboratory covers the physiology of muscle, nerve, heart and circulation, blood (in part), eye and central nervous system. Special stress is laid on the points and apparatus of importance in later clinical work.

The recitations cover the entire field of physiology. Numerous demonstrations are given in the laboratory to supplement the lecture-demonstrations and student experiments.

The lectures are intended to unify the work of the department.

As occasion demands, quizzes or demonstrations may be substituted for the lectures.

The physiology of the central nervous system and organs of sense is given in the second year, after the student has had preparatory work on the anatomy and histology.

The physiology of digestion, excretion, and metabolism is likewise taken up in the second year, after the student has had the work in physiological chemistry. The last half of the work of the second year (Course 4) is taken up by a review covering the entire field of physiology preparing the student for the final and State Board examinations.

For courses open to students in the College of Arts and Sciences, see page 200.

1. **Physiology of Movement, Sensation, Circulation, and Respiration.** Credit 8 University Hours. Five three hour periods per week. The course includes laboratory work accompanied by two or more recitations or quizzes, one or more demonstrations, and one or more lectures. Required of first year students of medicine. Second half-year. Assistant Professor KINGSBURY and Assistants.

4. **The Physiology of Digestion. Absorption, Metabolism and Excretion.** Two recitations or demonstrations per week in

assigned sections. Required of second year students of medicine. Credit, two hours. Second half-year. Instructor DRESBACH.

7. **Research and Advanced Work in Physiology.** Eight or more actual hours per week. Assistant Professor KINGSBURY and Instructors.

8. **Structure, Development, and Physiology of the Nervous System and Organs of Sense.** Credit, three hours. Second year. The gross anatomy, histology, and development are given together during the latter part of the first term, and are immediately followed by the physiology in the first part of the second term. Professors GAGE, KERR and KINGSBURY.

9. **Experimental Physiology.** First term. Two or more University hours. Five or more actual hours work per week.

An arrangement of experiments in physiology intended to meet the needs of students of the Biological Sciences. Assistant Professor KINGSBURY and ———

Course 3 should be preceded or accompanied by Course 4 or 2 in Vertebrate Zoology. It may with advantage be preceded or followed by Course 2 or 3 in Histology and Embryology.

For other courses in Physiology see page 200, and for courses in Comparative Physiology see Veterinary College.

Materia Medica and Pharmacology.

BENJAMIN FREEMAN KINGSBURY, Ph.D., M.D., Assistant Professor.
OMAR RAY GULLION, A.M., Instructor.
HARRY CLIFF LUKE, Ph.G., Assistant.

The three sides of the subject of Pharmacology are presented in three separate courses, Materia Medica, Pharmacy, and Pharmacology in the narrower sense, or the Physiological Action of Drugs.

The Materia Medica, includes a study of the crude drugs, their source, nature and properties, the pharmaceutical preparations, the forms for administration and prescription-writiug. The course in Pharmacy consists of laboratory work in which the student makes pharmaceutical preparations covering the processes for the extraction of crude drugs, and the forms for administration. Although the work is pharmaceutical, the aim of the course is to have the student become familiar at first hand with the composition, chemical and physical properties of the important medicinal preparations and the emphasis is pharmacological. In the laboratory work upon the physiological action of drugs, each student determines the exact

action, as far as possible, of the most important drugs on (a) the whole animal, (b), the various organs, (e), the tissues. The more difficult experiments are assigned to groups of students who demonstrate their results to the other members of the class.

The laboratory is well fitted for research work in pharmacology, and all efforts in the direction of advanced work will be encouraged.

1. **Materia Medica.**—Two demonstrations, lectures, or recitations weekly. Second term. Assistant Professor KINGSBURY.

2. **Pharmacy.**—Laboratory work, two hours weekly. In sections. Second term. Assistant Professor KINGSBURY and Assistants.

3. **The Physiological Action of Drugs.**—Laboratory with occasional lectures or demonstrations, three hours weekly. First term. Instructor GULLION and Assistant.

4. **Research and Special Pharmacology.**—Laboratory work. This may consist of either (a) selected experiments on the action of drugs, or (b) research work along special lines. Five or more hours per week. Assistant Professor KINGSBURY and Instructor GULLION.

For courses in Comparative Pharmacology see Veterinary College.

Physics.

EDWARD LEAMINGTON NICHOLS, B.S., Ph.D., Professor.
ERNEST GEORGE MERRITT, M.E., Professor.
GEORGE SYLVANUS MOLER, A.B., B.M.E., Assistant Professor.
JOHN SANFORD SHEARER, B.S., Ph.D., Assistant Professor.
ERNEST BLAKER, B.S., Ph.D., Assistant Professor.

The instruction in physics is by means of lectures throughout each half 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 4×12 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 in physics for medical studeuts consists of four

lectures a week for one term 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, consisting of four exercises (lectures and recitations) a week throughout the year, and one afternoon in the laboratory for one term, 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.

The department offers a course in practical photography (Physics, 18; 2 hours), consisting of lectures and laboratory practice, which is open to students of medicine under the conditions stated upon page 169.

1. **Elementary Physics.** Four lectures weekly, with demonstrations, for one term. Required of first year students in Medicine. Assistant Professor SHEARER.

For other courses in Physics see page 166.

Chemistry.

LOUIS MUNROE DENNIS, Ph.B., B.S., Professor of Inorganic Chemistry.

WILLIAM RIDGELY ORNDORFF, A.B., Ph.D., Professor of Organic and Physiological Chemistry.

EMILE MONNIN CHAMOT, B.S., Ph.D., Assistant Professor of Sanitary Chemistry and Toxicology.

ARTHUR WESLEY BROWNE, M.S., Ph.D., Instructor in Chemistry.

THOMAS G. DELBRIDGE, A.B., Instructor in Chemistry.

RALPH CUTHBERT SNOWDON, A.B., Instructor in Chemistry.

FRANK HAWKINS, Assistant in Chemistry.

ARTHUR D. CAMP, A.B., Assistant in Chemistry.

JOHN ALEXANDER BLACK, Assistant in Chemistry.

MORTIMER JAY BROWN, Assistant in Chemistry.

FRED HUNTINGTON JENNINGS, A.B., Assistant in Chemistry.

MORTIMER F. MEHLING, A.B., Assistant in Chemistry.

E. E. RANDOLPH, Assistant in Chemistry,

W. J. BADER, Assistant in Chemistry.

J. W. TURRENTINE, Assistant in Chemistry.

Inorganic Chemistry.—The elements of Inorganic Chemistry are taught by lectures, laboratory work, and recitations. The lectures are profusely illustrated by experiments and lantern projection, and while presenting the fundamental concepts of chemical theory are also largely descriptive in character. Experiments illustrating the principles discussed in the text-book are performed in the laboratory by each student.

Qualitative Analysis.—The qualitative analysis begins with the study of such reactions of the commoner elements and their compounds as 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 work is accompanied by thorough drill in the writing of chemical equations.

Organic Chemistry, or the Chemistry of the Compounds of Carbon.—In this course the study of the typical compounds of carbon, their properties, reactions, and relations to one another, is taken up, especial attention being given to those organic substances that 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.

Toxicology.—This course is intended to serve as an introduction to the methods employed for the separation and identification of the common poisons, inorganic and organic. Special attention is given to the identification of poisons when present in organic matter, such as animal excretions and tissues, medicines, etc. This course also includes the identity tests for a few synthetic remedies.

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.

1. **Introductory Inorganic Chemistry.**—Three lectures, one recitation and five hours of laboratory work weekly. First half-year. Professor DENNIS and Mr. SNOWDON, Messrs. HAWKINS, BROWN and CAMP.

8. **Qualitative Analysis.**—One lecture and five hours of laboratory weekly. Second half-year 'till April 23d. Dr. BROWNE, Messrs. RANDOLPH, BADER, TURRENTINE and MUHLING.

68. **Toxicology.**—One lecture and five hours laboratory work weekly. Second half-year after Easter. Assistant Professor CHAMOT and Mr. JENNINGS.

32a. **Elementary Organic Chemistry.**—Two hours, lectures and written reviews. First half year. Professor ORNDORFF.

40. **Physiological Chemistry.**—Two hours, lectures or recitations and written reviews. Second half-year. Mr. DELBRIDGE.

41. **Physiological Chemistry.**—Seven and one-half hours laboratory work weekly. Second half-year. Mr. DELBRIDGE and Mr. BLACK.

Courses 1, 8, 68 and 32a are required in the first year and courses 40 and 41 in the second year of the medical course.

For other courses in Chemistry see page 173.

General Pathology.

VERANUS ALVA MOORE, B.S., M.D., Professor.
SAMUEL HOWARD BURNETT, A.B., M.S., D.V.M,, Instructor.
GERSHOM FRANKLIN WHITE, B.S., Ph. D., Instructor.
WINFRED BERDELL MACK, D.V.M., Assistant.
CASSIUS WAY, B.AGR., Assistant.

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.

40. **Pathology.**—Two lectures or recitations and six hours laboratory work each week. First term to Christmas vacation. Professor Moore, Instructors Burnett and White. This course is open to students who have had Course 1 in Microscopy.

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.

For other courses in Pathology see Veterinary College.

Bacteriology.

VERANUS ALVA MOORE, B.S., M.D., Professor.
SAMUEL HOWARD BURNETT, A.B., M.S., D.V.M. Instructor.
GERSHOM FRANKLIN WHITE, B.S., Ph.D., Instructor.
WINFRED BERDELL MACK, D.V.M., Assistant.
CASSIUS WAY, B.AGR., Assistant.

The instruction in Bacteriology is given by means of lectures, recitations, and laboratory work. The bacteriological laboritories 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 iu 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.

43. **Bacteriology.**—Two lectures and ten honrs' laboratory work each week. Second half-year. Required of second-year medical students. Professor Moore. Instructor White and Dr. Mack.

44. **Research in Bacteriology.**—Laboratory work with lectures and seminary throughout the year. Professor Moore and Dr. White. The course is designed for those wishing to undertake original investigation in Bacteriology preparatory to practical work in bacteriological lines, such as exists 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.

For other courses in Bacteriology see Veterinary College.

Surgery.

MARTIN BUEL TINKER, B.S., M.D., Lecturer on Surgery.

Four hours weekly, second half year, recitations, demonstrations

and occasional lectures. The course is given to small sections, and is intended to familiarize the student with the principles of general surgery and surgical pathology. Demonstrations are used whenever possible in teaching such subjects as surgical bacteriology, the histological changes in wound repair and the general principles of diagnosis and treatment of surgical diseases and injuries. Having in mind the present great importance of ability to pass examinations as well as with the aim of teaching systematic and concise arrangement and expression, frequent written exercises are given. Recitations are adopted as the principal method of instruction with the belief that for the average student information is best assimilated and retained when acquired by personal effort. Lectures are given whenever they seem likely to be helpful in supplementing other methods of instruction.

1. **Surgery.** Recitations, demonstrations or lectures. Four class exercises weekly in small sections. Dr. TINKER.

Medicine.

EUGENE BAKER, B.S., M.D., Lecturer on Medicine.

No didactic lectures are delivered, their place being taken by recitations from a standard text-book.

Recitations.—The study of medicine proper is begun with systematic recitations from *Modern Medicine*, by Salinger and Kaltiger. 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.

1. **Medicine.** Two recitations weekly. Second half year. Required of second year students in medicine. Dr. BAKER.

Obstetrics.

EUGENE BAKER, B.S., M.D., Lecturer on 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 puerperium. Whenever necessary, these recitations will be illustrated by plates, casts, and demonstrations upon the obstetric manikin, etc.

1. **Obstetrics.** Two recitations weekly. Second half-year. Required of second-year students in medicine. Dr. Baker.

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.

Schedule of Required Courses.

First Year.

FIRST TERM.

Subject.	*No. of Course.*	*Hours of Credit.*	*Actual Hours per Week.*
Anatomy	1	13	32½
Chemistry	1	6	9
Physics.	7	4	4

SECOND TERM.

Histology	1	8	15
Physiology	1	8	15
Qual. Chem. Anal.	8	2	6
Toxicology	68	1	
Organic Chemistry	32a	2	2

Second Year.

FIRST TERM.

Subject.	*No. of Course.*	*Hours of Credit.*	*Actual Hours per Week.*
Anatomy	2	9	22½
Anatomy	4	1	2½
Physiological Chemistry	40	2	2
Physiological Chemistry Lab.	41	3	7½
Pathology	40	3	8
Physiological Action of Drugs	3	1	3
Nervous System, Structure and Development	8	2	5

SECOND TERM.

Nervous System, Physiology	8	1	1
Physiology Recitations	4	2	2
Neurology	3	2	3½
Anatomy	3	2	5
Bacteriology	43	6	12
Materia Medica	1	2	6
Pharmacy	2	1	2
Medicine	9	2	2
Surgery	10	4	4
Obstetrics.	11	2	2

Junior Year.—For subjects, see pages 285 and 289, as given in New York City.

Senior Year.—For subjects, see pages 285 and 289, as given in New York City.

SUMMARY OF REQUIRED COURSES.

First Year.

1. **Anatomy.**—Laboratory work with section demonstrations and recitations, thirty-two and a half actual hours weekly. First half-year. Professor KERR, Instructor GRAY, Assistant Demonstrators HATHAWAY, JELKE, and GOEHLE.

1. **Introductory Inorganic Chemistry.**—Three lectures, one recitation, and five hours of laboratory work weekly. First half-year. Professor DENNIS and Mr. SNOWDON, Messrs. HAWKINS, BROWN and CAMP.

7. **Elementary Physics.**—Four lectures, with demonstrations, weekly, first half the year. Assistant Professor SHEARER.

1 **Microscopy. Histology and Embryology.** Second half-year. Credit 8 University hours. The instruction is given in 5 three hour periods per week. During the laboratory periods there are two recitations and one or more lecture-demonstrations each week. Laboratory work M., T., 2–5, Th., 10–1, F., 9–12, S., 8–11. Professor GAGE and Assistants.

1. **Physiology or Movement, Sensation, Circulation, and Respiration.** Credit 8 University Hours. Five three hour periods per week. The course includes laboratory work accompanied by two or more recitations or quizzes, one or more demonstrations, and one or more lectures. Second half year. Assistant Professor KINGSBURY and Assistants.

8. **Qualitative Analysis.**—One lecture and five hours of laboratory weekly. Second half-year till April 23rd. Dr. BROWNE, Messrs. RANDOLPH, BADER, TURRENTINE and MEHLING.

68. **Toxicology.**—One lecture and five hours' laboratory work weekly. Second half-year after Easter. Assistant Professor CHAMOT and Mr. JENNINGS.

32a. **Elementary Organic Chemistry.**—Two lectures weekly. First half-year. Professor ORNDOFF.

Second Year.

2. **Anatomy.**—Laboratory work with section practicums and recitations twenty two and a half actual hours weekly. First half-

year. Professor KERR, Instructor GRAY, Assistant Demonstrators HATHAWAY, JELKE, and GOEHLE.

4. **Anatomy, Thoracic, and Abdominal Viscera.**—Section demonstrations two and a half hours weekly. First half-year. Professor KERR.

40. **Physiological Chemistry.** — Two lectures or recitations weekly. First half-year. Mr. DELBRIDGE.

41. **Physiological Chemistry Laboratory.**—Seven and a half hours laboratory work weekly. First half year. Mr. DELBRIDGE and Mr. BLACK.

40. **Pathology.** Two lectures or recitations and six hours laboratory work each week. First term to Christmas vacation. Professor MOORE, and Instructors BURNETT and WHITE.

3. **The Physiological Action of Drugs.** Laboratory with occasional lectures or demonstrations; three hours weekly. Credit, one University hour. First term. W., or F., 2–5. Instructor GULLION and Assistant ———.

8. **Structure, Development, and Physiology of the Nervous System and Organs of Sense.** Credit, three hours. Second year. The gross anatomy, histology, and development are given together during the later part of the first term, and are immediately followed by the physiology in the first part of the second term. Professors GAGE, KINGSBURY and KERR.

1. **Materia Medica.** Two demonstrations, lectures, or recitations weekly. Credit, two hours. Second term. Assistant Professor KINGSBURY.

2. **Pharmacy.** Laboratory work, two hours weekly. Credit, one hour. In sections. Second term. Assistant Professor KINGSBURY and Assistants.

1. **Medicine.** Two recitations weekly. Second half-year. Dr. BAKER.

1. **Surgery.** Recitations, demonstrations, or lectures. Second half-year. Four hours in small sections, Dr. TINKER.

1. **Obstetrics.** Two recitations weekly. Second half-year. Dr. BAKER.

3. **Neurology.** One lecture and one practicum demonstration weekly. Second half-year. Lecture, Th.; Practicum, Th., 8–10:30, or S., 9–11:30. Professor WILDER.

3. **Topographical and Regional Anatomy.** Section demonstrations five hours weekly. Credit, two hours. Second half, second term. Dr. KERR and Instructors.

13. **Bacteriology.** Two lectures and ten hours' laboratory work

each week. Second half-year. Credit, six University hours. Lectures, M., T., 9; Laboratory, M., 10–1; W., 4–6; Th., 8–10; F., 2–5, or T., 2–4; Th., 2–5; F., 11–1; S., 10–1. Professor MOORE, Instructor WHITE and Dr. MACK.

4. **The Physiology of Digestion, Absorption, Metabolism and Excretion.** Two recitations or demonstrations per week in assigned sections. Credit, two hours. Second half year. Instructor DRESBACH.

Advanced Courses.

6. **Anatomy. Advanced and Research Work.** Eight or more actual hours laboratory work per week. Professor KERR and Instructors.

4. **Advanced Work in Histology or Embryology.** Laboratory work eight or more actual hours per week, with seminary throughout the year. Professor GAGE.

5. **Structure and Physiology of the Cell.** First half-year. Two lectures per week at hours to be arranged. Open to students who have had satisfactory courses in Zoology, Botany, Physiology, or Histology. Assistant Professor KINGSBURY.

7. **Research and Advanced Work in Physiology.** Eight or more actual hours per week. Assistant Professor KINGSBURY and Instructors.

9. **Experimental Physiology.** Five or more actual hours per week. An arrangement of experiments intended to meet the needs of students of natural science. Assistant Professor KINGSBURY and Instructors.

2. **Advanced and Research Work in Pharmacology.** Assistant Professor KINGSBURY and Instructor GULLION.

For courses in Comparative Physiology, Materia Medica, and Pharmacology, see Veterinary College.

For other courses in Pathology and Bacteriology, see Veterinary College.

For other courses in Neurology, see page 198.
For other courses in Physics, see page 166.
For other courses in Chemistry, see page 173.
For other courses in Histology, see page 201.
For other courses in Physiology, see page 206.

The A.B. and M.D. Degrees.

As a liberal education in the Arts and Sciences is of great advantage to students of Medicine, all who can are urged to precede their medical studies by a college course. A student who takes the academic work in the College of Arts and Sciences of Cornell University will be permitted to elect, as the Fourth Year of his A.B. Course, a year's

work in the Medical College. He may then take his fifth year of work—the second of the medical course—either in Ithaca or 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.

Recommended Course in Arts for Medical Students.

The work in the College of Arts and Sciences is all elective. The Medical Faculty, however, recommends that students who intend to take the work in the Medical College should elect the following curriculum:

FIRST YEAR—ARTS.

Subject.	*No. Course.*	*1st Term. Hours.*	*2d Term. Hours.*
English	1	3	3
*French or German	1	3	3
*Mathematics	6	3	3
Chemistry	1	6	–
Chemistry	8	–	2
Invertebrate Zoology	1	2	–
Invertebrate Zoology	3	–	3
Vertebrate Zoology	2	2	–
Comparative Anatomy	5	–	3
		19	17

In addition to the above a student must take the required physical training.

SECOND YEAR—ARTS.

English	2 or 3	3	3
*French or German	2 or 2b	3	3
Physics	2	5	5
Philosophy	1	3	3
Botany	1 and 2	3	3
		17	17

In addition to the above a student must take the required physical training.

THIRD YEAR—ARTS.

Subject.	*No. Course.*	*1st Term. Hours.*	*2d Term. Hours.*
Organic Chemistry	30	6	6
Philanthropy	55	2	2
Elementary Social Economics	41	2	2
Systematic Vertebrate Zoölogy	6	3	3
Psychology	2	3	3
Nenrology	3	–	2
		16	18

*Those students who at entrance offer one modern language should elect the other. Those who offer French and German and Mathematics should elect other subjecta in place of this work.

FOURTH YEAR—ARTS.

FIRST YEAR—MEDICINE.

Anatomy	1	13	–
Physiological Chemistry	40	2	–
Physiological Chemistry	41	3	–
Histology	1	–	8
Physiology	1	–	8
Toxicology	68		1
		18	17

Students who have taken the above course and received the A.B. degree will then take the work of the 2d, 3d, and 4th years in the Medical College.

The Secretary of the Medical College will be glad to confer with students in the College of Arts and Science, who later expect to enter the Medical College.

Optional Five-Year Medical Course.

FOR STUDENTS WHO HAVE SATISFIED THE A.B. ENTRANCE REQUIREMENTS. SEE PAGES 36 AND 86.

All who can do so are urged to take the seven-year Arts-Medical Course outlined above and thus secure the two degrees, A B. and M.D. For those who cannot afford the time for that course the Medical Faculty have provided an optional five years' Medical Course outlined below.

FIRST YEAR.

Subject.	*No. Course.*	*1st Term. Hours.*	*2d Term. Hours.*
Chemistry	1	6	–
Chemistry .	8	–	2
Chemistry, Toxicology	68	–	1
Chemistry, Organic .	32	–	2
Physics	1	4	–
Physics	10	1	1
Physics .	6	–	4
Invertebrate Zoology	1	2	–
Vertebrate Zoology	2d	2	–
Invertebrate Zoology	3	–	3
Comparative Anatomy	5	–	3
Botany	1	3	1
Psychology	1	2	–
Neurology	3	–	2
		20	19

SECOND YEAR.

Anatomy	1	13	–
Physiological Chemistry	40	2	–
Physiological Chemistry	41	3	–
Histology	1	–	8
Physiology Recitations.	2	–	3
Physiology Lectures	1	–	3
Physiology Laboratory	5	–	5
Elementary Social Economics	41	2	2
		20	17

THIRD YEAR.

Anatomy	2	9	–
Anatomy	4	1	–
Pathology	40	3	–
Physiological Action of Drugs	3	1	–
Nervous System	8	2	1
Physiology Recitations	4	–	2
Anatomy	3	–	2
Bacteriology	43	–	6
Materia Medica	1	–	2
Pharmacy	2	–	1
Medicine	1	–	2
Surgery	1	–	4
Obstetrics	1	–	2
Advanced Work	–	4	–
		20	20

Upon completing the above work the student will take the regular 3d and 4th Year's work in New York City.

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 page 243.) No student is admitted except at the beginning of the college year in September.

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 the term (September, 1905, and February, 1906), 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 College, in Stimson Hall.

SCHOLARSHIPS. (See pages 63–66.)

EXAMINATIONS.

Students are advanced in course from one year to the next upon passing examinations upon the work of that year. As in the College of Arts and Sciences, 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, the university 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 can not enter the third year class in New York until the entire schedule of the first two years has 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 a 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 one in New York, the same autumn.

MEDICAL SOCIETY.

The Cornell Medical Society is a student organization. At the meetings, 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.

TUITION AND LABORATORY FEES.

FIRST YEAR.

Matriculation	$ 5
Tuition	150
Laboratory Fees and Deposit	56

SECOND YEAR.

Tuition	$150
Laboratory Fees and Deposit	49

BOARD AND ROOMS. (See page 61.)

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.
PIERRE A. FISH,
GRANT S. HOPKINS, } of the Faculty.

CHARLES E. CORNELL, Secretary of the Council.

FACULTY.

JACOB GOULD SCHURMAN, 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, Zoötechny, and Jurisprudence.
PIERRE AUGUSTINE FISH, D.Sc., D.V.M., Professor of Veterinary Physiology, Pharmacology, and Therapeutics.
GRANT SHERMAN HOPKINS, D.Sc., D.V.M., Professor of Veterinary Anatomy and Anatomical Methods.
SAMUEL HOWARD BURNETT, M.S., D.V.M., Instructor in Comparative Pathology and Bacteriology.
GERSHOM FRANKLIN WHITE, B.S., Instructor in Bacteriology.

WINFRED BERDELL MACK, D.V.M., Assistant in Bacteriology.
CHARLES HENRY TAYLOR, D.V.M., Assistant in Clinical Surgery.
FREDERICK HENRY McNAIR, D.V.M Assistant in Veterinary Physiology and Materia Medica.
ANDREW ENGLISH, D.V.M., Assistant in Veterinary Anatomy.
FRANK W. CHAMBERLAIN, Demonstrator in Anatomy.
JOHN G. WILLS, Demonstrator in Anatomy.
CHARLES EZRA CORNELL, A.B., LL.B., Clerk of the College.
PHILENA B. FLETCHER, B.S.A., Librarian of the Roswell P. Flower Library.

HENRY HIRAM WING, M.S., Professor of Animal Husbandry.
LOUIS MONROE DENNIS, Ph.B., B.S., Professor of Inorganic Chemistry.
WILLIAM RIDGEWAY ORNDORFF, A.B., Ph.D., Professor of Organic Chemistry.
RALPH CUTHBERT SNOWDON, A.B., Instructor in Chemistry.
WILLIAM C. THRO, A.M., Instructor in Histology and Embryology.
—— —— ——, Assistant in Histology and Embryology.
EFFIE ALBERTA READ, A.B., Assistant in Histology and Embryology.
SAMUEL G. WINTERS, A.B., A.M., Assistant in Histology and Embryology.
—— —— ——. Assistant in Histology and Embryology.
RESTON STEPHENSON, A.M., A.B., Assistant in Chemistry.
CHARLES LYMAN RAND, Assistant in Chemistry.

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 (5,926,663) and their value ($126,533,456) 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 pestilence 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 toward 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 dilligent student.

BUILDINGS.

The buildings of the State Veterinary College are eight 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 laboratories of physiology and pharmacology, a lecture room, reading room, library, and rooms for professors. The third floor is devoted to laboratories of 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.

The Kennel, 36 by 20 feet, is a building devoted to the clinics for dogs and cats. It has a hot water plant of its own and is well pro-

vided with commodious cages and the ventilation is well arranged. The floor is of cement and provided with drains connecting with the sewer, insuring cleanliness with the minimum of effort.

The Shed and Forge Room, 36 by 20 feet, next the kennel, 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 1905–1906 begins Tuesday, September 26, 1905, and closes Thursday, June 21, 1906, 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 Cæsar. 8. Vergil, Cicero and Latin Composition. 9. Entrance Greek. 10. An amount of any group of the following, making the equivalent of four years of high school work: Physics, Botany, Geology, Vertebrate Zoology, Invertebrate Zoology, Advanced French, Advanced German, or other high school subject.

For details as to subjects and methods of admission, see pp. 33—58.

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 pre-

sent the necessary educational qualifications for admission to the first year class (see p. 324), 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 such 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 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 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. One prize of $15 to the first in merit; to the second in merit, a prize of $10.

THE COURSE LEADING TO THE DEGREE OF DOCTOR OF VETERINARY MEDICINE.

First Year.	No. Course.	1st Term.	2d Term.
Inorganic Chemistry	1	6	–
Microscopy, Histology and Embryology	1	–	6
Anatomy	10	8	5
Comparative Physiology Recitations	20	2	–
" " Lectures	21	–	3
" " Laboratory	22	–	2
Animal Husbandry	36	3	–

Second Year.	No. Course.	1st Term.	2d Term.
Anatomy	11	10	–
Comparative Physiology Recitations	20a	–	1
Pharmacology	25	2	–
Materia Medica and Pharmacy	26	2	–
General Surgery	30	1⅓	–
Surgical Exercises	31	⅔	–
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

Third Year.	No. Course.	1st Term.	2d Term.
Urine Analysis	23	2	–
Diagnosis and Therapeutics	27	2	–
Materia Medica Recitations	28	–	2
Surgical Exercises	31	⅔	–
Surgery (Head, etc.)	32	2	–
Surgery, (Limbs, etc.)	33	–	4
Jurisprudence	35	⅓	–
Medical and Surgical Clinics	34–53	6	6
Special Pathology	41	2	–
Infectious Diseases and Meat Inspection	42	–	2
Medicine	50	3	3
Parasitism or Sanitary Science	52 or 51	2	2
Research and Thesis	—	3	3

Microscopy, Histology and Embryology.

1. **Microscopy, Histology and Embryology.** Second half-year. Credit, 6 University hours. The exercises each week are as follows: Laboratory work M. and W., 9–12; Th., F., 2–5. Recitations, Th. and Si, at 8. Professor GAGE, Instructor THRO and Assistants READ, WINTER 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 with the second term and continues two weeks.

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. This work continues seven weeks.

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 instruction in Embryology continues seven weeks.

For the advanced courses see pp. 193–194. The advanced courses are open to Veterinary as to other properly qualified students.

Anatomy.

10. **Comparative Osteology.** Three hours. First term. Two lectures, T., Th., 9. From September to February there will be five periods of laboratory work. M., T., Th., F., P. M.; S., 10:30–1. From February to June there will be three periods, M., T., P.M.; S., A.M. Professor HOPKINS and Demonstrators.

11. **Arthrology and Myology.** Five hours. First term. This course immediately follows course 10. Lectures and laboratory work the same as in course 10. Professor HOPKINS and Demonstrators.

12. **Myology, Thoracic and Abdominal Viscera.** Five hours. Second term. Lectures, T., Th., 9. One weekly recitation. Laboratory work, M., T., P.M.; S., A.M. Professor HOPKINS and Demonstrators.

13. **The Vascular System.** Four hours. First term. Lecture, F., 9. One weekly recitation. Laboratory work, 20 hours, or more, per week. M., T., Th., F., P. M.; S., A. M. Professor HOPKINS and Demonstrators.

14. **The Nervous System and Organs of Special Sense.** Six hours. First term. Lecture, recitation and laboratory work the same as in course 13. Professor HOPKINS and Demonstrators.

15. **Research and Thesis or Special Regional Anatomy.** Seven and one-half hours weekly throughout the year. Professor HOPKINS.

Comparative Physiology.

20. **Physiology Recitations.** Two hours weekly. First term. Two sections. Section I, M., 10, T., 10. Section II, T., 11, W., 10. Professor FISH and Assistant MCNAIR.

20a. **Physiology Recitations.** One hour weekly. Second term. Two sections, S., 10, 11. Professor FISH and Assistant MCNAIR.

21. **Physiology Lectures.** Three hours weekly. Second Term. T., Th., F., 10. Professor 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 large 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 whenever possible. Certain experiments requiring special apparatus and care are performed by the instructors as demonstrators, students assisting when possible. Five hours each week. Second term. Sec. I, T., 11-1; W., 2-5. Section II, Th., 11-1; F., 8-10 11-12. Professor FISH and Assistant MCNAIR.

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." Five hours weekly. First term. W., 10-1, S., 11-1. September to December. Professor FISH and Assistant MCNAIR.

24. **Research and Thesis.** Seven and one-half hours per week throughout the year. This course includes advanced work, independent of the thesis, and reports of progress are given at the department seminary every fortnight. Professor FISH and Assistant MCNAIR.

Pharmacology.

25. **Pharmacology.** A study of the actions and uses of the various drugs and their preparation. 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. Professor 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. Sec. I, W., 2–5, Th., 11–1. Sec. II, M., 10–1, T., 10–1. Professor FISH and Assistant MCNAIR.

27. **Clinical Diagnosis and Therapeutics.** Two recitations per week in Diagnosis for the first half of the first term. S., M., 10. Professor FISH. The recitations will be supplemented by practical experience in the medical clinics.

Therapeutics. The treatment and cure of disease. This subject, standing along with pathology, unites physiology, anatomy, chemistry and botany with medicine and surgery. It is therefore necessary 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. Two lectures each week. Second half of the first term. S. and M., 10. Professor FISH.

28. **Recitations in Materia Medica.** Second term. M., W., 10. Professor FISH.

29. **Research and Thesis.** Seven and one-half hours weekly throughout the year. This course includes advanced work indepeudene of the thesis and reports of progress are given at the department seminary every fortnight. Professor FISH and Assistant MCNAIR.

Surgery.

30. **General Surgery.** Two lectures per week, September 25 to December 23, W., 9, F., 11. Professor W. L. WILLIAMS.

For admission to this course, students must have passed courses 10, 11 and 12 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 25 to December 23. (2d year, Sec. I), W., 10 to 1. (2d year, Sec. II), Jan., W., 10–1; Feb.–Mar., T., 10–1. (3d year), T., 10–1, Th., 9–12. Professor W. L. WILLIAMS and Dr. TAYLOR.

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. The course will be given to second and third year students in 1905 and 1906. See course 36 with which it alternates.

34. **Surgical Clinics.** Twelve actual hours or more per week throughout the year. M., T., W., Th., F., Sat., 2–4 P. M. Professor W. L. WILLIAMS and Dr. TAYLOR.

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 or 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 1906–7.

37. **Research and Thesis.** Seven and one-half hours weekly throughout the year. Professor W. L. WILLIAMS and Dr. TAYLOR.

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. Lab. M. and T., 10–1. Professor MOORE and Instructor BURNETT.

41. **Special Pathology.** First term. Open to students who have taken course 40. One lecture and one laboratory period each week. Lecture W., 9. Laboratory work F., Sec. I, 9–11, Sec. II, 11–1. Professor MOORE and Instructor BURNETT.

42. **Pathology of Infectious Diseases and Meat Inspection.** Second Term. Open to students who have taken Course 40 and 41 and have taken or are taking Course 43. Two hours. Lectures W. and F., 9. Professor MOORE.

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. Lab. work T., W., F. and S. Professor MOORE, Instructor WHITE and Assistant MACK.

44. **Advanced Bacteriology.** Laboratory work throughout the year. Professor MOORE and Instructor WHITE.

The 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. **Advanced Pathology.** Laboratory work throughout the year. 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. Professor MOORE and Instructor BURNETT.

46. **Clinical Examination of the Blood.** Second term. Lectures and Laboratory work. Two hours. Open to students who have taken Course 40. Instructor BURNETT.

47. **Research in Bacteriology and Pathology.** This course consists in Laboratory work. It is open to students who have taken Courses 40, 43, and 44 or 45. Professor MOORE and Instructors BURNETT and WHITE.

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 1906–1907. See course 52.]

52. **Parasites and Parasitisms.** 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 1905–1906.

53. **Clinical Veterinary Medicine.** Twelve actual hours or more per week throughout the year. M., T., W., Th., F., S., 2–4 P.M. Professors LAW and 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. Professor LAW.

COLLEGE OF AGRICULTURE.

THE AGRICULTURAL COLLEGE AND EXPERIMENT STATION COUNCIL.

JACOB GOULD SCHURMAN, President of the University.
FRANKLIN C. CORNELL, Trustee of the University.
LIBERTY H. BAILEY, Director of the College.
EMMONS L. WILLIAMS, Treasurer of the University.
JOHN H. COMSTOCK, Professor of Entomology.
THOMAS F. HUNT, Professor of Agronomy.

FACULTY.

JACOB GOULD SCHURMAN, A.M., D.Sc., LL.D., President of the University.

LIBERTY HYDE BAILEY, M.S., Director of the College of Agriculture, Dean of the Faculty, and Professor of Rural Economy.

GEORGE CHAPMAN CALDWELL, B.S., Ph.D., Professor of Chemistry, Emeritus.

ISAAC PHILLIPS ROBERTS, M.Agr., Professor of Agriculture, Emeritus.

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

HENRY HIRAM WING, M.S. in Agr., Professor of Animal Husbandry.

JOHN CRAIG, M.S. in Agr. Professor of Horticulture.

THOMAS FORSYTH HUNT, M.S., D.Agr., Professor of Agronomy and Manager of the University Farms.

RAYMOND ALLEN PEARSON, M.S. in Agr., Professor of Dairy Industry.

MARK VERNON SLINGERLAND, B.S. in Agr., Assistant Professor of Economic Entomology.

GEORGE WALTER CAVANAUGH, B.S., Assistant Professor of Chemistry in its Relations with Agriculture.

JOHN LEMUEL STONE, B.Agr., Assistant Professor of Agronomy.

JAMES EDWARD RICE, B.S. in Agr., Assistant Professor of Poultry Husbandry.

GEORGE NIEMAN LAUMAN, B.S.A., Assistant Professor of Rural Economy and Secretary to the Faculty of the College of Agriculture.

ELMER O FIPPIN, B.S. in Agr., Assistant Professor of Soil Investigation (detailed from Bureau of Soils, United States Department of Agriculture).

ALEXANDER DYER MACGILLIVRAY, Ph.D., Instructor in Entomology.

WILLIAM ALBERT RILEY, Ph.D., Instructor in Entomology.

JOHN WASHINGTON GILMORE, M.S.A., Instructor in Agronomy and Superintendent of the Farms.

CHARLES SCOON WILSON, A.B., M.S.A., Instructor in Horticulture.

Other Officers of Instruction and Administration.

HUGH CHARLES TROY, B.S. in Agr., Assistant in Dairy Laboratory.

WALTER WAGER HALL, Assistant in Cheese-Making.

WEBSTER EVERETT GRIFFITH, Assistant in Butter-Making.

JOHN WALTON SPENCER, Supervisor in Extension Department.

ANNA BOTSFORD COMSTOCK, B.S., Lecturer in Nature-Study.

ALICE GERTRUDE McCLOSKEY, Assistant Supervisor in Extension Department.

MARTHA VAN RENSSELAER, Supervisor Farmers' Wives' Reading Course.

HERBERT HICE WHETZEL, A.B., Assistant in Plant Pathology in the Extension Department.

SAMUEL FRASER, M.S.A., Assistant Agronomist in the Experiment Station.

JAMES ADRIAN BIZZELL, Ph.D., Assistant Chemist to the Experiment Station.

MERRITT HARPER, M.S., Assistant in Animal Husbandry.

GEORGE WHEELER HOSFORD, M.S.A., Supervisor Farmers' Reading Course.

WILLIAM CHARLES DEVEREAUX, Lecturer in Meteorology (detailed by Weather Bureau, United States Department of Agriculture).

WARREN H MANNING, Lecturer in Outdoor Art.

BRYANT FLEMING, B.S.A., Lecturer in Outdoor Art.

HARVEY L AYRES, Creameryman.

CHARLES FREDERICK SHAW, Student Assistant in Soils.

GEORGE WALTER TAILBY, Farm Foreman.

CHARLES EDWARD HUNN, Gardener.

CLARENCE AUGUSTINE MARTIN, Professor of Architecture (giving instruction in Farm Home Course).

HENRY NEELY OGDEN, C.E., Assistant Professor of Civil Engineering (giving instruction in Farm Home Course).

Other officers of instruction in the several faculties of the University give instruction in the fundamental branches preparatory to the agricultural course.

The College of Agriculture is founded on the Land Grant Act of 1862, whereby Congress appropriated the proceeds of the sales of certain lands to the maintenance of a college in each State to give instruction in agriculture and the mechanic arts. This grant marks an epoch in the history of education, because it provides for a system of education that shall have direct and definite relations with the daily work of persons who must earn their own living in the arts and industries. The College of Agriculture, therefore, seeks to interest the farm boy and the farm girl in the very things with which they live day by day,—the soil, the weather, the plant, the animal, the farm home, the school, and all the customary rural affairs. It seeks both to give them power to make the most of the farm, and to inspire contentment with the daily life. The aim of the College, in other words, is to elevate the ideals of country living. This it attempts to do in three general ways: by giving instruction to those who come to the University for two years or more; by giving instruction by means of correspondence and other extension methods to those persons, young or old, who cannot come to the University or who can come but for a very limited time; by experimenting for the discovery of new truth in agricultural fields.

The College is provided with land, stock, orchards, gardens, libraries, and other equipments. The farm comprises nearly 275 acres. The buildings comprise a dairy, two barns, poultry quarters and forcing-houses. There are herds of cattle, sheep and swine, flocks of poultry, various farm horses. In the horticultural department is a good collection of fruit trees in orchards, and many kinds of specimen plants. Farm machinery and implements are also represented. The library facilities are ample.

Students entering the College of Agriculture are on the same footing as students in any other college or department. They become a part of the general student body. They are under the special supervision of the Director of the College. Two special societies or clubs are organized and maintained by the students in the College of Agriculture—the Agricultural Association meeting every Tuesday night, and the Horticulturists' Lazy Club, meeting every Monday night. In addition to these the Winter-course students maintain an organization of their own. Recently there has been organized an "Agricultural Experimenters' League," to which all students are eligible, and which is designed for the furthering of experimental investigation and of arousing closer friendship amongst the farmers of the State.

Tuition is free in the College of Agriculture.

Some of the details of the permanent equipment are as follows:

1. *Agronomy and Animal Husbandry.*—A four-story barn provides for housing 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 piggery and tool house. Not far from the main barn have been constructed several buildings, with suitable yards and appliances for incubating eggs and rearing domestic fowls, and also a comfortable heated building in which the judging of stock is done. There are also buildings on the remoter parts of the farm. The College also has a good equipment of apparatus for soil physics work.

The agricultural rooms are provided with a collection of grains and grasses, implements of horse and hand culture, and various appliances for carrying on instruction and conducting investigation.

2. *Dairy Industry.*—The dairy building, a two story stone structure 45 x 90 feet, was built and equipped from an appropriation of $50,000 by the Legislature of 1893. It contains lecture rooms, laboratories, and offices, besides two large rooms for butter and cheese making. both of which are equipped with modern machinery and appliances. Automatic electrical apparatus controls the temperature in the cheese, curing rooms. Refrigerator room, lockers and bath rooms are also provided. The whole building is thoroughly heated and ventilated. Power is furnished by a sixty horse power boiler and a twenty-five horse-power Westinghouse engine.

3. *Horticultural Department.*—The equipment comprises land variously planted, forcing-houses and a barn.

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. The fruits comprise varieties of grapes, apples, plums, and other kinds. A dwarf pear orchard of 300 trees, and other orchards, comprise the remainder of the field space, excepting such as is set aside for vegetable gardening and floriculture.

The forcing houses are six in number and cover nearly 6,000 square feet of ground. These, in connection with store-rooms and pits, afford opportunities for nursery practice, for the study of the forcing 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 greenhouse operations. There is also a mushroom house 14 x 80 feet and a reading room for horticultural students.

The museum comprises two main features—the garden herbarium and the collection of photographs. The herbarium, containing at present over 12,000 sheets, is designed to comprise varieties of all cultivated species of plants, and it is an indispensable aid to the study of garden botany and variation of plants. The collection of photographs comprises over 7,000 negatives with prints representing fruits, flowers, vegetables, illustrative landscapes, glass houses, and horticultural operations. A collection of machinery and devices for the spraying of plants is at the disposal of students. Charts and specimens in considerable variety complete the museum and collection.

4. *Entomological Department.*—The entomological cabinet contains, in addition to many exotic insects, specimens of a large part 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.

5. *Chemical Department.*—This Department is housed in two three-story brick buildings about 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 several hundred students in General and Agricultural Chemistry.

6. The general University Library has on its shelves a representative collection of books in all fields agricultural and is particularly rich in complete files of agricultural journals, both domestic and foreign. Small reference libraries are maintained at the Forcing-houses and at the Dairy Building. The bulletins and reports of all the Experiment Stations in the United States and Canada and those of the United States Department of Agriculture are available in Morrill Hall. The exchange list of the College includes the principal agricultural periodicals published in this country.

By act of the Legislature, approved by the Governor, May 9, 1904, an appropriation was made of $250,000 for the erecting and equipping of buildings for the College of Agriculture. The act also establishes the College as "The New York State College of Agriculture at Cornell University." The buildings contemplated in the act are now un-

der construction. The plan for the reorganization of the College is not ready for announcement.

The regular instruction of the College of Agriculture is comprised in a four year course leading to the degree of Bachelor of the Science of Agriculture. Aside from this there are special two year courses and short winter courses, the latter not leading to credits in the University. A special circular describing the winter courses may be had on application. Students may also pursue agricultural subjects in the Graduate Department of the University, leading to the degree M.S. in Agr. and Ph.D.

Aside from the regular instructional work, outlined in these pages, the College of Agriculture also comprises an Experiment Station, maintained by funds derived from the federal government and an Extension Department maintained by the State. The Extension Department comprises the nature-study work, farmers' and farmers wives' reading courses, winter courses, coöperative experiments about the State, and other enterprises. Correspondence with reference to any of these activities is invited.

Admission to four year course.

Candidates for admission to the regular or four year course must be at least sixteen years of age, or, if women, seventeen. 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. Students are admitted on examination, or on presenting credentials of the Regents of the University of the State of New York, or on acceptable school certificates.

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

The subjects that may be offered for admission are named in the following lists :

Elementary Subjects.

The following Elementary Subjects are required for admission to all colleges of the University except the Veterinary College :

English.	Plane Geometry.
History.*	Elementary Algebra.

* One of the following: (1) American (including Civil Government), (2) English, (3) Ancient (to 814 A.D.), (4) Mediæval and Modern European (from 814 A.D.).

Advanced Subjects.

In addition to the Elementary Subjects, an applicant must offer from the following list the Advanced Subjects required by the college to which he seeks admission. The figure following each subject indicates its relative weight :

Advanced Mathematics (6).
  Solid Geometry (2)
  Advanced Algebra (2).
  Plane Trigonometry (2).
  Spher. Trigonometry
German (12).
  Elementary German (6).
  Advanced German (6).
French (12).
  Elementary French (6).
  Advanced French (6).
Spanish (12).
  Elementary Spanish (6).
  Advanced Spanish (6).
Latin (18).
  Latin Grammar and Caesar (6).
  Latin Composition and Cicero (6).
  Virgil (6).
Greek (12).
  Greek Grammar, Xenophon (6).
  Greek Composition, Homer (6).
Physics (6).
Chemistry (6).
Botany (6).
Geology (6).
Zoology (6).
Drawing (6).

For admission to the College of Agriculture an applicant must offer the Elementary Subjects and also 30 units from the list of Advanced Subjects, including 12 units either in French or in German.

For details as to subjects and methods of admission, see pages 33–57.

For admission to the Freshman class and to advanced standing from other colleges and universities, all communications should be addressed to the Registrar. *See pages 33–57.*

For admission as special student communications should be addressed to the Director of the College of Agriculture and attention is called to the paragraphs under II below.

For admission to graduate work and candidacy for advanced degrees, communications should be addressed to the Dean of the University Faculty. *See page 73.*

II. SPECIAL COURSES (TWO YEARS).

Two Special Courses have been arranged. Students must be at least eighteen years of age to enter these Special Courses and applications will be received until September 15, 1906. They are admitted by the Director of the College of Agriculture.

1. *The General Agriculture Special Course.*—This course is designed to meet the needs of young men and young women from the

farm who have not the time to give to a four years' course It is not a definite "course" in the sense of having a prescribed set of studies. The student chooses any of the agricultural "electives" that he may be able to pursue.

2. *Nature-Study Special Course.*—This course is open to teachers, or to such students in the University as signify their intention to teach, who desire to prepare themselves in nature-study and country-life subjects. In this course the work is largely prescribed. The course comprises two categories of work: the subject-matter studies, and the pedagogical practice. The subject-matter is to be secured in the regular classes of the University, largely in the biological departments. The pedagogical practice is to be had with children in regular nature-study classes and clubs in the public schools of Ithaca and in school-garden work with children.

III. EXTENSION WORK.

The extension work of the College of Agriculture is designed to help persons directly on their farms, and to aid those who desire definite instruction but cannot take a long or regular course in agriculture in the University. It supplements the teaching and experimenting of the College of Agriculture. It is maintained by funds appropriated by the State. It is professedly a popular work. It endeavors to reach the common problems of the people, to quicken the agricultural occupations, and to inspire a greater interest in country life. It is also a bureau of publicity, whereby there is an exchange of all important matters connected with the progress of the agriculture of the State. This extension enterprise is conducted under the general supervision of the State Commissioner of Agriculture.

The Extension department comprises many efforts, viz.:

(a) Experimenting and testing about the State and at Ithaca, for the purpose, primarily, of aiding the farmer in handling his own problems.

(b) The Farmers' and the Farmers' Wives' Reading-Courses.

(c) The Nature-Study work, comprising the junior gardeners, junior naturalists, work in connection with county and local fairs, improvement of school premises, home nature-study course, lectures and demonstrations in schools and at teachers' meetings.

(d) Coöperation with schools in introducing agricultural and country life topics.

(e) Winter-courses of eleven weeks at Cornell University in General Agriculture, Poultry Husbandry, Dairy Industry and Horticulture.

Several reports of the Extension work have been published as bulletins. These may be had on application until the supply is exhausted. Applications to join any of these extension enterprises may be made to the Director of the College of Agriculture.

IV. AGRICULTURAL EXPERIMENT STATION.

The Agricultural Experiment Station of Cornell University is a Department of the College of Agriculture. Incidentally, students may acquire instruction from observing and discussing the experiments which are being conducted. The federal law passed March 2, 1887, briefly outlines the objects of the experiment stations in the following words: "To aid in acquiring and diffusing among the people of the United States useful and practical information on 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 station 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 and 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 investigations. The Cornell University Agricultural Experiment Station was first organized in 1879. It was reorganized in 1888, after the passage of the federal law.

The publications of the Agricultural Experiment Station include to date sixteen annual reports and two hundred and twenty bulletins. These publications are distributed free to such residents of the State as apply for them so far as the means of the station will permit.

State Grange Scholarships in Agriculture. At its 31st annual meeting, held at Cortland, February 4, 1904, the New York State Grange resolved to "appropriate annually $200 to be given to members of the Order in the form of four scholarships to any of the agricultural courses in Cornell University." The scholarships are each of a value of $50, to be awarded to two men and two women who attain the highest standing on competitive examination. For 1905–6 there are six scholarships, the examinations for which were held in May. The candidate should apply to the Master of the Pomona Grange in his home county, or to the Deputy in counties that have no Pomona.

There is a limited amount of work on the farms, that will be given to students that apply for it. Those desiring work should write early to Professor T. F. Hunt, who will furnish application blanks.

Expenses.

Tuition is free to regular and special students in the College of Agriculture.

Fees are as follows:

Matriculation	5 00
Degrees.	
Baccalaureate,	$10 00
Advanced	20 00
Incidentals.	
Post-graduates, each term	$ 7 50
Regular students, 3d and 4th years, each term	7 50
Specials, each term	7 50

Other deposit fees are required in various laboratory courses.

The expense of text-books, instruments, etc., varies from $10 to $75 per annum.

The cost of living in Ithaca, including board, room, fuel and lights, varies from $3.50 to $6 per week.

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.

COURSES OF INSTRUCTION.

The Regular Four-Year Course in Agriculture Leading to the Degree of Bachelor of the Science of Agriculture.

The work is prescribed and elective. The prescribed work is as follows:

Freshman Year.	No. Course.	Hours 1st Half-Year.	Hours 2d Half-Year.
English	1	3	3
Drawing	12c	2	2
Botany	1	3	1
Botany	2	–	2
Geology	2	3	3
Invertebrate Zoology	1	2	–
Vertebrate Zoology	2	2	–
Entomology	3	–	3

In addition to the above the required military drill must be taken.

Sophomore Year,	No. Course.	Hours 1st Half-Year.	Hours 2d Half-Year.
Physics*	1	–	4
Chemistry	1, 81	6	6
Physiology of Domestic Animals or	21	–	3
Elementary Human Physiology	3	3	–
Soils.	1	3	–

In addition to the above the required physical training must be taken.

Junior Year.	No. Course.	Hours 1st Half-Year.	Hours 2d Half-Year.
Political Science	51	3	3
Agronomy	11, 12	4	4

For the outline of the six-year course leading to the degrees of Bachelor of the Science of Agriculture and Doctor of Veterinary Medicine, see p. 26.

The elective work may be chosen from the courses described on the following pages. At least one-half of the entire elective work of each year must be chosen from these agricultural subjects.

Special students (admitted without examination, by the Director of the College of Agriculture) follow no prescribed course; but at least two-thirds of all their work must be in the agricultural subjects described on the following pages. They are obliged to follow the same regulations as the regular students in not entering any particular work until they have satisfied all previous requirements for that work.

Courses in Other Colleges Allowed as Agricultural Electives.

Botany, 6 (Exotics); New York State Veterinary College, 51 and 52 (Contagious Diseases, Parasites and Parasitism).

*For the year 1905-6 students in the College of Agriculture will have Physics as a four-hour study during the second half-year.

Thesis.

The student may elect a thesis with the heads of any of the departments in the College of Agriculture. The thesis work must continue for at least one year. It counts a credit of two hours for each half-year.

A. Entomology and General Invertebrate Zoology.

1. **Invertebrate Zoology.** General course. Required of freshmen. First half of the first half year. Credit, 2 hours. Lectures, M., W., F., 10, *White 12*. Professor COMSTOCK. One practical exercise by the class in sections. 1st section, W., 2–4:30; 2d section, F., 2–4:30, *White 20*. Dr. MACGILLIVRAY, Dr. RILEY, and Mr. HEADLEE.

This course is followed by course 2 in Vertebrate Zoology, which occupies the corresponding hours in the last half of the first half year.

2. **Morphology of Invertebrates.** Special laboratory course. T., 8–5, Th., 8–1, *White 20*. Dr. MACGILLIVRAY.

3. **General Entomology.** Lectures on the characteristics of the orders, sub-orders, and the more important families and on the habits of representative species. Open only to students who have taken course 1. Required of freshmen. Second half year. Credit, 2 hours or 3 hours. Lectures, M., W., 10, *White 12*. Professor COMSTOCK; and one practical exercise in sections for those who have not had courses 4 and 5, W., F., 2–4:30, *White 20*. Dr. MACGILLIVRAY, Dr. RILEY and Mr. HEADLEE.

4. **Elementary Morphology of Insects.** Laboratory work. First half year. Credit, 3 hours. M., T., 8–5, W., Th., F., 8–1, *White 20*. Dr. MACGILLIVRAY, and Dr. RILEY.

5. **Elementary Systematic Entomology.** Laboratory work. Must be preceded by course 4 and accompanied by course 3. Credit, 2 hours. M., T., 8–5, W., Th., F., 8–1, *White 20*. Dr. MACGILLIVRAY and Dr. RILEY.

6. **Advanced Systematic Entomology.** Laboratory work. Credit, 3 hours. T,, 8–5, Th., 8–1, *White 20*. Dr. MACGILLIVRAY.

7. **Histology of Insects.** Laboratory work. Introductory course. Must be preceded by courses 4 aud 5. M., 8–5, W., F., 8–1, *White 12*. Dr. RILEY.

8. **Economic Entomology.** Lectures and field work. Discussion of the more important insect pests and of the methods of combatting them. At opportune times the class will be taken into the field in sections to observe insect pests at work. Second half year. Credit, 2 hours. T., Th., 10, *White 12*. Assistant Professor SLINGERLAND.

9. **Advanced Economic Entomology.** Lectures, seminary and field work. Economic problems connected with applied entomology discussed, reported upon, and field observations made. Experimental methods in breeding, photographing, investigating, and combatting insects discussed and studied. Designed for advanced students who desire to fit themselves for Experiment Station work. The course is open only to students who have taken courses 1, 3, 4, 5 and 8. Second half year. Credit, 1 hour. One afternoon a week by appointment. *Insectary.* Assistant Professor SLINGERLAND.

10. **Classification of the Coccidæ.** A course designed to familiarize the student with the more injurious species of scale insects, the method of preparing specimens for study, and the systematic arrangement of the species. Lectures and laboratory work. Must be preceded by courses 4 and 5. Second half year. Credit, 2 hours. T., 11-1, 2-5, *White 20.* Dr. MACGILLIVRAY.

11. **Morphology and Classification of the Arachnida.** Special laboratory course. M., T., 8-5, W., Th., F., 8-1, *White 20.* Professor COMSTOCK, Dr. MACGILLIVRAY and Dr. RILEY.

12. **Morphology and Development of Insects.** Lectures and demonstrations. Must be preceded by courses 1, 3, 4 and 5. Students are advised to take course 7, also, before taking this course. Second half year. Credit, 2 hours. T., Th., 9, *White 12.* Professor COMSTOCK and Dr. RILEY.

13. **Research in Entomology.** Advanced laboratory course. Special work arranged with reference to the needs and attainments of each student. M., T., 8-5, W., Th., F., 8-1, *White 20.* Professor COMSTOCK, Dr. MACGILLIVRAY and Dr. RILEY.

14. **Seminary.** The work of an entomological seminary is carried on by the Jugatæ, an entomological club which meets for the discussion of current literature and of the results of investigations. Attendance at the meetings may be counted as laboratory work. M., 4-5, *White 12.*

B. Agricultural Chemistry.

81. **Agricultural Chemistry.** General Course. Treats of the fertility of the land and deals with such subjects as the composition of plants, the sources of their food, the chemical and physical properties of soils and the composition and behavior of fertilizers and manures. Must be preceded by Chemistry Course 1. Required of Sophomores. Second half-year. Credit, 6 hours. Lectures, M., W., F., 11, *Morse Hall Lecture Room No. 4.* Two laboratory periods. T., Th., 2-4:30, *Morse Hall* and one recitation, F., 8, *Morse Hall.* Assistant Professor CAVANAUGH.

82. **Agricultural Chemistry.** Advanced course. First half-year. Credit, two hours. Lectures, W., F., 10, *Morse Hall Lecture Room No. 2.* Assistant Professor CAVANAUGH.

83. **Agricultural Analysis.** Laboratory practice. Foods and feeding stuffs, and dairy products. Must be preceded by Chemistry courses 1 and 6. First half-year. *Morse Hall.* Assistant Professor CAVANAUGH.

84. **Agricultural Analysis.** Laboratory practice, Soils, fertilizers, insecticides and fungicides. Must be preceded by Chemistry courses 1 and 6. Second half-year. *Morse Hall.* Assistant Professor CAVANAUGH.

85. **Dairy Chemistry.** Must be preceded by Chemistry 1 and 81. First half-year. Credit, two hours. Lectures, T., Th., 8, *Morse Hall Lecture Room No. 4.* Laboratory practice in Dairy Chemistry is given in course 83. Assistant Professor CAVANAUGH.

89. **Advanced Agricultural Analysis.** This course is designed to meet the needs of those doing research work in agricultural chemistry. *Morse Hall.* Assistant Professor CAVANAUGH.

C. Soils.

1. **Agricultural Soils.** An elementary course covering the origin, formation, classification and function of soils, with particular reference to their management in plant production. Required of Sophomores. First half-year. Credit, three hours. Lectures, T., Th., 9, *Morse Hall Lecture Room No. 2.* One laboratory hour, which will include field excursions for the inspection of soils in the vicinity of Ithaca, N. Y. M., F., 2–4:30, S., 9–12:30, *Morse Hall 24.* Assistant Professor FIPPIN.

2. **Soils of United States.** An introductory study of the chief soil provinces, soil series and soil areas of the United States, with special reference to the soils of New York State, particular attention being given to the adaptation of crops to soils. Second half-year. Credit, 2 hours. Lectures, M., W., 9, *Morse Hall Lecture Room No. 2.* Assistant Professor FIPPIN.

3. **Soil Mapping.** The preparation of a large scale map of a portion of the University farm. A plane table survey of the plats will be prepared as a base map upon which to map the different soils. In addition a small area will be mapped on a scale of 1 in. = 1 mi. by the Bureau of Soils Methods. Must be preceded by conrse 1. Second half-year after Easter recess. Credit, 1 hour, by appointment at least 30 hours actual field work will be required. *Morse Hall 24.* Assistant Professor FIPPIN.

4. **Advanced Soils.** A consideration of the latest research in soil physics and chemistry, including methods of mechanical analysis, relation of moisture to the solid part of the soil and its amount, the soil solution, the soil atmosphere, the heat of the soil, minute biology of the soil and plant nutrition from the standpoint of the agencies of the soil. Supplemental to the research work of course 5. Must be preceded by course 1. Second half-year nntil Easter recess. Credit, 1 hour. F., 9, *Morse Hall Lecture Room No. 2.* Assistant Professor FIPPIN.

5. **Research Work in Field and Laboratory Investigation of Soil.** Study of special problems by advanced students as basis for thesis work. Must be preceded or accompanied by course 4, and accompanied by Agronomy 15. Credit, 2 hours. *Morse Hall 24.* Assistant Professor FIPPIN.

D. Agronomy

11. **Field Crops.** Lectures and recitations on the history, production, cultivation and marketing of farm crops. Practice with growing and dried specimens, including cereals, grasses, clovers and other forage crops. Must be preceded by Chemistry 1 and Soils 1. Required of Juniors. First half-year. Credit, 4 hours. Lectures, M., W., F., 9, *Morrill 19.* Practice one afternoon per week. Th., 2–4:30, *Morrill 20.* Professor HUNT.

12. **Farm Management.** Lectures and recitations on present agricultural methods in various countries, cost and relative profit of various farm operations and systems. Must be preceded by course 11. Required of Juniors. Second half-year. Credit, 4 hours. Lectures, M., W., F., 9, *Morrilt 19.* Practice one afternoon per week, Th., 2–4:30, *Morrill 20.* Professor HUNT.

13. **Advanced Agronomy.** Laboratory and research work upon the best methods of crop production, including a detailed study of experimental results with one or more field crops, supplemented with lectures and recitations. Must be preceded by course 11 and must be accompanied by course 15. First half-year. Credit, 2 hours. Practice two afternoons per week. M., F., 2–4:30, *Morrill 20.* Professor HUNT.

14. **Advanced Agronomy.** Laboratory and research work upon the best methods of crop production, including a detailed study of experimental results with one or more field crops, supplemented with lectures and recitations. Must be preceded by course 11 and must be accompanied by course 15. Second half-year. Credit, 2 hours. Practice two afternoons per week, M., F.,2–4:30, *Morrill 20.* Professor HUNT.

15. **Seminary.** Discussion of research work and reports upon special topics. Required of all students taking graduate work in Agronomy or Soils. Required of undergraduate students taking Agronomy 13 and 14, or Soils 5. Not open to other students. Credit, one hour. W., 2–4:30, *Morrill. 20.* Professor HUNT, Assistant Professor FIPPIN, Mr. GILMORE and others.

19. **Farm Practice.** An elective course throughout the Freshman and Sophomore years, especially designed for students who are not familiar with ordinary farm methods and practices. Credit, one hour. One afternoon per week by appointment. Mr. GILMORE and Mr. TAILBY.

E. Horticulture.

Courses 1 aud 2 in Botany are prerequisites to courses in Horticulture except No. 27.

20. **Nursery and Orchard Practice.** Deals with the multiplication and subsequent care of plants, grafting, budding, making cuttings, pollination, pruning, spraying, garden tools, etc. First half-year. Credit, three hours. T., Th., 11. *Morrill 12.* Laboratory, W. or F., 2–4:30, *Forcing Houses.* Professor CRAIG and Mr. WILSON.

The classes in Nursery and Orchard Practice and Practical Pomology (20 and 23) participate in such excursions as may be arranged from time to time through the fruit growing regions of the state.

21. **The Literature of Horticulture and Landscape Gardening.** An examination of the writings of European and American authors, with special reference to the evolution of horticultural methods. First half of the second half-year. Credit, 1 hour, T., Th., 11, *Morrill* 19. Professor CRAIG.

22. **Plant Breeding,** with special reference to the improvement of orchard fruits, accompanied by work in forcing houses and orchard. Second half of the second half-year. Credit, one hour. T., Th., 11, *Morrill 19.* Professor CRAIG and Mr. COIT.

23. **Practical Pomology.** Lectures, text-book and other class exercises on the cultivation of fruits. Course 20 a prerequisite Second half-year. Credit, 3 hours. M., W., F., 10. *Morrill 19.* Professor CRAIG.

24. **Systematic Pomology.** Advanced course in classification and systematic study of fruits. Must be preceded by course 23. First half year. Credit, 2 hours Lectures, M., 10. *Morrill 19.* Laboratory. T., 2–4:30. *Forcing Houses.* Professor CRAIG.

25. **Greenhouse Construction and Management.** Lectures, text-book and laboratory. First half year. Credit, 2 hours. W., 8. *Morrill 19.* Laboratory, M. or T., 2–4:30. *Forcing Houses.* Mr. WILSON.

26. **Olericulture.** Lectures and text-book upon the cultivation of vegetables. Second half year. Credit, 1 hour. T., 8. *Morrill, 19.* Mr. WILSON.

27. **Handicraft.** Practical work in the Forcing houses and gardens with familiar talks. Credit, 1 or 2 hours, by appointment. Limited to 12 students first half year and 18 students second half year. *Forcing Houses.* Mr. HUNN and Mr. COIT.

28. **German and French Horticultural Reading.** A review of the leading horticultural publications in these languages, with special reference to recent horticultural progress in European countries. Open to students who have a reading knowledge of French and German. Credit, 2 hours. M., W., 11, *Morrill 19.* Mr. WILSON.

29. **Seminary.** For advanced students. Credit, 1 hour. By appointment. Professor CRAIG.

30. **Investigation** incident to previous courses. For graduates and advanced students. By appointment. Professor CRAIG.

F. Animal Husbandry.

31. **Animal Husbandry.** The principles of breeding, including the history, development, creation and improvement of the various races and breeds of farm animals; the principles of feeding, care, selection and management of dairy and beef cattle, horses, sheep and swine. Credit 4 hours. Lectures, T., Th., S., 12. Practice one hour by appointment. *Dairy Building and Judging Pavilion.* Professor WING and Mr. HARPER.

32. **Advanced and Seminary Work in Animal Technology.** Lectures, conferences and reports. The work will be largely individual and will afford opportunity for intimate and close study of the various breeds of improved stock. Must be preceded by course 31. Credit, 1 to 3 hours. M. afternoon. *Dairy Building.* Professor WING.

33. **Practice in Feeding and Stable Management.** The student will be put in charge of a certain number of animals and will be required to prepare the foods and keep records of consumption and production. The ability to milk well is required. Must be preceded by course 31. Credit, 3 hours. Daily, 7:30–9, *Barns and Stables.* Professor WING.

34. **Animal Mechanics and Exterior.** Lectures and recitations upon animal mechanics, proportions and the relation of the latter to specific uses. Practice in measuring animals and testing the value of given measurements for given purposes. Second half-year. Credit, 4 hours. Lectures or recitations, M., W., F., 9. Practice, one afternoon. *Judging Pavilion.* Professor WING and Mr. HARPER.

36. **Animal Husbandry.** Special course for students in the New York State Veterinary College and not open to students in the College of Agriculture. The principles of breeding and feeding animals, with the history of improved breeds and practicums in compounding rations and stock judging. First half-year until Christmas. Credit, 3 hours. M., W., F., 9. Practice, Th., 11-1, *Dairy Building and Judging Pavilion.* Professor WING.

37. **Poultry.** Origin, history and classification of the domestic breeds of poultry; breeding, feeding and management; construction of buildings and laying out of plants; caponizing, killing, marketing, hatching, brooding, etc. Credit, 2 hours. T., Th., 10, *Dairy Building.* Assistant Professor RICE.

38a. **Poultry Practice.** Poultry carpentry, judging poultry, care of fowls, study of the egg, anatomy of poultry, capouizing, and general work on the poultry plant. Credit, one hour. M. or W. afternoon.

b. **Practice in managing and keeping record of a pen of fowls for three weeks.** Credit, one or more hours. Morning, noon and afternoon. By appointment.

c. **Operating incubators or brooders, and keeping the records for three weeks.** Second half-year. Credit, one or more hours. Morning, noon and afternoon. By appointment.

The practice courses must accompany or follow course 37. *Poultry Yards.* Assistant Professor RICE.

39. **Poultry Seminary.** For advanced study and research. Open only to those students who have taken courses 37 and 38. Credit, one or more hours. By appointment. *Dairy Building.* Assistant Professor RICE.

G. Dairy Industry.

41. **Dairy Industry.** Elementary course. The character of milk, contamination and fermentation, methods of handling for different purposes, pasteurization, tests for fat and purity, butter-making and marketing. Must precede other dairy courses. First half-year until Christmas. Credit, 3 hours. Lectures and text-book. W., F., 11. Practice two periods each week by appointment. *Dairy Building.* Professor PEARSON and MR. AYRES.

42. **Cheese Making.** Cheddar cheese, its manufacture and marketing. Must be preceded by course 41. Second half-year after Easter recess. Credit, 2 hours. Lectures and text-book. M., 11. Practice includes 10 exercises of 5 hours each by appointment, and some of these will be taken during the Easter recess. Students expecting to take this course must report to the professor in charge before the Easter recess. *Dairy Building.* Professor PEARSON and Mr. HALL.

43. **Market Milk and Milk Inspection.** The production and control of market milk, with special reference to its improvement and principally from the standpoint of milk consumers and inspectors. Must be preceded by course 41. Second half-year after Easter recess. Credit, 2 hours. Lectures and text-book. W., F., 11. Practice Saturday morning, *Dairy Building*. Professor PEARSON.

44. **Advanced Work in Laboratory and Seminary.** Special work in practical problems, dairy bacteriology and research; also conferences. Must be preceded by course 41. Seminary, Th., 12, Bacteriological laboratory, M., W., F., 2–4:30 until Christmas. Other hours by appointment. *Dairy Building*. Prosessor PEARSON.

H. Agricultural Engineering and Architecture.

51. **Field Engineering.** Lectures, recitations and practice in surveying and plotting the farm, designing farm buildings, roads, fences and water supply; drainage and irrigation. Second half-year. Credit, 3 hours. Lectures, T., Th., 11, *Morrill 20*. Practice, T., 2–4:30, *South Barn*. Professor HUNT and Mr. GILMORE.

[52. **Farm Machinery.** Capital invested, construction, cost, life, uses and draft of tillage, seeding, harvesting, threshing, cleaning, grinding machinery, vehicles, and farm motors. Second half-year. Credit, 3 hours. Lectures, T., Th., 11, *Morrill 20*. Practice, T., 2–4:30. *Sonth Barn*. Professor HUNT and Mr. GILMORE. Not given in 1905–6.]

I. The Farm Home.

61. **The Homestead.** The externals of the farm home, lay out, buildings, landscape gardening, ornamenting, lawn making, the home garden, water supplies, rural architecture, sanitation. First half-year. Credit, 2 hours. T., Th., 10, *Morrill 20*. Professors BAILEY, CRAIG, MARTIN, OGDEN and others.

(The first part of this course is also given to Outdoor Art students, course 81).

62. **Woman's Work and Home Economics.** Social conditions past and present, shelter, house and clothing, sanitary equipment in the home, decorating and furnishing, household service, food, maintenance, hospitality, health and conservation of strength. First half-year. Credit, 2 hours. W., F., 10, *Morrill 20*. Miss VAN RENSSELAER and others.

63. **Literature and Art for the Farm Home.** A discussion of popular books in all branches of science, biographies of men prominent in American History and readings from recent Amerian ficriou which represent truthfully different phases of the development in

different sections of our country, also a discussion of the periodicals and pictures attractive and suitable for the farm home. Second half-year. Credit, 2 hours. W., F., 10, *Morrill 20*. Mrs. COMSTOCK.

J. Rural Economy and Sociology.

71. **Rural Economy.** A study of the interrelations of economics and agriculture. Must be preceded by Agronomy 11 and 12 and Political Science 51. Lectures, discussion and reports. First half-year. Credit, two hours. M., W., 9, *Morrill 13*. Assistant Professor LAUMAN.

72. **Rural Sociology.** The present social status and problems of the rural community. Must be preceded by Agronomy 11 and 12 and Political Science 51. Lectures, discussions and reports. First half-year. Credit, 2 hours. T., Th., 9, *Morrill 19*. Assistant Professor LAUMAN.

73. **History of Agriculture.** An outline of the development of agriculture in its more important phases. Open to Juniors and Seniors, and to second year Special students who have had Agronomy 11. Lectures, assigned readings and reports. Second half-year. Credit, two hours. T., Th., 9, *Morrill 19*. Assistant Professor LAUMAN.

74. **Advanced Rural Economy.** The subject for 1905–6 will be the question of labor in agriculture, for 1906–7 the subject will be the transportation of agricultural products. Must be preceded by course 71 and requires a reading knowledge of German or French. Second half-year. Credit, one hour. M., 9, *Morrill 19*. Assistant Professor LAUMAN.

75. **Advanced Rural Sociology.** The subject for 1905–6 will be the church in the rural community. Lectures, discussions and reports. Must be preceded by course 72. Second half-year. Credit, one hour. W., 9, *Morrill 19*. Assistant Professor LAUMAN.

76. **Advanced History of Agriculture.** A detailed study of special chapters in the development of agriculture. Lectures and assigned readings. Must be preceded by course 73, and requires a reading knowledge of German or French. First half-year. Credit, one hour. F., 9, *Morrill 19*. Assistant Professor LAUMAN.

77. **Farm Accounting.** Occasional lectures on the principles of accounting, with practice. Must be preceded by Agronomy 11 and 12. Second half-year. Credit, two hours. F., 9, *Morrill 19*. Assistant Professor LAUMAN.

78. **Seminary.** Devoted to current literature and the study of mouographs. Open to graduates and to seniors by special permission. *Morrill 19*. Assistant Professor LAUMAN.

79. **Investigation.** Primarily for graduates. *Morrill 19.* Assistant Professor LAUMAN.

K. Outdoor Art.

Not open to Special Students.

This is a two year course intended to comprise junior and senior years in the College of Agriculture. Before the student enters on the senior year of the Outdoor Art course he must have had the following subjects:

History of Architecture 50 (College of Architecture), 1 hour throughout the year.

Pen and color topography 1 (College of Civil Engineering), 1 hour first or second half-year.

Land surveying 10 (College of Civil Engineering), 3 hours either half-year.

Before graduating he must also have completed the following subjects:

Dendrology 9, 3 hours throughout the year.

Economic entomology 8, 2 hours second half-year.

Nursery and orchard practice 20, 3 hours first half-year.

Literature of horticulture and landscape gardening 21, 1 hour second half-year.

Greenhouse construction and management 25, 2 hours first half-year.

Handicraft in horticulture 27, 1–3 hours.

The Homestead 61, 2 hours first half-year.

Field engineering 51, 3 hours second half-year.

Special Outdoor Art work for 1905–6 will be as follows:

81. **Theory and Aesthetics of Outdoor Art and Landscape Design.** Lectures, text-book and discussion. Credit, 2 hours. M., 10, *Lincoln 29;* T., 12, *Morrill 19.* Professor BAILEY, Messrs. MANNING, FLEMING and others.

82. **Landscape Design.** Work with plans, drafting, planting specifications, etc. Credit, 2 hours. M., W., afternoon, *Forcing Houses.* Mr. MANNING, Mr. FLEMING.

83. **Freehand Sketching.** Rendering in pencil, pen, ink, and water color of outdoor subjects, with particular reference to landscape and plant forms. Credit, 2 hours. By appointment. Mr. ———.

84. **History of Landscape Design.** Lectures, reading and investigation. Credit, 1 hour. T., 10, *Morrill.* Mr. FLEMING.

86. **Plant Material of Outdoor Art.** Lectures and other exercises. First half-year. Credit, 2 hours. M., 12, and one laboratory

hour, *Morrill 19*. Mr. MANNING, Mr. FLEMING, Mr. COIT and others.

89. **Advanced Problems in Outdoor Art.** For advanced undergraduate and graduate students. T., 3, *Forcing Houses*. Mr. MANNING and Mr. FLEMING.

L. Two-Year Special Course in Nature-Study.

This course is designed to help persons who expect to teach nature-study and country life subjects in the public schools. Persons actually engaged in teaching and also all persons in the University who signify their intention to teach are eligible. A certificate will be given on the completion of 60 hours in the courses prescribed below, together with such other work in the College of Agriculture as may be approved by the Director.

(a) SUBJECT-MATTER COURSES.

Botany 1, 2, 3 hours, throughout the year.
Botany 5, 2 hours, second half-year.
Invertebrate Zoology 1, 2 hours, first half of first half-year.
Entomology 3, 3 hours, second half-year.
Systematic and Economic Zoology 6, 2 hours, throughout the year.
Geology 1, 3 hours, throughout the year.
Soils 1, 3 hours, first half-year.
The Homestead 61, 2 hours, first half-year.

(b) PRACTICE IN NATURE-STUDY.

91. **Nature-Study.** Lectures and discussion of methods. Second half-year. Credit, 3 hours. M., W., F., 12, *Insectary*. Mrs. COMSTOCK.

92. **Home Nature-Study Work.** Work in the training classes in the Ithaca schools in which students are also to take part. Second half-year. Credit, 1 hour. By appointment. Mrs. COMSTOCK.

93. **Practice Work in Nature-Study** in the public schools of Ithaca, comprising school room work, excursions, and other exercises with children. First half-year. Credit, 2 hours. By appointment. Miss MCCLOSKEY.

94. **School Gardens,** comprising actual garden making with children on school grounds and in the University school gardens. In winter the work will be conducted in the forcing houses where plant growing subjects will be taken up in such a way as to adapt them to elementary school conditions. Second half-year. Credit, 1 hour.

99. **Nature-Study.** Advanced course. Individual work on special problems. Registration only after consultation. Professor BAILEY, Mrs. COMSTOCK, and Miss MCCLOSKEY.

Students are requested to attend Professor DEGARMO'S "Philosophy of Education," Course 1. Attention is also called to the summer work in entomology.

M. Miscellaneous Courses.

101. **Lectures in General Agriculture.** First half-year. Credit, two hours. T., Th., 11. *Morrill 19.* Professor ROBERTS.

103. **Agricultural Meteorology and Climatology.** Lectures and laboratory work. Second half-year. Credit, three hours. M., W., F., 8. Mr. W. C. DEVEREAUX.

104. **German Agricultural Reading.** The object of this course is to familiarize the student with agricultural German. Credit, two hours. T., Th.. 10, *Morrill 19.* Assistant Professor LAUMAN.

COLLEGE OF ARCHITECTURE.

FACULTY.

JACOB GOULD SCHURMAN, A.M., D.Sc., LL.D., President.
CLARENCE A. MARTIN, Professor of Architecture in charge of the College of Architecture.
CHARLES BABCOCK, A.M., Professor of Architecture, Emeritus.
MAURICE J. PRÉVOT, A.D.G., Professor of Architecture in charge of Design.
OLAF M. BRAUNER, Assistant Professor of Drawing and Painting.
ALBERT C. PHELPS, B.S., M.Arch., Assistant Professor of Architecture.
HIRAM SAMUEL GUTSELL, B.P., A.M., Instructor in Freehand Drawing and Modeling.
ALDEN KITTREDGE DAWSON, Instructor in Freehand Drawing.
R. HAROLD SHREVE, B.Arch., Instructor in Architecture.

CHARLES SHERMAN COBB, B.Arch., Resident Fellow, 1905–1906.
JULES ANDRÉ SMITH, M.S. in Arch., Travelling Fellow, 1904–1906.

THE COURSES 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 or 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 aes-

thetic. 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, 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. 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, to prepare the complete scale working drawings, and to make typical full size details for its construction.

Throughout all his work the student is required to construct carefully and scientifically. 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 presentation of architectural ideas, in harmonious tones inspired from nature, are heartily encouraged.

Architectural Composition.

This subject is taught by means of a series of lectures in the second year and a succession of problems in design throughout the second, third, and fourth years. The design of the second year is usually referred to in the College as Second Class Design, and that of the third and fourth years as First Class Design. 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 eutire faculty of the College of Architecture, the acceptable drawings being graded mention, first mention, second medal, and first medal, according to the excellence of solution and presentation. The author of each design is then credited with counts or "values" that in design take the place of the numerical marks given in other subjects. In the larger problems a mention counts 1 value; 1st mention, two values; 2d medal, three values; 1st medal, four values; and in sketch problems these grades count one-half as much as in the larger problems. 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 criticises 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 later 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 characteristic of 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 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 student 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 considered necessary only 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 that are allied to architecture but that 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 availabie.

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 was held during the summer 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.

MEDALS AND PRIZES.

The Clifton Beckwith Brown Memorial Medal was founded by Mr. John Hartness Brown in memory of his brother Clifton Beckwith Brown, killed on the field of battle at San Juan Hill. A silver replica is awarded to the senior attaining the highest standing in design during his senior year, and a bronze replica to the senior holding second place. These medals, however, are not awarded for order of merit only, and unless the standard reached in design is considerably higher than that required for mere graduation the award is withheld.

The Charles Goodwin Sands Memorial Medal, founded by the family of the late Charles Goodwin Sands of the class of '90, is awarded for all designs of exceptional merit presented in the regular competitions. The medal drawings are ranked as first and second medal drawings, according to merit. The author of a first medal drawing is awarded a silver replica and the author of a second medal drawing a bronze replica of the medal. The award is for merit alone, and while the medal has occasionally been won by the fourth year student the standard is such that the honor is usually reserved for the graduate students.

The Central N. Y. Chapter A. I. A. Prize is a prize of $20 given annually by the Central New York Chapter of the American Institute of Architects to the winner of first place in a competition in senior design. The award conveys with it an election to Junior Membership in the Chapter.

Other Prizes of money are frequently offered by friends of the College for competition in the regular or special problems in design.

ADMISSION.

Elementary Subjects.

The following Elementary Subjects are required for admission to all colleges (except Veterinary College of the University):

English.
History.*
Plane Geometry.
Elementary Algebra.

Advanced Subjects.

In addition to the Elementary Subjects, an applicant must offer from the following list the Advanced Subjects required by the college to which he seeks admission. The figure following each subject indicates its relative weight:

Advanced Mathematics (6).
  Solid Geometry (2).
  Advanced Algebra (2).
  Plane Trigonometry } (2).
  Spherical Trigonometry }
German (12)
  Elementary German (6).
  Advanced German (6).
French (12).
  Elementary French (6).
  Advanced French (6).
Spanish (12).
  Elementary Spanish (6).
  Advanced Spanish (6).
Latin (18).
  Latin Grammar and Caesar (6).
  Latin Composition and Cicero (6).
  Virgil (6).
Greek (12).
  Greek Grammar, Xenophon (6).
  Greek Composition, Homer (6).
Physics (6).
Chemistry (6).
Botany (6).
Geology (6).
Zoology (6).
Drawing (6).

DRAWING. The entrance requirement in drawing includes simple plane and solid geometrical figures, simple still life and groups or pieces of machinery, and a fair knowledge of the rules of perspective and light and shade as applied in freehand sketching. The preparation may also include the drawing of simple pieces of architectural ornament, decoration, and simple plant forms, etc. This requirement represents about 300 hours of actual work.

Applicants offering drawing for entrance must present samples of their work and a teacher's statement showing time and proficiency, but for the present, applicants who have passed the examination in drawing given by the College Entrance Examination Board or the Regents examination in advanced drawing will be credited with entrance drawing.

For admission to the College of Architecture an applicant must offer the Elementary Subjects and also Mathematics (6), and either French

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*One of the following: (1) American (including Civil Government), (2) English, (3) Ancient (to 814 A. D.), (4) Mediæval and Modern European (from 814 A. D.)

(12) or German (12). An applicant who does not present a certificate of graduation from an approved preparatory school, or a satisfactory Regents' credential must, in addition to the above, also offer 12 units from the Advanced Subjects not already offered.

For details as to subjects and methods of admission, see pages 33–57.

For admission to the freshman class or to advanced standing from other colleges and universities communications should be addressed to the Registrar. See pages 33–57.

For admission as special students communications should be addressed to the College of Architecture. See page 56.

For admission to graduate work and candidacy for advanced degrees, communications should be addressed to the Dean of the University Faculty. See page 73.

ADVANCED CREDIT IN DRAWING AND DESIGN.

In order to encourage early and thorough preparation in drawing and in architectural design, due and proper credit will be given toward graduation for all such work done in or under the direction of regularly organized studios or ateliers, with the reservation that the work shall in each case be submitted to and passed upon by the Faculty of the College and that the credit so given shall not cover more than the first two years of college work in these subjects.

COURSE LEADING TO THE DEGREE OF BACHELOR OF ARCHITECTURE.

Freshman Year.	No. Course.	Hours per Week. 1st Term	2d Term.
History of Architecture	10	3	3
Analytic Geometry	2	5	–
Dif. Calculus	2	–	2
Int. Calculus	2	–	3
Elements of Architecture	11	2	4
Freehand Drawing	12	3	3
Descriptive Geometry (Civil Eng.)	9	2	–
Shades and Shadows	13	1	–
Perspective	14	–	2

In addition to the above there will be required of each student 3 actual hours a week of physical training, the men taking this work in the Department of Military Science and Tactics and the women in the Department of Physical Culture.

Sophomore Year.	No. Course.	1st Term.	2d Term.
History of Architecture	20	3	–
Mechanics (Civil Eng.)	21	3	–
Design	21	8	8
Drawing from the Antique	22	3	3
Masonry Construction	23	–	2
Composition	24	–	1
Clay Products and Building Stones (Geol.)	46	–	2
Water Color Painting	27	–	2

In addition to the above there will be required of each student 3 actual hours a week of physical training, either in the Department of Military Science and Tactics or in the Department of Physical Culture as he may elect.

Junior Year.	No. Course.	1st Term.	2d Term.
History of Painting and Sculpture	30	1	1
Structural Details (Civil Eng.)	71	2	–
Design	31	–	10
Modeling	32	–	2
Planning of Domestic Buildings	34	2	–
Specifications	34a	1	–
Working Drawings	34b	5	–
Steel Construction and Fireproofing	35	–	3
Heating and Ventilating	36	–	1
Pen and Ink Drawing	37	2	–
Physics	1	4	–

Senior Year.	No. Course.	1st Term.	2d Term.
Modern Architecture	40	–	2
History of Ornament	40a	–	1
Reinforced Concrete Arch (C.E.)	72	2	–
Design	41	12	12
Life Class	42	2	–
Seminary	43	1	1

Students who wish to do so may elect course 30a or 30b in History of Art instead of Seminary, course 43.

One registered hour means about three hours of actual work per week. 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 per week (more or less according to the ability of the student) of actual work in the drafting room.

Architectural Engineering.

Students in Architecture wishing to specialize in Construction or Architectural Engineering, may do so by taking all of the first three years of the regular course in Architecture, except the Mechanics of the Sophomore year for which should be substituted Mechanics Course 20 in the College of Civil Engineering; and by taking special work during the Senior year arranged to suit individual cases. For this special work are offered advanced work in the College of Architecture and any or all of the following subjects—for description see under College of Civil Engineering:

	No. Course.	1st Term.	2d Term.
Engineering Laboratory	22	2	2
Materials of Construction	25	–	3
Testing Materials	57	3	–
Structural Design	71	5	3
Reinforced Concrete Arch	72	2 or	2
Masonry Foundations	74	–	3

A TWO YEAR SPECIAL COURSE IN ARCHITECTURE.

Special students are admitted to the College of Architecture without formal examination, provided they give evidence of ability to do creditable special work in the College and have not already been admitted to the University, nor, having applied for admission, been rejected.

The privilege of admission as special students without examination is not intended for students coming directly from secondary schools, but rather for those who have been engaged in practical work that may have fitted them for the advanced work of the special course.

A special student must be at least twenty-one (21) years of age; he must have had a good high school training or its equivalent, including particularly a good working knowledge of geometry and algebra; and should be familiar with the details and proportions of the classic orders of Architecture as given in the Vignola. He shall have had at least three (3) years of experience in some good architect's office, or its equivalent; and shall submit with his application examples of architectural drawing done by himself and examples of drawing—if he have such—from the cast or from life.

Should a special student desire to graduate in the College, he may do so on condition of passing all the entrance examinations and doing the required work of the regular course. He will not, however, be permitted to make up deficiencies in entrance subjects by attending university instruction in such subjects.

The following course has been arranged for special students. It does not lead to a degree, but a certificate will be issued upon its satisfactory completion. Candidates proficient in any of the subjects herein scheduled will be allowed to substitute other architectural subjects in their stead. For further information 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 (Civil Eng.)	9	2	–
Shades and Shadows	13	1	–
Perspective	14	–	2
Modeling	32	–	2

Second Year.

	No. Course.	1st Term.	2d Term.
History of Architecture	20	3	–
Design	41	12	12
Drawing from the Antique	22	3	3
Modern Architecture	40	–	2

Summary of Courses of Instruction.

1a. **Elementary Freehand Drawing.** Two university hours per week throughout the year. T., Th., 10–1. Mr. GUTSELL.

1b. **Elementary Freehand Drawing.** Three university hours per week throughout the year. M., W., F., 2–5. Mr. GUTSELL and Mr. DAWSON.

2. **Advanced Freehand Drawing.** Two or three university hours per week, as may be arranged, throughout the year. M., W., F., 2–5. Mr. GUTSELL and Mr. DAWSON.

NOTE. Course 1a is required of first year students in the College of Agriculture. 1b and 2 are offered for all students in the University for election under such conditions as their separate faculties may prescribe. These may be taken as either 2 or 3 hour courses, but a student will not be permitted to take course 2 unless he has had the full equivalent of 3 hours in course 1b.

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10. **History of Architecture.** First term: Egyptian, Greek, Roman and Byzantine Architecture. Second term: Romanesque and Gothic Architecture. Three lectures per week throughout the year. T., Th., S., 9. *Lincoln 29.* Assistant Professor PHELPS.

11. **Elements of Architecture.** The classic orders of architecture drawn and rendered iu India ink and water color. Six drafting hours per week throughout the first term and twelve drafting hours per week throughout the second term. Mr. SHREVE.

12. **Freehand Drawing.** Charcoal drawing from the cast. Nine hours of drawing per week throughout the year. M., W., F., 10–1. Assistant Professor BRAUNER and Mr. DAWSON.

13. **Shades and Shadows.** Lectures and drawiug equivalent to one university hour. Latter part of first term. Mr. SHREVE.

14. **Perspective.** One lecture and six hours of drafting per week during the second term after the Easter recess. M., Th., F., 2–5. Professor MARTIN.

20. **History of Architecture.** First term: Renaissance Architecture. Three lectures per week. M., W., F., 9. *Lincoln 29.* Assistant Professor PHELPS.

21. **Design.** Periodical problems arranged to occupy about twenty-four drafting hours per week throughout the year. Professor PRÉVOT, assisted in rendering by Assistant Professor BRAUNER.

22. **Drawing from the Antique.** Charcoal and pastel work from

the cast. Nine hours per week throughout the year. M.,W.,F., 10–1. Assistant Professor BRAUNER and Mr. DAWSON.

23. **Masonry Construction.** Second term. Lectures and recitations. Two hours per week, W.,F., 9; supplemented by drawing and by inspection of actual work. The course is preparatory to courses 34 to 35. Professor MARTIN.

24. **Composition.** One lecture per week during the second term. Professor PRÉVOT.

27. **Water Color Painting.** Six actual hours per week in the second term, in paintiug from still life groups and from nature. M., W., 9–12. Assistant Professor BRAUNER.

30. **History of Painting and Sculpture.** A brief survey of the history of painting and sculpture from the artist's standpoint. One lecture per week throughout the year. W., 4, *Lincoln 29*. Assistant Professor BRAUNER.

30a. **History of Art in Italy.** Condition of the arts on the decline of the Roman civilization. The revival of the arts of design in the thirteenth century. The development of painting and sculpture until the sixteenth century and a brief review of their decline. Lectures. T., Th., 12, *Lincoln 29*. Mr. GUTSELL. This course will not be given in 1905–6.

30b. **Art North of the Alps.** A survey of the beginnings of art in the Germanic communities. Painting, engraving, and woodcutting. the Flemish and Dutch masters of the sixteenth and seventeenth centuries. Lectures. W.,F., 12. Mr. GUTSELL.

NOTE. Students in Architecture may elect either course 30a or course 30b instead of seminary, course 43, in the fourth year.

31. **Design.** Periodical problems arranged to occupy about thirty hours per week during the second term. Professor PRÉVOT, assisted in rendering by Assistant Professor BRAUNER.

32. **Modeling.** Second term. Six hours work per week in clay modeling. T.,Th., 2–5, Mr. GUTSELL.

*34. **Planning of Domestic Buildings.** First term. 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. Professor MARTIN.

*34a. **Specifications**; *34b. **Working Drawings.** First term. Three to five lectures and thirty hours drafting per week during the intermediate and latter part of the term. These courses continue the work of course 34 by the study of specifications and ordinary methods

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*Since Courses 34, 34a and 34b are but the successive steps in a single scheme, they should be taken consecutively and in one term.

and details of construction 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. Professor MARTIN.

35. **Steel Construction and Fireproofing.** First half of second term. Lectures and drawing equivalent to six university hours per week during the first half 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. Professor MARTIN.

36. **Heating and Ventilating.** Two lectures per week during the second half of the second term, supplemented by practical problems. T., Th., 12. Professor CARPENTER.

37. **Pen and Ink Drawing.** Work in pen and ink rendering, sketching and illustration. Six hours' drawing per week throughout the first term. T., Th., 10-1. Mr. DAWSON.

40. **Modern Architecture.** Two lectures per week during the second term. M., W., 9, *Lincoln 29*. Assistant Professor PHELPS.

40a. **History of Ornament.** Historic motives employed in architecture; their origin, evolution and application. Some of the great historic styles of decoration will be analyzed and studied in detail and the development of furniture, textiles and other minor arts briefly outlined. One lecture per week during the second term. F., 9, *Lincoln 29*. Assistant Professor PHELPS.

41. **Design.** Periodical problems arranged to occupy about thirty-six drafting hours per week throughout the year. Professor PRÉVOT, assisted in rendering by Assistant Professor BRAUNER.

42. **Life Class.** Two afternoons per week throughout the year, drawing from the nude model. First term required, second term elective. Assistant Professor BRAUNER and Mr. DAWSON.

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 PHELPS.

50. **History of Architecture.** (This course is given by the College of Architecture for the year 1905-6 for the accommodation of the College of Agriculture.) A brief general survey of the whole field of architectual development with a careful study of the important historic styles of architecture, their origins, systems of construction, elementary forms, decoration and a series of selected examples illustrated by lantern slides. One lecture per week throughout the year. M., 12, *Lincoln 29*. Assistant Professor PHELPS.

COLLEGE OF CIVIL ENGINEERING.

FACULTY.

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

CHARLES LEE CRANDALL, C.E., M.C.E., Professor in charge, and Professor of Railway Engineering and Geodesy.

IRVING PORTER CHURCH, C.E., M.C.E., Professor of Applied Mechanics and Hydraulics, in charge of the College Library.

HENRY SYLVESTER JACOBY, C.E., Professor of Bridge Engineering.

HENRY NEELY OGDEN, C E., Assistant Professor of Sanitary Engineering, in charge of Descriptive Geometry, and Secretary of the College Faculty.

ELMER JAMES McCAUSTLAND, C.E., M.C.E., Assistant Professor of Mining Engineering and Surveying, in charge of the Laboratory for Testing Materials.

JOHN THOMAS PARSON, Assistant Professor of Drawing, in charge of the Photographic and Drawing Collections.

OSCAR AUGUSTUS JOHANNSEN, B.S., AM., Ph.D., Assistant Professor of Structural Engineering.

ERNEST WILLIAM SCHODER, B.S., Ph.D., Assistant Professor of Experimental Hydraulics in charge of the Hydraulic Laboratory.

FRED ASA BARNES, C.E., M.C.E Assistant Professor of Railroad Engineering and Surveying.

MILES ALBION POND, Ph.B., Instructor in Civil Engineering and in Descriptive Geometry.

ORA MINER LELAND, B.S., Instructor in Civil Engineering and in Astronomy.

SAMUEL R. BOOTHROYD, B.S., Instructor in Civil Engineering and in Descriptive Geometry.

ROSS MILTON RIEGEL, C.E., Instructor in Civil Engineering.

SIDNEY GONZALES GEORGE, C.E., Instructor in Civil Engineering.

RICHARD HOPKINS, B.C.E., Instructor in Civil Engineering.

WILLIAM COLEMAN McNOWN, B.S., Instructor in Civil Engineering.

ROBERT WILLIAM THOROUGHGOOD, C.E., Instructor in Civil Engineering.
FRANCIS J. SEERY, S.B., Instructor in Civil Engineering.
DONALD DERICKSON, B.S., Instructor in Civil Engineering.
JOHN R. ELDRED, M.E., Instructor in Civil Engineering.
HERBERT AUGUST GEHRING, C.E., Instructor in Civil Engineering.
JOHN CHARLES DAVIS, C.E., Instructor in Civil Engineering.
CHARLES L. B. ANDERSON, S.B., Instructor in Civil Engineering.
GEORGE IRVING GAVETT, B.S., Instructor in Civil Engineering.
JOHN CROMWELL BREEDLOVE, A.B., C.E., Instructor in Civil Engineering.
ELBERT ALLAN GIBBS, B.S., Instructor in Civil Engineering.
CHARLES E. MANNING, M.E., Instructor in Civil Engineering.
CHARLES LEOPOLD WALKER, C.E., Instructor in Civil Engineering.
EMILE ALFRED EKERN, B.S., M.M.E., Instructor in Civil Engineering and in the Laboratories.
FRANK W. SKINNER, C.E., Associate Editor, *Engineering Record*. Lecturer in Field Engineering.

Members of the Faculty of Arts and Sciences who are heads of departments giving outside instruction to the students of this College. Arranged in the order of seniority of University appointments:

THOMAS FREDERICK CRANE, A.M., L.L. D., Professor of Romance Literature.
WATERMAN THOMAS HEWETT, A.B., Ph.D., Professor of German Literature.
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.
JEREMIAH WHIPPLE JENKS, A.M., Ph.D., Professor of Political Economy, etc.
LUCIEN AUGUSTUS WAIT, Professor of Mathematics.
GEORGE FRANCIS ATKINSON, Ph.B., Professor of Botany.
LOUIS MONROE DENNIS, Ph.B., B.S,, Profeseor of Chemistry.
HENRY SHALER WILLIAMS, B.S.,Ph.D., Professor of Geology.
FRANK ARTHUR BARTON, M.E., Professor of Military Science.
CHARLES VAN PATTEN YOUNG, A.B., Acting Professor of Physical Culture.

Special Non-Resident Lecturers for 1904-1905.

RALPH MODJESKI, Consult. Engr., The Thebes Bridge.
ANDREW O. CUNNINGHAM, Bridge Engr., Reinforced Concrete Structures for Railroads.
PROFESSOR GARDNER S. WILLIAMS, Fire Protection.
ROBERT SPURR WESTON, Sanitary Engr., Purification of Ground Waters.
THOMAS K. BELL, Chief Engr., Development of Special Track Construction.
COLONEL HENRY G. PROUT, Some Relations of the Engineer to Society.

GERTRUDE MARSH SANFORD, College Librarian.
WILLIAM ORLANDO STUBBS, College Mechanician.
CLINTON D. CASS, Assistant College Mechanician.

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 well 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 in 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 roads, railroads, canals, and water works; the construction of foundations in water and on land, and of superstructures and tunnels; the survey, improvement, 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 arches, bridges, roofs, trusses, suspension and cantilever bridges; the drainage of districts, sewerage of towns and the irrigation and reclaiming of land; the design, construction, application and tests of wind and hydraulic motors, electrical and heat engines, and pneumatic works; the preparation of detail drawings, of plans and specifications, and the proper inspection, selection, and tests of the materials used in construction. Instruction is 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 a 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 added for graduates desiring advanced study in the separate branches of their profession. Admission to these courses is open to graduates of this college or of 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, mining 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 Lincoln Hall, a substantial brown stone structure, two hundred feet long and seventy feet wide, specially designed for the purpose 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 U. S. Weather Bureau for

the State of New York. The astronomical and portions of the geodetic equipment of this College are housed in the Fuertes 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 large hydraulic laboratory with its buildings and equipment is located at the Fall Creek gorge, within a short distance of 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 determination of coefficients; weirs provided with different forms and heights of notches and orifices; venturi and other water meters ; gages 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 record the speed automatically ; in others, the revolutions are determined by sound ; and still others record, by electrical devices, both the velocity and the direction of the current. On Fall Creek and near the College a curved concrete masonry dam some 100 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 increased to 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 truck 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.

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 foot steel pipe to which water can be admitted either by a lateral channel from the main canal or through a forty-eight inch pipe which taps the dam and Beebe Lake. This subdivision of heads and water volumes enables the performing, simultaneously, class work and experiments, without interfering with the regular conditions of each experiment. The lateral canal is also provided with weirs and gages upon the removable portion of the walls of this sub-canal. The lower laboratory building is a sightly, solid structure eighty feet long and about eighty feet high, and contains a fifty thousand pound scale and tank. 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.

It may be desirable to add that further improvement of devices is in contemplation for the measurement of large volumes of water, beyond the capacity of the canal, stand pipe and the 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 Lake Superior Power 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 which exist nowhere else in this country or in Europe.

3. **A Cement Laboratory** provided with automatic machines for the establishment of standard tests. The apparatus of this laboratory has been designed by specialists in view of its needs. Standard conditions are aimed at in all tests. The sifting of cements, moulding, condensing and testing are performed mechanically. The laboratory contains: Three machines for tension tests, three machines for crushing tests ranging from two to two hundred tons, one impact machine, one rattler cylinder of the dimensions recommended by the National Association of Brick Manufacturers, 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 briquette moulds, scales, plate glass mixing tables, thermometers for cement test purposes, a Bunsen pump and apparatus for testing the permeability of cements, several sets of 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 storage 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 study of instruments of precision. This room contains a sideral chronometer by Negus, and an accurately compensated mean time Howard astronomical clock, which furnishes 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 Kater pendulum to which noddies may be attached. Also a Kew magnetometer and Barrows circle; the manipulation of these instruments. and some of their constants, are obtained in the laboratory, but the magnetic constants and 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 Legan in 1874. This room has also several meterological instruments devised for special purposes, like the study of wind gusts in violent storms. A Richards three-cylinder machine gives the direc-

tion 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 upon a rotary cylinder, a curve whose ordinates are proportioned to the wind's velocity for each meter of travel. 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 a line and end measure comparator and a small Geneva dividing engine. This room is built with hollow, double walls, and the daily range of temperature is less than one degree F. In this laboratory are placed 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 tight case. Project-ing handles give motion to the 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; it has been compared at the U. S. Coast Survey Office with the International Standard. There is also a Rogers speculum metal decimeter and four-inch scale, accurately divided and compared, 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 also contains a four foot 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 steel tapes. A Mendenhall half seconds pendulum, constructed in this College, is mounted upon a pier for determinations of the force of gravity. This pendulum is a reproduction, from patterns loaned by the Coast Survey Office, of the instruments used for the above purposes bp the International Association of Geodesists, and contains improvements suggested by the experience with older instruments.

6. **A Testing Laboratory for Materials of Construction** and for full sized members, joints and structures. The 400,000 pound testing machine has a clear width of 19 inches between standards and an effective length of 12 feet for specimens in both tension and com-

pression, the tension grips taking widths up to 8 inches for plates and 4-inch legs for angles. The capacity for beams and girders is up to 19 inches in width and to 18 feet in length, the center load at the latter limit being only 100,000 pounds.

The standard rattler with cast iron shot for paving brick and the Deval abrasion machine and Page impact machine for macadam material furnish excellent facilities for the study of roadway materials, while the stone saw and grinding wheel allow of preparing stone specimens with smooth plane beds for the testing machine without danger of injury from hammer and chisel.

The one fourth scale steel bridge model furnishes an excellent opportunity for comparing computed stresses with those actually existing in different members of the structure due to various loadings, the stress being found from the measured change in length of the member.

7. **A Bacteriological Laboratory** in which students may become acquainted with bacterial forms and such portions of bacteriology as bear upon sanitary engineering. The optical apparatus has been expressly manufactured for us by Rickert 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 especially manufactured by the mechanicians 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 purchasers, 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 ; its inventor, Mr. G. W Parsons, having 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. **The Fuertes Astronomical Laboratory and Training Observatory** which contains an astronomical transit by Troughton and Simms and one by Fauth ; two sidereal clocks and a mean time clock; a four-and-a-half-inch Clark equatorial ; two large altazimuths reading to seconds by levels and micrometers ; and two three-and-three-eights inch zenith telecopes by Fauth, besides sextants, chronographs, chronometer, etc.

Students become here familiar with methods of observing, adjusting instruments, and making 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 center.

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 and roof details, trusses and masonry structures, such as right, oblique and annular arches and domes, and several intricate models in stone cutting, supplemented by similar models by Schroeder and other makers. 5. A model railroad bridge of one hundred foot span, one-fourth 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 progress photographs of engineering works showing the progress of construction, and many other photographs, blueprints, models and diagrams. 9. An extensive collection of instruments of precision, such as a 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 a 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, eliptographs, arithmometers, computing machines, altazimuths, sextants, telemeters, and altmeters, 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 nine engineering laboratories of this College, as described above.

REQUIREMENTS FOR ADMISSION.

The subjects that may be offered for admission are named in the following lists:

Elementary Subjects.

The following Elementary Subjects are required for admission to all colleges of the University except the Veterinary College:

English.
History.*
Plane Geometry.
Elementary Algebra.

Advanced Subjects.

In addition to the Elementary Subjects, an applicant must offer from the following list the Advanced Subjects required by the college to which he seeks admission. The figure following each subject indicates its relative weight:

Advanced Mathematics (6).
  Solid Geometry (2).
  Advanced Algebra (2).
  Plane Trigonometry (2).
  Spherical Trigonometry (1).
German (12).
  Elementary German (6).
  Advanced German (6).
French (12).
  Elementary French (6).
  Advanced French (6).
Spanish (12).
  Elementary Spanish (6).
  Advanced Spanish (6).
Latin (18).
  Latin Grammar and Caesar (6).
  Latin Composition and Cicero (6).
  Virgil (6).
Greek (12).
  Greek Grammar, Xenophon (6).
  Greek Composition, Homer (6).
Physics (6).
Chemistry (6).
Botany (6).
Geology (6).
Zoology (6).
Drawing (6).

Drawing. The entrance requirement in drawing includes simple plane and solid geometrical figures, simple still life and groups or

*One of the following: (1) American (including Civil Government), (2) English, (3) Ancient (to 814 A. D.). (4) Mediæval and Modern European (from 814 A. D.)

pieces of machinery, and a fair knowledge of the rules of perspective and light and shade as applied in freehand sketching. The preparation may also include the drawing of simple pieces of architectural ornament, decoration, and simple plant forms, etc. This requirement represents about 300 hours of actual work.

Applicants offering drawing for entrance must present samples of their work and a teacher's statement showing time and proficiency, but for the present, applicants who have passed the examination in drawing given by the College Entrance Examination Board or the Regents examination in advanced drawing will be credited with entrance drawing.

For admission to the College of Civil Engineering an applicant must offer the Elementary Subjects and also one (30 units) of the following groups of Advanced Subjects:

A. Advanced Mathematics (6); and any two of the following languages: German (12), French (12), Spanish (12).

B. Advanced Mathematics (6); and German (12); and French (6) or Spanish (6); and any other 6 units from the Advanced Subjects.

C. Advanced Mathematics (6); and French (12); and German (6) or Spanish (6); and any other 6 units from the Advanced Subjects.

D. Advanced Mathematics (6); and German (12); and any 12 units in Latin.

Special Students are admitted only when they are graduates of other institutions pursuing advanced work, and are not candidates for a degree. See page 52.

[*For details as to subjects and methods of admission see pages 33–57.*

For admission to the Freshman class and for admission to advanced standing from other colleges and universities communications should be addressed to the Registrar. See pages 33–57.

For admission as special students, communications should be addressed to the Director of the College of Civil Engineering. See page 56.

For admission to graduate work, communications should be addressed to the Dean of the University Faculty. See page 73.]

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 page 382) 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 73, 76–78. 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 77 and 78.

For fellowships and scholarships see pages 69–72.

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 end of the first term of his senior year, to have maintained the highest degree of scholarship in the subjects of his course, provided he has been in attendance in the University for at least one and one half 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 presented in a 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.

The William C. Seidell Book Fund of one thousand dollars, founded by Gerrit S. Miller, the income of which is to be used for

the purchase of books for poor young men who are working their way through the College of Civil Engineering, is available as follows: Payments will be made by the Treasurer of the University upon the recommendation of the Director of the College, preference being given to members of the freshman class.

A FOUR-YEAR COURSE LEADING TO THE DEGREE OF CIVIL ENGINEER.

Freshman Year.	No. Course.	1st Term.	2d Term.
Analytics	2	5	–
Differential Calculus	2	–	2
Integral Calculus	2	–	3
Physics	1	4	–
Physics	6	–	4
Physics	10	1	1
Chemistry	1	6	(or 6)
Drawing	1	(or 4)	4
Land Surveying	10	(or 3)	3

In addition to the above the required Drill and Gymnasium must be taken.

Sophomore Year.	No. Course.	1st Term.	2d Term.
Dendrology	3	2	–
Geology	45	3	3
Descriptive Geometry	8	5	–
Mechanics	20	5	5
Engineering Laboratory	22	2	2
Materials of Construction	25	–	3
Drawing	4	–	2
Higher Surveying	11	–	2

In addition to the above the required Physical Training must be taken.

Junior Year.	No. Course.	1st Term.	2d Term.
Political Economy	51	3	3
Railroad Engineering	60	4	4
Structural Design	71	5	3
Hydraulics	23	5	–
Hydraulic Laboratory	40	–	1
Municipal Engineering	52	–	4
Engineering Problems	29	–	2
Field Construction (in alternate years)	75	–	1
		During vacation.	
Geodetic and Topographic Surveys	Course 15, 4 hours.		

Senior Year.	No.	Course.	1st Term.	2d Term.
Reinforced Concrete Arch	72		2	(or 2)
Geodesy and Astronomy	13		5	–
Cartography	16		–	2
Water Supply	32		2	–
Electrical Engineering	(E.E.) 11		4	–
Steam Machinery	(M.E.) 10		–	4
Engineering Design	91		–	3
Specifications and Contracts	90		–	2
Field Construction (in alternate years)	75		–	1
*Elective	—		3	3
Thesis	92		1	2

A Six-Year Course Leading to the Two Degrees A.B. and C.E.

[*Only for those receiving A.B., June, 1906, See page 80.*]

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 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 degree of A.B. and C.E. Subjects in italics are those common to the courses for both degrees.

Freshman Year.	No.	Course.	1st Term	2d Term.
Analytical Geometry	2		5	–
Differential Calculus	2		–	2
Integral Calculus	2		–	3
Dendrology	3		2	–
Chemistry or Drawing	–		6	–
Drawing *or Chemistry*	–		–	6
Elective in Arts and Sciences (Maximum)	–		5	7
Drill	–		2	2

*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 electives include Courses 17, 18, 24, 31, 32, 41, 42, 43, 54, 55, 57, 61, 73, 74, 80, 81, 82 and 83. 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. In Chemistry, Courses 18 and 66 are recommended; and in Medicine, Course 43.

Sophomore Year.		No. Course.	1st Term.	2d Term.
Physics		1	4	–
Physics		6	–	4
Physics		10	1	1
Geology		45	3	3
Descriptive Geometry	(C.E.)	8	5	–
Elective in Arts and Sciences (Maximum)		–	6	11

Junior Year.	No. Course	1st Term.	2d Term.
Political Economy	51	3	3
Mechanics	20	5	5
Engineering Laboratory	22	2	1
Land Surveying	10	–	3
Elective in Arts and Sciences (Maximum)	—	8	6

Senior Year.	No. Course.	1st Term.	2d Term.
Materials of Construction	25	–	3
Engineering Laboratory	22	–	1
Drawing	4	–	2
Higher Surveying	11	–	2
Elective in Arts and Sciences	—	18	10

The completion of the above courses will lead to the degree of A.B.

Fifth Year.	No. Course.	1st Term.	2d Term.
Railroad Engineering	60	4	4
Structural Design	71	5	3
Hydraulics	23	5	–
Hydraulic Laboratory	40	–	1
Municipal Engineering	52	–	4
Engineering Problems	29	–	2
Field Construction (in alternate years)	75	–	1
Elective.	—	4	4

During vacation.

Geodetic and Topographic Surveys — Course 15, 4 hours.

Sixth Year.		No. Course.	1st Term.	2d Term.
Reinforced Concrete Arch		72	2	(or 2
Geodesy and Astronomy		13	5	–
Cartography		16	–	2
Water Supply		32	2	–
Electrical Engineering	(E.E.)	11	4	–
Steam Machinery	(M.E.)	10	–	4
Engineering Design		91	–	3
Specifications and Contracts		90	–	2
Field Construction (in alternate years)		75	–	1
Elective		—	3	3
Thesis		92	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 provided he wishes to register in the above six-year course leading to the degrees of Bachelor of Arts and Civil Engineering.

Students receiving their A.B. degrees after June, 1906, may take advantage of the following clause in the requirements for that degree:—

7. A student who has satisfied at least six terms of residence no one of them under the provisions of paragraphs 2 or 3, and who has a credit of at least ninety hours, may, with the permission of the Faculties concerned, be registered both in the College of Arts and Sciences and also in any other College of Cornell University.

A student desiring to avail himself of this privilege should take all the subjects printed above in italics during the first three years. His course for the fourth year would then be as follows;

Senior Year	No. Course	1st Term	2nd Term
Drawing	1	2	2
Land Surveying	10	3	–
Descriptive Geometry	8	5	–
Mechanics	20	5	5
Engineering Laboratory	22	2	2
Materials of Construction	25	–	3
Drawing	4	–	2
Higher Surveying	11	–	2

The fifth and sixth years would then be the same as the third and fourth years of the regular four-year course, except the Political Economy would have been passed off.

Courses of Instruction.

The numbers following the names of instructors refer to the rooms in Lincoln Hall.

1. **Drawing.** Geometrical problems, conventional cross-sectioning, detail and dimension drawing, tracing details, isometric drawing, pen topography, freehand and mechanical lettering. Twelve hours per week. This course is given in each half-year. First half-year. Section *a*, M., W., 10–12, 2–4:30; F., 10–1. Section *b*, T., Th., 9–11, 2–4:30; F., 2–4:30. Assistant Professor PARSON, 54. Second half-year. T., W., F., 2–4:30; S., 8–12:30. Mr. POND, 54.

4. **Drawing.** Lettering, tinting and shading. Six hours per week. Second half-year. Section *a*, T., F., 11–1 ; T., 2–4. Section *b*, W., F., 2–4 ; Th., 8–10. Section *c*, F., S., 8–11. Section *d*, M., W., 8–11. Section *e*, M., 2–4:30 ; T., 8–11. Assistant Professor PARSON, 42.

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. First half-year. Lectures, three hours per week. T., Th., S., 8. Assistant Professor OGDEN. Original problems, six hours per week. Sections *a* and *b*, M., W., F., 8–10. Sections *c* and *d*, T., Th., S., 11–1. Assistant Professor OGDEN, Mr. POND and Mr. BOOTHROYD, 31, 42, 54.

9. **Descriptive Geometry.** For students in Mechanical and Electrical Engineering and in Architecture. Original problems, three exercises of two hours each per week. The course is given each half-year. Section *a*, M., W., F., 8–10. Section *b*, M., W., F., 11–1. Section *c*, M., W., F., 3–5. Section *d*, M., W., F., 8–10. Section *e*, T., Th., S., 8–10. Section *f*, T., Th., S., 10–12. For students in Architecture. First half-year. Section *g*, M., W., F., 2-4. Assistant Professor OGDEN, Messrs. POND, BOOTHROYD, ELDRED, GARETT, GIBBS, MANNING, WALKER, and ——, 31, 36, 42, 54, and Sibley 17.

Surveying and Geodesy.

10. **Land Surveying.** An elementary study of surveying methods and instruments. The recitations 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 of the second half-year is preceded by exercises devoted to a careful study of each instrument. Johnson's Theory and Practice of Surveying is used as a text-book. The course is given each half-year. Lectures and recitations, one hour per week. First half-year. Section *a*, W., 9 ; section *b*, Th., 9 ; sections *c* and *g*, M., 9 ; sections *d* and *f*, T., 9. Second half-year. Section *a*, W., 9 ; section *c*, M., 9 ; section *g*, T., 9. Field work, six hours per week. First half-year. Section *a*, T., Th., 1:30–4:30 ; section *b*, F., S., 8–11. Second half-year. Examination of surveying instruments, two hours per week during first part of term, Th., 2-4. Field work, nine hours per week during second part of term, T., Th., 1:30–4:30, F., 8–11. Assistant Professors MCCAUSTLAND and BARNES, Messrs. GEHRING, GIBBS, THOROUGHGOOD, MCNOWN and SEERY. 43, 45, 32.

11. **Higher Surveying.** Accurate methods of measuring distances and angles; grading and contouring; street grading; city surveys and monuments; mining survey methods. Reference books: Pence and Ketchum's Surveying Manual, Raymond's Plane Surveying, and Johnson's Theory and Practice of Surveying. Second half-year. Recitations, one hour per week. Section *a*, M., 9; section *b*, T., 9; section *c*, T., 10; section *d*, W., 9; section *e*, W., 2. Field work, four hours per week during the latter half of the term. Section *a*, Th., 8–12; section *b*, S., 8–12. Assistant Professors McCAUSTLAND and BARNES, Messrs. RIEGEL, McNOWN and THOROUGHGOOD, 32, 34, 43.

13. **Geodesy and 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. Lectures, night observations and computations. **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. First half-year. Recitations and lectures, three hours per week during first half of term. Section *a*, M., T., F., 12; section *b*, M., Th., S., 12; section *c*, T., W., F., 12. During second half of term. Sections *a* and *b*, daily ex. S., 12; section *c*, M., W., F., 10; T., Th., 9, Professor CRANDALL and Mr. LELAND, 24, 32, 45. Observation two evenings per week during the first half of the term. Section *a*, M., Th.; section *b*, T., F.; section *c*, W., S. Professor CRANDALL, Messrs. LELAND, BOOTHROYD and RIEGEL.

15. **Geodetic and Topographic Surveys.** Requires courses 10, 11 and 60. The work will be conducted from a camp near Dryden, N. Y., 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, and some plane-table practice is given in filling in the details. The maps are plotted to a scale of 400 feet to an inch from the coördinates of the stadia lines, adjusted to the triangulation, and 10-foot contours are drawn. Field work, computations and drawings, daily, for four and one-half weeks in the summer vacation, beginning June 7. Professor CRANDALL, Assistant Professors MCCAUSTLAND and BARNES and Messrs. LELAND, ——, —— and ——.

16. **Cartography.** Computations and reductions of the astronomical and geodetic data obtained on the Fall Creek survey in June, 1905, together with a map of the triangulation and topography, using 20-foot contours. Second half-year. Computations and drawing, six hours per week. Section *a*, W., 8–11, 2–4:30; section *b*, F., S., 8–11. Professor CRANDALL and Mr. LELAND, 23.

17. **Advanced Geodesy and Astronomy.** A special course of reading as may be arranged: *e. g.*, Helmert's Higher Geodesy, Chauvenet's Astronomy. Second half-year. Three hours per week, M., W., F., 11. Professor CRANDALL, 46.

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. Second half-year. Seven and one-half hours per week, as arrauged. Professor CRANDALL and Mr. LELAND, 9, 24.

Applied Mechanics and Hydraulics.

20. **Mechanics of Engineering.** For students in Civil Engineering and Sibley College courses. (N. B. No student is admitted to this course who has not successfully pursued University courses in analytic geometry and in the differential and integral calculus.) 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. (Toward the close of the year nearly three weeks are devoted by Civil Engineering students to curved beams, the theorem of three moments and the mechanics of reinforced concrete beams; while the Sibley College students take up hydrostatics and flotation during the same period.) Text-books: Church's Mechanics of Engineering, and Notes and Examples in Mechanics, supplemented by other printed notes and problems. Lectures and recitations, daily except S., throughout the year. Sections for Civil Engineering students: Sections *a* and *b*, at 10; section *c*, at 12 and 10; section *d*, at 12; section *e*, at 3. Sections for Sibley College students: Sections *f*, *g*, *h* and *i*, at 8; sections *j*, *k*, *l* and *m*, at 11; sections *n*, *o*, *p* and *q*, at 2. Professor CHURCH, Messrs. POND, BOOTHROYD, RIEGEL, BREEDLOVE, DAVIS, GEHRING, GEORGE, HOPKINS, SEERY and EKERN, 10, 24, 32. 34, 43, 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. Hours to be arranged. Assistant Professor MCCAUSTLAND, 46.

22. **Engineering Laboratory.** (Students must take course 20 simultaneously with this course unless they have already had the former.) 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 and Riehlé torsion machines; determination of their constants; and tests of specimens for the determination of shearing stresses and of the modulus of elasticity for shearing. 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; and also by the use of the mechanical integrator. Use of the Kew magnetometer. Determination of specific gravity, fineness, soundness, expansion, activity, time of set and strength, of cements. Study of sands. Studies of proportions and kinds of materials to be used in structures when cement is employed. Five hours per week until the Christmas vacation. Section *a*, M., W., 2–4:30; section *b*, T., Th., 2–4:30; section *c*, M., W., 8–10:30; section *d*, T., Th., 10–12:30; section *e*, F., S., 10–12:30. During January and the first half of the second term the time is increased to seven hours per week, and then reduced to an average of two hours per week for the remainder of the year. Professor CHURCH, Assistant Professor MCCAUSTLAND, Messrs. DAVIS, GEORGE, and HOPKINS, 8, 14, 15, 4.

23. **Hydraulics.** With topics in hydrostatics and pneumatics. (Must be preceded by course 20). 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 resistances of fluids. The Pelton water motor. Backwater. Overshot, breast, and undershot water wheels. Theorem for flow in a revolving pipe. Turbines and reaction wheels. Theory of turbine testing. Other hydraulic motors and machinery. Text-books: Church's Mechanics of Engineering; and Hydraulic Motors. First half-year. Lectures and recitations, daily except S. Sections *a* and *b*, at 8; section *c* at 12; section *d*, at 2; section *e*, at 3. Professor CHURCH, Messrs. ANDERSON, EKERN, and GEHRING, 34, 43.

25. **Materials of Construction.** This course embodies the study of the methods of manufacture of iron and steel, and of cement; the study of the physical and mechanical properties of all of the more important materials of construction and the methods of testing; an examination and comparison of the results of actual tests. The question of the determination of safe unit stresses for each class of material, and the data necessary for such determination will be constantly urged upon the attention of the student. Second half-year. Three hours per week. Section *a*, M., W., F., 9; section *b*, M., W., 10, F., 9; section *c*, T., Th., F., 9; section *d*, T., 11, Th., 2, S., 11; section *e*, T., Th., F., 12. Assistant Professors MCCAUSTLAND and JOHANNSEN, Mr. EKERN, and Mr. RIEGEL, 10, 32, 34, 43.

26. **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. First half-year. Three hours per week. M., W., F., 11. Professor CHURCH, 8.

29. **Engineering Problems.** The object of this course is to provide additional practice in using the principles and methods of Applied Mechanics, both of solids and fluids. A series of problems, such as occur in ordinary engineering practice, and covering a wide range of topics, is given out for solution. Second half-year. Computations and reports; six hours per week. Section *a*, M., 8–11, 2–4:30; section *b*, T., 8–11, 2–4:30; section *c*, Th., 8–11, 2–4:30. Professor CHURCH, Assistant Professor MCCAUSTLAND and Mr. ANDERSON, 23.

31. **Hydraulic Constructions.** The study of modern hydraulic constructions: Dams, reservoirs, conduits, levees, etc. Structures relating to water power canals and irrigation. Lectures, with collateral reading and reports. Preparation required: Courses 23 and 32. Second half-year. Three hours per week. M., W., F., 11. Mr. SEERY, 34.

[32. **Water Supply.** The design, construction, operation and management of municipal water supply systems. Lectures, reading and reports. Preparation required: Course 23. First half-year. Two hours per week. Assistant Professor ———.]

Experimental Hydraulics.

40. **Hydraulic Laboratory.** Experiments and written reports. The flow of water over weirs and through orifices and pipes. Logarithmic plotting of hydraulic data. Efficiency of water motors. Rating and use of current meters. Second half-year. Two and one-half hours per week. Section *a*, M., 8–10:30; section *b*, T., 8–10:30; section *c*, W., 8–10:30; section *d*, Th., 8–10:30; section *e*, F., 8–10:30; section *f*, S., 8–10:30; section *g*, M., 2–4:30; section *h*, T., 2–4:30; section *i*, Th., 2–4:30. Assistant Professor SCHODER and Messrs. ANDERSON, EKERN and GEHRING, 3.

41. **Experimental Hydraulics.** Practical problems in hydraulic measurements and reduction of data. Current meters and floats in open channels and streams. Weirs. Flow in pipes. The Venturi meter. Water meters. The Pitot tube. Turbines. Special problems and tests. First half-year. Three afternoons per week as arranged. Assistant Professor SCHODER.

[42. **Experimental Hydraulic Motors and Pumps.** The determination of efficiency, horse-power, and capacity of hydraulic machinery. Assistant Professor SCHODER. This course will not be offered in 1905–06.]

43. **Advanced Experimental Hydraulics.** The facilities of the hydraulic laboratory are available for thesis work and for experimental investigations by graduate students. Subject to special arrangements in each case. Assistant Professor SCHODER.

Municipal and Sanitary Engineering.

52. **Municipal Engineering.** (a) *Sewerage and sewage disposal.* A study of the design, construction and operation of sewer systems, together with the various methods of sewage disposal. Water purification. (b) *Roads and pavements.* Location and construction of broken-stone roads and of city pavements, their cost and economic value. Street cleaning and garbage disposal. Second half-year. Lectures and recitations, four hours per week. T., Th., S., 11; F., 12. Assistant Professor OGDEN.

54. **Design of Sewerage Works.** This course gives a detailed view of the field of sewerage design and construction, and more particularly of sewage disposal. Modern plants are described, fully illustrated with lantern slides, the principles involved as well as the relative efficacy of the treatment being considered. First half-year. Lectures, three hours per week. M., W., F., 11. Assistant Professor OGDEN, 46.

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 analysis, 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. First half-year. Seven and one-half hours per week. M., W., 2–5:45. Assistant Professor OGDEN, 2.

Water Supply. See Applied Mechanics and Hydraulics.

57. **Testing Materials.** Open only to students who have completed course 22 or its equivalent. Special work will be arranged for students electing this course, upon consultation with the professor in charge. Tests may be made upon full-sized sections in iron and steel; upon wooden columns, beams, and trusses; standard tests of paving brick and blocks; tests of road metal according to the standards of the Massachusetts Highway Commission; extended series of tests

upon cements, cement mixtures and concrete, with and without steel reinforcement; tests of brick piers. Marten's Testing of Materials and Johnson's Materials of Construction are used as reference works. First half-year. Seven and one-half hours per week. M., W., 2-5:45. Assistant Professor McCAUSTLAND and Mr. RIEGEL, 4, 10, 15.

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. 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; Beahan's Railway Location, and Gottshall's Electric Railway Economics form the basis of the work. First half-year. Recitations, lectures, field work and drawing, ten hours per week. Section *a*, M., W., 8–11; alternate, S., 8–6. Section *b*, T., Th., 9–12; alternate, S., 8–6. Second half-year. Lectures and recitations, three hours per week. Section *a*, M., 12, W., F., 9; sections *b* and *c*, M., W., F., 2; sections *d* and *e*, T., Th., S., 12. Drawing, nine hours per week for four weeks before the computations in bridge design begin, using the periods assigned for that work. Professor CRANDALL, Assistant Professor BARNES and Messrs. THOROUGHGOOD, McNOWN and BREEDLOVE, 34, 44, 45.

61. **Advanced Railroad Engineering.** This course is mainly along the line of operation and maintenance. The subjects treated are: Track work and accessory structures; improvement iu gradients and alinement; sorting yards; terminals; block signaling and interlocking; street and electric roads; rapid transit; and railroad management. First half-year. Reading, lectures, and recitations, three hours per week. 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 fram-

ing; 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 analysis 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 ten weeks. Lectures and recitations one hour per week. F., 9. Professor JACOBY. Computation and drawing, six hours per week. Sections *a* and *b*, M., 9–11, 2–4; W., 9–11; sections *c* and *d*, T., Th., 9–12. Professor JACOBY, Assistant Professor JOHANNSEN and Mr. DERICKSON, 26, 23.

Bridge Stresses. Analytic and graphic methods. Principal modern forms of simple trusses. Stresses due to dead, live and wind loads, initial tension, centrifugal load and impact. Panel loads, excess loads, axle loads, and equivalent uniform loads. Stresses in trusses, bracing and floors. Construction and use of moment diagrams. Text-books: Merriman and Jacoby's Roofs and Bridges, Parts I and II. First half-year. Recitations and lectures two hours per week for ten weeks and after that five hours per week. Sections *a* and *b*, T., Th., 8; section *c*, T., Th., 2; section *d*, T., Th., 3; section *e*, W., F., 2; section *f*, W., 3, F., 12. Professor JACOBY, Assistant Professor JOHANNSEN and Mr. DERICKSON, 44, 46.

Bridge design. Lectures and recitations on the design of plate girders, riveted and pin bridges. Details. Economic proportions. Analysis of weights. Complete computations and drawings 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. Computations and drawings, nine hours per week. Section *a*, M., T., 8–11, T., 2–4:30; section *b*, W., F., 8–11, W., 2–4:30; section *c*., Th., S., 8–11, Th., 2–4:30. During the first four weeks of the term, these exercises will be replaced by two recitations per week, the three hour periods being devoted to mapping in course 60. Hours for recitations to be arranged. Professor JACOBY, Assistant Professor JOHANNSEN, and Mr. DERICKSON, 26.

72. **Reinforced Concrete Arch.** Complete design of an arch of reinforced concrete construction, including its abutments and centering. Investigation of stresses. Determination of form and proportions. Lectures, computations, and drawing. Six hours per week. The course is given during each half-year. First half-year. Section

a, T., Th., 2–4:30; section *b*, F., 9–12; S., 8–11. Second half-year. Section *c*, M., T., 2–4:30. Professor JACOBY and Assistant Professor JOHANNSEN, 26, 31.

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. First half-year. Recitations, three hours per week. T., Th., S., 11. Professor JACOBY, 34.

74. **Masonry and Foundations.** Coffer dams, 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 Ordinary Foundations. 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. Second half-year. Recitations, lectures, collateral reading, and reports. Three hours per week. T., Th., S., 12. Professor JACOBY, 34.

[75. **Field Construction.** The erection of girder bridges and viaducts; of bridges on trestle falsework and on special supports; of cantilever bridges; of movably erected and suspension bridges; of steel buildings and of long span roof trusses. The framing and details of steel buildings. Equipment of tall buildings. Underpinning and reconstructing buildings. Moving and razing buildings and other structures. Foundations of buildings and of engineering structures. Second half-year. Lectures, one hour per week. Hours to be arranged. Non-resident lecturer. FRANK W. SKINNER.]

Testing Materials. See Municipal and Sanitary Engineering.

Mining Engineering.

80. **Principles of Mining.** A general course introductory to the subject of mining engineering. Prospecting, boring, shaft sinking and timbering. Location of plant and problems of hoisting, haulage and drainage. Development of deposits, systems of winning underground and at daylight. Text-book: Foster's Elements of Mining and Quarrying. First half-year. Recitations and lectures, three hours per week. M., W., F., 11. Assistant Professor MCCAUSTLAND, 44.

81. **Ventilation of Mines and Coal Mining.** Methods of mine ventilation. Theory of ventilation. Special problems under varying conditions. Text-book: Beard's Ventilation of Mines. Coal Mining. Occurrence of coal. Determination of character and extent of coal deposits. Methods of coal mining. Description and critical study of coal cutters, conveyors, coal breakers, washers and tipples. Preparation of coal for the market. First half year. Lectures, three honrs per week. T., Th., S., 11. Assistant Professor MCCAUSTLAND, 44.

82. **Metal Mining, Milling and Ore Dressing.** Brief sketch of mining law. Law of apex. Location of claims. Mine sampling and estimation of ore reserves. Milling and concentrating machinery. Crushers, stamp mills, amalgamators, vanners, jigs, and concentrators. Theory of concentration of values. Reference book: Richard's Ore Dressing. Second half-year. Lectures, three hours per week. M., W., F., 11. Assistant Professor MCCAUSTLAND, 44.

83. **Hydraulic and Dredge Mining.** Location of deposits suitable for hydraulic or dredge mining. Prospecting gravel deposits. Hydraulic plant. Duty of water. Gold saving devices. Construction and operation of mining dredges. Second half-year. Lectures, three hours per week. T., Th., S., 12. Assistant Professor MCCAUSTLAND, 46.

Design of Mine Plant. (See Engineering Design, course 91.) Tipples, ore bins, head frames, skips and cages, mine cars. Engine planes. Gravity planes. Rope haulage. Cornish pumps. Problems involving the design of portions of mine plant, requiring preparation of working drawings, together with bills of materials, specifications and estimates. Second half-year. Nine hours per week as arranged. Professor MCCAUSTLAND.

Specifications, Design and Thesis.

90. **Specifications and Contracts.** Synopsis of the law of contracts as applied to engineering construction. Study of typical contracts and specifications. Riparian rights, boundary lines, survey descriptions, etc. Johnson's Contracts and Specifications is used as a text, and Wait's Law of Operations in Engineering Construction as a reference book. Second half-year. Lectures and recitations two hours per week. Section *a*, M., W., 12; section *b*, T., Th., 12. Professor CRANDALL, 32.

91. **Engineering Design.** The student is required to make complete designs in one of the following sub-divisions: (a) Hydraulic Engineering; (b) Sanitary Engineering; (c) Railroad Engineering; (d) Bridge Engineering; (e) Mining Engineering. Second half-year. Computations, drawings, etc. Nine hours per week. Hours

to be arranged. Professors CRANDALL, CHURCH, JACOBY, OGDEN, and MCCAUSTLAND.

92. **Thesis.** The thesis is intended to demonstrate the ability of the student for independent investigation, or his capacity to apply the fundamental principles acquired in this course to the study of some special problem related to Civil Engineering. The latest date for announcing the subject which is to be approved by the Director of the College, is October 15. The plan of work should be submitted for approval to the professor having charge of the subject, to whom also regular reports are to be made, showing the progress of the investigation. The latest date for presenting the completed thesis is June 1.

Any student showing marked excellence in thesis work at the beginnning of the second term may claim the time assigned in the schedule to engineering design or to elective for more extended and complete work on snch thesis and he may be excused from engineering design or elective, in which case the thesis work must represent work equivalent to a credit of 5 hours and shall if accepted, be given credit for that amount.

Special and Graduate Courses.

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.

SIBLEY COLLEGE

OF MECHANICAL ENGINEERING AND THE MECHANIC ARTS.

FACULTY.

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

ALBERT WILLIAM SMITH, B.M.E., M.M.E., Director of the College, Dean of the Faculty, and Professor of Mechanical Engineering.

B.M.E., Cornell University, 1878; M.M.E., 1886. Machinist and Contractor, Brown, Sharpe Mfg. Co., Providence, R. I., 1879-80. Machinist and Foreman Straight Line Engine Co., Syracuse, N. Y., 1880-83. Superintendent Kingsford Foundry and Machine Works, Oswego, N. Y., 1883-80. Fellowship Cornell University, 1886-87. Assistant Professor Mechanical Engineering, Sibley College, Cornell University, 1887-91. Professor Machine Design, University of Wisconsin, 1891-92. Professor Mechanical Engineering, Leland Stanford Jr. University, 1892-04. Draughtsman and Designer, Dixon Mfg. Co., Scranton, Pa., 1898-99. Engineer with Westinghouse, Church, Kerr & Co., 1900-02. Engineer with Westinghouse, Church, Kerr & Co., 1903 (Summer),

JOHN LEWIS MORRIS, A.M., C.E., Sibley Professor of Mechanic Arts. Emeritus.

ROLLA CLINTON CARPENTER, M.S., C.E., M.M.E., Professor of Experimental Engineering.

C.E., University of Michigan, 1875; M.E., Michigan Agricultural College, 1877; M.M.E., Cornell University, 1888. Assistant Engineer D. & B. C. R.R., 1875-6. Professor of Mathematics and Engineering; Superintendent of Mechanical Construction, Michigan Agricultural College, 1876-90. Consulting Engineer, Lansing Iron Works, 1885-90. Professor of Experimental Engineering, Sibley College, Cornell University, 1890. Consulting Engineer, Ithaca Street Railroad, 1893. Consulting Engineer, Cortland Street Railroad, 1895. Consulting Engineer, Utica Belt Line R.R., Utica, N. Y., 1897. Consulting Engineer, Apple River Power Station, 1898. Consulting Engineer, Helderberg Cement Co., 1899. Consulting Engineer, Great Northern Portland Cement Co., 1900. Consulting Engineer, Cayuga Lake Portland Cement Co., 1901. Absent from University on leave: Consulting Engineer for Belleville Portland Cement Co., Toledo Portland Cement Co., Quaker Portland Cement Co., Mississippi Valley Portland Cement Co., Samuel Horner, Jr., Portland Cement Co., 1903.

HERBERT WADE HIBBARD, A.B., A.M., M.E., Professor of Mechanical Engineering of Railways.

A.B., Brown University, 1886; M.E., Cornell University, 1891; A.M., Brown University, 1899. In shops of Rhode Island Locomotive Works, 1886-89. Mechanical Department Pennsylvania R.R., 1891-94. Mechanical Department Lehigh Valley R.R., 1894-95. Assistant Professor Machine Design and Locomotive Engineering, University of Minnesota, 1895-98.

DEXTER SIMPSON KIMBALL, A.B., Professor of Machine Design.

A.B., Leland Stanford Jr. University, 1896. Served apprenticeship with Pope & Talbot, Port Gamble, Wash., 1881-87. Machine Shop, Union Iron Works, San Francisco, 1887-93. Drafting Room, Union Iron Works, San Francisco, 1896-98. Designing Engineer for Anaconda Mining Co., Montana, 1898 (Summer). Assistant Professor of Machine Design, Sibley College, Cornell University, 1898-01. Works Manager, Stanley Electric Mfg. Co., Pittsfield, Mass, 1901-04. 1904-1905, Professor Mechanic Arts, Sibley College, Cornell University.

HENRY HUTCHINSON NORRIS, M.E., Professor of Electrical Engineering.

M.E., Cornell University, 1896. Practical Work and Special Student, Johns Hopkins, Baltimore, 1890-92. Assistant Instructor in Electrical Engineering and had direct charge of Experimental Laboratory work covering all parts of electrical work, Johns Hopkins, Baltimore, 1892-94. Student in Sibley College, Cornell University, 1894-96. Instructor in Electrical Engineering, Sibley College, Cornell University, 1896-01. Assistant Professor of Electrical Engineering, Sibley College, Cornell University, 1901-03. Superintendent Electric Railway Test Commission, Universal Exposition, St. Louis, Mo., 1904. Special expert in connection with reorganization of American Street Railway Association 1905.

CARL CLAPP THOMAS, M.E., Professor of Marine Engineering.

M.E., Cornell University, 1895. Globe Iron Works Company, Engineers and Shipbuilders Draftsman, 1895-96; Assistant Engineer, 1896-97; Chief Engineer, 1897-98. Maryland Steel Company, Marine Department, Draftsman, 1898; Chief Draftsman, 1899-1901. New York University, 1901-03. Professor Marine Engineering and Naval Architecture. Consulting Engineer New York Construction and Dry Dock Co., 1902-03. Moran Bros., Shipbuilders, 1902; design of special marine machinery. University of California, 1903-4; Instructor, Marine Engineering.

GEORGE ROBERT McDERMOTT, Professor of Naval Architecture.

Graduated Andersonian Institute, Glasgow, 1878. Shops and Draughting Offices, 1880-82. Chief of Scientific and Designing Staff, 1884-86. Naval Architect and Assistant to Shipyard Manager, 1887-89. Clydebank Shipbuilding and Engineering Co. (John Brown & Co.), Clyde, Scotland. Naval Architect and Assistant to General Manager, Southampton Naval Works, England, 1890-91. Member of Technical Committee, U. S. Standard Registry of Shipping, 1895-1904. Designer of twin S. S. "Eastland," S. S. "Ravenscraig," and other important vessels on Great Lakes and coast.

HERMAN DIEDERICHS, M.E., Assistant Professor of Experimental Engineering.

M.E., Cornell University, 1897. Assistant in Mechanical Laboratory, Sibley College, Cornell University. 1897-98. Instructor in Mechanical Laboratory, Sibley College, Cornell University, 1898-02. Assistant Professor of Experimental Engineering, Sibley College, Cornell University, 1902. Consulting Engineering and work of investigation; Boiler Tests, Rochester, N. Y., 1901; Boiler Tests, New York City, 179th Street Station, 1904; Engine Tests. New York City, 1903; Engine Tests, New York City, 179th Street Station, 1904; Engine Tests, Brooklyn, Milburn Station, 1904; Investigation of Cold and Hot Rolled Steel. Jones & Laughlin, Pittsburg, Pa., 1902; Tests of Reeves Simple and Compound Engines, 1904.

WILLIAM NICHOLS BARNARD, M.E., Assistant Professor of Power Engineering.

M.E., Cornell University, 1897. Assistant and Instructor in Machine Design, Sibley College, Cornell University, 1897-1900. Designing high duty pumping engines, 1900. Chief Draughtsman and Mechanical Engineer, Russell Engine Co., 1900-03. Mem. Am. Soc. M.E.

WALTER RAUTENSTRAUCH, M.S., Assistant Professor of Machine Design.

B.S., University of Missouri, 1902. M.S., University of Maine, 1903, Jun. Am. Soc., Me. Practical work and Engineer with Standard Steel Car Co.. Pittsburg, Pa., 1901-02. Instructor University of Maine, 1902-03. Contracting work, 1903 (Summer). Instructor Machine Design, Sibley College, 1903-04.

VLADIMIR KARAPETOFF, C.E., Assistant Professor of Experimental Electrical Engineering.

C.E., Institute of Ways of Communication, Russia, 1897. Russian Government Engineer, 1897-99. Assistant to Professor of Hydraulics and Electrical Engineering, Ways of Communication Institute, 1897-99. Student in Electrotechnical Institute at Darmstadt and short apprenticeship courses in construction work with Laymayer Electric Co. and the Allgemeine Electricitats-Gesellschaft, Germany, 1899-1900. Russian Government Engineer andInstructor of Electrical Engineering at the following institutions: (a) Ways of Cummunication, (b) Electro-technical. (c) Polytechnic Institute of St. Petersburg, 1900-02. Conducted evening classes in Experimental Physics and Mechanics in a Free School of St. Petersburg, 1898-99 and 1900-01 (Winters). Assistant Professorship, Institute Ways of Communication, 1902. Apprenticeship Course with Westiughouse Electric and Mfg. Co., 1903-04. With Joint Westinghouse Cos., St. Louis, Mo., Louisiana Purchase Exposition, 1904.

GEORGE STANLEY MACOMBER, M,E.. Assistant Professor of Electrical Engineering. Absent on leave.

M.E., Cornell University, 1900. With Bell Telephone Co., Pittsburg, Pa., and Instructor in Physics and Electrical Engineering, Washington University, St. Louis, Mo., 1900-01. Instructor in Electrical Engineering 1902 to 1905. At present with Stromberg-Carlson Telephone Mfg. Co.

CLARENCE FLOYD HIRSHFELD, M.E.. Assistant Professor of Power Engineering.

B.S., University of California, 1902. Instructor Experimental Engineering Sibley College, Cornell University, 1903. Risdon Iron Works, San Francisco, 1899 (Summer). Risdon Iron Works Drafting Room, San Francisco, 1901-02 (Summers). Engineering Salesman, Chas. C Moore & Co., San Francisco, 1904.

HOWARD DRYSDALE HESS, M.E., Assistant Professor of Machine Design.

M.E., Lehigh University, 1896. Draftsman and Computer in Mechanical Department of Pencoyd Iron Works and American Bridge Co., 1897-1902. Mechanical Engineer for Eastern Steel Co., 1902-03. Instructor in Mechanical Engineering, Drexel Institute, 1903-04. Associate Professor of Mechanical Engineering, Universitv of Kansas, 1904-5.

C. FRANCIS HARDING, S.B., Acting Assistant Professor of Electrical Engineering.

S.B., Worcester Polytechnic Institute, 1902. With Testing department of the General Elect. Co., at Schenectady, N. Y., June to Sept. 1902. For two years Electrical Engineer of the Worcester & Southbridge St. Ry. Co., Worcester, Mass. For ten months Electrical Engineer for the D. & W. Fuse Co., Providence, R. I., and instructor in Electrical Engineering in Providence night school. More recently Mangr., Publication Dept., of the Fort Wayne Elect. Works, Fort Wayne, Ind.

JOHN S. REID, Instructor in Machine Design.

Special course, Irvine Academy, 1874-76. Apprentice in Riverside Engine Works, Kilmarnock, Scotland, 1876-80. Draughtsman, Patrick Engine Works, Glasgow, 1880-82. Hinckley Locomotive Works, Boston; Schenectady Locomotive Works, Schenectady, N. Y.; draughtsman in both places,

1882-83. Draughtsman for New York Locomotive Works, Rome, N. Y., 1883-87. Designer for New York Locomotive Works, Rome, N. Y., 1887-90. Instructor, Siblev College, Cornell University, Department Machine Design, 1891. Completed Summer course in Experimental Engineering at Sibley College, Cornell University, 1897.

EDGAR HARPER WOOD, M.M.E., Instructor in Machine Design.

M.E., Cornell University, 1892; M.M.E., Cornell University, 1893. Principal of the Dayton Manual Training School, 1895-99.

ROBERT LEE SHIPMAN, M.M.E., Instructor in Experimental Engineering.

HENRY LIVINGSTON FREEMAN, B.S., Instructor iu Machine Design.

B.S. in E.E., Georgia School of Technology, 1899. Practical w9rk with Lombard Iron Works, Worton Electrical Mfg. Co., and the Armour Fertilizer Works, 1898-1900. Adjunct Professor of Drawing, Georgia School of Technology, 1900-03.

VIRGIL OLDBERG, M.E., Instructor in Experimental Engineering.

CALVIN DOLGE ALBERT, M.E., Instructor in Experimental Engineering.

M.E., Cornell, 1902. With Columbia Iron Works, Shipbuilders, St. Clair, Mich., June, 1902, to Sept., 1903. Great Lakes Engineering Works, Detroit, Mich., Sept., 1903, to May, 1904. Olds Mobile Works, May, 1904, to June, 1904. Instructor in Experimental Engineering, Sibley College, Cornell University, Sept., 1904.

JOHN WHEELER, M.E., Instructor in Experimental Engineering.

With Westinghouse Electric & Mfg. Co., June—Sept., 1903. Instructor in Experimental Engineering, Sibley College, Cornell University, from September, 1903, to date.

WILL MILLER SAWDON, B.S. in M.E., Instructor in Experimental Engineering.

B.S. in M.E., Purdue University, 1898. Detroit School for Boys, Sept., 1898, to June, 1899. Cincinnati Shaper Co., June, 1899, to Sept., 1899. Assistant in Mechanical Engineering, Kansas State Agricultural College, Sept, 1899, to Oct., 1902: Assistant Professor of Mechanical Engineering, Armour Institute of Technology, Oct., 1902, to June, 1904; Instructor in Experimental Engineering, Sibley College, Cornell University, Sept., 1904.

GEORGE WHITMORE RICE, M.E., Instructor in Experimental Engineering.

M.E., Cornell University, 1903, and four summers of practical work.

ROLAND BORMAN RENNER, M.E., Instructor in Machine Design.

B.S. in E.E., Purdue University, 1902; M.E., Cornell University, 1904. Inspector of Installation Miller Signal Co., Chicago, 1902. Installed Steam Plants, Valentino Mfg. Co., Nashville, Tenn., 1903. Special Apprentice, Niles, Bement, Pond Co., 1904.

WALTER STEBBINS FORD, M.E., Instructor iu Experimental Electrical Engineering.

M.E., Cornell, 1900. With Johnson & Morton Electric Co., 1900-1904.

JOHN T. WILLIAMS, Instructor in Machine Design.

ALBERT WINFIELD STONE, M.E., Instructor in Machine Design.

M.E., Cornell, 1904.

BOYD COE DENNISON, M.E., Instructor in Experimental Electrical Engineering.

M.E., Cornell, 1904. G. E. Co., 1904-05.

SAMUEL RENWICK DODDS, E.E., Instructor in Experimental Electrical Engineering.

E.E., Western University of Pennsylvania, 1903. With P. & L. E. R.R. three years. With Westinghouse Elec. & Mfg. Co. two years. Member A. I. E.E.

GEORGE BURR UPTON, Instructor in Experimental Engineering.

M.E., Cornell, 1904; M.M.E., Cornell, 1905. With D. & H. R. R. Summer 1903. Sigma Xi

HARRY HAMILTON COCHRANE, B.S., Instructor in Experimental Electrical Engineering.

B.S., Trinity College, 1901. Engineer Union Electric Light & Power Co., 1901-1902. Electrician Stanley Instrument Co., 1902-1903. Instructor in Physics, Chief Draftsman F. G. Johnson Machine Co., 1903. Instructor in Physics, Cornell University, 1903-1905.

ALFRED ENGLERT, M.E., Instructor in Machine Design.

M.E., Cornell, 1900. With Deane Pump Co., Schenectady; Locomotive Works, Manhattan Elevated Co., New York, Alberger Condenser Co., Ledgerwood Mfg. Co., 1900-1904. Evening Instructor, Heffley Institute, Brooklyn, Sept., 1904 to date.

ROBERT JOSEPH McNITT, A.B., M.E., Instructor in Electrical Engineering.

Apprentice aud Journeyman with J. W. Blackford, 1894-1899. Lake Forest College, 1899-1900; A.B., Cornell University, 1902; M.E., Cornell, 1904. Special apprentice with Westinghouse Elec. & Mfg. Co., 1903. Member of Test Corps, Electric Railway Test Commission. Cooper Hewitt Elec. Co.

ALONZO MORRIS BUCK, Jr., M.E., Instructor in Electrical Engineering.

With D. L. & W. R. R., 1901. Apprentice with Westinghouse Electric & Mfg. Co., 1904. Designing Engineer with same Company, 1905.

RALPH NOYES ROBERTSON, S.B., M.E., Instructor in Experimental Electrical Engineering.

S.B., Colorado College, 1901; M.E.. Cornell University, 1905. The Excelsior Iron Works, Leadville, Colo., 1893-1896, Ibex Mine, 1897-8, The Excelsior Iron Works, Summer, 1899. Instructor in Physics, and Elementary Surveying, and Chief of Light, Heat, and Power service, Colorado College, 1901-2. Colorado Fuel & Iron Co., Summer, 1902.

LOUIS ILLMER, M.E., Instructor in Machine Design.

ALBERT EDWARD WELLS, Superintendent of Shops and Instructor in Machine Construction.

Served apprenticeship with Whitney Electric Instrument Co., Sherbrooke, Quebec, 1892-95. Shop Foreman and also in charge of outside erection, Stanley Electric Mfg. Co., Pittsfield, Mass., 1895-98. Superintendent Cunningham Engineering Co., Boston, 1898-1901. Superintendent Detail Department Stanley Electric Mfg. Co., Pittsfield, Mass., 1901-04.

JAMES EUGENE VANDERHOEF, Foreman in Foundry.

Apprentice with Ithaca Mfg. Works, Ithaca, N. Y,, 1871-1875. Foreman with Ithaca Mfg. Co., 1875-1877. Worked in Reynold & Lang's, Treman & King's and other foundries, 1877-1886. Foreman of Foundry, Cornell University, since 1886.

WILLIAM FREDERICK HEAD, Foreman in Forge Shop.

Apprentice with David McGibbons, Westport, Pa., 1873-74; with J. B. Hagadon, Union, N. Y., 1874-78. proprietor of smithshop, Cooper, N. Y., 1878-81: with Union Hardware Co., Union, N. Y., 1881-83; with Cortland Top and Rail Co., Cortland, N. Y., Foreman, 1883-89; Foreman Cortland Forging Co., 1889-91; Foreman E. D. Clapp Mfg. Co., Auburn, N. Y., 1891-92; with Ithaca Forging Co., Ithaca, N. Y., 1892-93; Assistant in Forge Shop, Cornell University, 1893-1901; Foreman of Forge Shop, Cornell University since 1901.

CLINTON BYRON BURKE, Foreman of Woodshop.

Assistant Foreman in charge of repairs, with J. Barker Mfg. Co., Pittsfield, Mass., 1886-89. General Woodwork, with E. B. Hume, Pittsfield, Mass., 1889-1894. Student, 1894-96. Pattern maker, Stanley Electrical Mfg. Co., Pittsfield, Mass., 1896-1904.

ROBERT VANDERHOEF, Assistant in Foundry.

Apprentice with Ithaca Agricultural Works, Ithaca, N. Y., 1872-76. Assistant to foreman with John O. Spencer Mfg. Co., Union Springs, N. Y., 1876-77. Foreman, Ithaca Mfg. Works, Ithaca, N. Y., 1877-83. With various manufacturing companies in Ithaca as foreman and in other capacities, 1883-87. In charge of Sibley College buildings and boiler plant, 1887-91. Assistant in Foundry, Cornell University, since 1891.

WALTER LISTON HEAD, Assistant in Forge Shop.

Apprentice with Cortland Forge Co., 1890-93; with Ithaca Forging Co., 1893-95; with J. B. Williams Drop Forge Co., Brooklyn, 1895-98; with McKay Dorntig Co., Buffalo, 1898-1900; Foreman Canadian Motor Cycle Co., 1900-01; with Ithaca Gun Co., 1901-02; Assistant in Forge Shop, Cornell University, since 1902.

RAYNOR EGBERT SEAMON, Assistant in Woodshop.

In Cornell University Repair and Construction Shop, 1894-1901. Assistant in Sibley College Pattern Shop, 1901-04.

WILLIAM TUDOR PRICE, Assistant in Machine Design.

FRANK A. LYNHAM, Assistant in Machine Shop.

Served apprenticeship with Montpelier & Wells River R.R., Montpelier, Vt., 1888-92. Stationary Engineer in various places, 1892-97. Chief Engineer, Consolidated Lighting Co., Montpelier, Vt., 1897-1900. Mechanician in Experimental Laboratory, Stanley Electric Mfg. Co., Pittsfield, Mass., 1900-04.

CHARLES ALBERT HINDMARSH, Assistant in Machine Shop.

Served apprenticeship with McGregor & Gourlay Galt, Ont., 1887-91. Toolmaker with E. W. Bliss Co., Brooklyn, N. Y., 1801-1892. Toolmaker with Raymond Sewing Machine Co., Guelph, Ont.. 1892-96. With Gould Bicycle Co., Brantford, Ont., 1896-1902. With Ithaca Gun Co., 1902-04.

FRANK HERBERT THOMPSON, Assistant in Wood Shop.

Served apprenticeship with American Ginning Co., Watertown, Me., 1893-97. Patternmaker with Carver Cotton Gin Co., East Bridgewater, Mass., 1897-1900. Salesman with American Ginning Co., Watertown, Me., 1900-03. Patternmaker with E. D. Jones Sons Co., Pittsfield, Mass., 1903-05.

HOWARD LEWIS ALLER, Assistant in Machine Design.

BIRDETTE NEWTON HOWE, Assistant in Machine Shop.

Served apprenticeship and machinist with Williams Bros., 1889-1902. Machinist with American Locomotive Co., Schnectady, 1902-03. Machinist with Lang & Button, Ithaca, N. Y., 1903-05.

HOWARD STANLEY BUSH, Assistant in Wood Shop.
GEORGE WASHINGTON RACE, Mechanician in Sibley College.
EDGAR WARREN GREGORY, Mechanician in Sibley College.
FRANCIS JOSEPH NELLIGAN, Stenographer for Director of Sibley College.
MARGARET ISABELLA COLQUHOUN, Clerk in Experimental Engineering.
CHARLES ALFRED CULLIGAN, Mechanician in Sibley College.

NON-RESIDENT LECTURERS, 1904-05.

D. B. RUSHMORE, Schenectady, N. Y., Design of Alternators.
F. A. HALSEY, New York City, Metric Fallacy.
CHARLES F. SCOTT, Pittsburg, Electrical Engineering and Engineers.
F. M. RITES, Ithaca, Inertia Governors.
WALTER C. KERR, New York City, Post Graduate Suggestions.
F. A. C. PERRINE, New York City, Water Power Installations.

GENERAL OUTLINE OF COURSES.

The Sibley College of Mechanical Engineering and Mechanic Arts receives its name from the late Hiram Sibley of Rochester, who between the years of 1870 and 1887 gave $180,000 toward its endowment and equipment. Mr. Hiram W. Sibley has added more than $130,000 for later constructions.

The College is organized to train men in the fundamental principles that underlie all mechanical engineering and to give such actual engineering work as may be possible in a technical school. A man must supplement a technical course by experience in practice and contact with life before he can attain his greatest power as an engineer, but an effort is being made in Sibley College to bring the student in contact with teachers fresh from practical experience so that he may become familiar with some of the methods used in modern practice for the solving of engineering problems. It is hoped thus to shorten somewhat the period of adjustment for the graduate when he begins practical engineering work.

The success of an engineer has come more and more to depend upon his ability to meet men of education and culture on equal terms, and since the work of the College is almost purely technical the student before entering upon it should have a thorough general education, and if possible, the training of a liberal college course.

The work of the first two years is common to all students in the College and includes work in pure Mathematics, Physics, Chemistry and Mechanics of Engineering, which are given in other departments of the University, together with the more technical work of the College itself. During the third year, and to a greater extent during the fourth year, opportunity is offered for specialization in different lines of Mechanical Engineering as indicated below.

Sibley College includes the following departments: 1. Mechanic Arts; 2. Machine Design; 3. Experimental Engineering; 4. Power Engineering; 5. Electrical Engineering; 6. Naval Architecture; 7. Marine Engineering; 8. Railway Mechanical Engineering. The work of these departments in outline is as follows:

1. **Department of Mechanic Arts.** The object of the instruction in the department is to familiarize the student with shop methods and processes and the workability of the materials used in engineering construction. The principles of manufacturing and duplication of parts are illustrated by carefully selected exercises while the administration of the shops is expected to give the student a general idea of modern methods of shop operation including time-keeping and pay systems.

In connection with the several courses listed below, suitable talks are given bearing on the extension of the above shop methods and processes to work of larger dimensions than can be illustrated with the college equipment.

Pattern Making. The course begins with a series of graded exercises in wood working designed to give the student familiarity with the tools of the trade and also to teach him to work from dimensioned drawings. These exercises are expected to give him manual skill sufficient to take up the elementary details of pattern making which follow and lead up to the making of complete patterns and core-boxes. Instruction is also given in large pattern work, sweep work, etc., the aim of the whole course being to not only develop manual skill but to also give the student a good working knowledge of the art of pattern making.

Foundry Work. In the foundry, instruction is given in molding, core-making, mixing of metals, operation of cupola, etc. Such operations as sweep work, etc., are illustrated by suitable working apparatus and the methods and appliances used in the art in large work are fully explained by the instructors in charge.

Forge Work. In the forge shop the student receives manual instruction in forging, tempering, welding, etc., both in iron and steel. The methods used in manufacturing, such as drop hammer work, are

illustrated and the application of the principles taught, to large work is fully discussed.

Machine Work. In the machine shop an effort is made not only to train the student manually and teach him correct shop practice, but also to instruct him in the principles of economical manufacturing. Carefully graded exercises are arranged to teach him the use of measuring instruments, hand tools and .then machine tools. Manufacturing methods are fully explained and illustrated by modern tools and appliances. The administration of this shop in particular is intended to illustrate as far as possible approved methods of shop operation and give the student a general idea of time keeping, piece work and premium plan, wage systems, etc.

The above instruction is given to a great extent in connection with the construction of commercial machines or parts of same.

2. **Department of Machine Design.** The work in this department begins with instruction and practice in the use of drawing instruments. During the same time the student receives instruction in descriptive geometry, so that by the time he has acquired proficiency in the use of instruments, he is ready to take up the elements of mechanical drawing, and apply the principles of descriptive geometry in making working drawings according to best modern practice in commercial drafting rooms. In the sophomore year the student is taught the principles of mechanism, the drawing room work being closely related to the class room instruction, and consisting of the solution of cams, gearing, linkages, etc., and concluding with the application of the principles discussed to the kinematic design of one or more machines. In the Junior year the student having received instruction in mechanics in the preceding year is ready for instruction in the mathematical side of machine desigu, and the concluding work of this year consists in the complete design of one or more machines, the student laying out the mechanism on the drawing board and making all calculations for strength and stiffness required for the complete design of the machine. The work of the Senior year is a more advanced discussion of the work of the Junior year, the student undertaking larger and more complex problems and receiving instruction in the principles of design as applied to manufacturing and the production of work in quantity. In the latter part of the year the student is allowed to elect his own problems, thus giving him a chance to specialize along the lines of his own inclination.

3. **Department of Experimental Engineering.** 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 meas-

uremeuts, 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, the standard system of gas and steam-engine and of steam-boiler trials. In the electrical section of the laboratories are covered the testing of electric generators, motors, transformers, and other apparatus. Methods of installing electric wires and of standardizing electrical instruments are among the features of this work.

Commercial testing of prime movers or materials is at times done at the University or elsewhere, and affords to such students as are prepared an opportunity for practical experience and investigation.

4. **Department of Power Engineering.** The object of the work of this department is to train the student in the methods of solution of problems involved in design of Heat Engines and auxiliary apparatus considered separately and in combination in Power Plants.

A preliminary course in steam machinery is given, which includes the study of elementary thermodynamics, and of different types of steam engines, steam generators and accessories.

More advanced courses are given which consider the problems involved in Power Plants, with special attention to economic factors.

In the senior year a more extended discussion is given of the principles of design as applied to the steam engine and gas engine. The student makes all calculations necessary for the design of the motor discussed together with complete working drawings.

5. **Department of Electrical Engineering.** The student at the beginning 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 third and fourth years comprises the study, under the direction of the Professor of Electrical Engineering, of the construction, the characteristics of operation and the design of electrical machinery.

The study includes that 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 and power plants, telephone and telegraph lines and cables, and to the general purposes of investigation. By the selection of certain optional courses the student may have special instruction in electric railways, in telephone engineering and in other electrical branches. In the electrical section of the laboratories of Sibley College a very

practical course is given under the joint direction of the departments of experimental and electrical engineering.

6. **The Department of Naval Architecture.** The work of the department has for its object, to provide a course of instruction and opportunities for research in the design, construction, and the propelling of vessels of all classes and types.

As a foundation for the work of the department, the student follows for the first two years the regular Sibley College courses in Mechanical Engineering. During the Junior year special work in Naval Architecture and Shipbuilding is introduced; this, together with a certain amount of work in the department of Marine Engineering, involves about one-third of the time of the year. In the Senior year the work is continued along the same lines to the extent of about one-half and three-fourths the time of the first and second terms respectively. A descriptive outline of the several divisions of the course will be found on page 431.

The undergraduate course is intended to give the student a thorough working knowledge of the fundamental principles underlying the science and a close acquaintanceship with the developments and present-day condition of the art of ship design and construction, so that on graduation he may be fitted to take up with business intelligence and usefulness the work as found in the shops and designing offices of the shipbuilding and naval dockyards of the country.

In the graduate course an opportunity is afforded for further advanced study, research and experiment along special lines relating to the strength, stability, oscillations, resistance, propulsion of vessels, screw propellers and other propelling agents, and at the same time broadening and strengthening the work of the undergraduate course. The methods of work of the graduate year are to a large extent individual, varying with the subject involved, and include directed courses of reading and study, special conferences with the professor, or courses of lectures dealing with the topics under examination.

An important division of the work of the Junior, Senior, and Graduate years consists of model experiments, carried out under the direction of the department, in the Experimental Tank, which is equipped with the latest dynamometric and other apparatus for the measurement of the resistance of planes, ship-shaped bodies, as also the efficiency of screw propellers and other propelling agents. This affords excellent opportunities for important experimental research work in solving the many hydro-dynamical problems encountered in designing vessels of all types.

7. **The Department of Marine Engineering.** This department

teaches the principles of operation and the design of the engines, boilers and auxiliary machinery used for propelling ships.

Actual working drawings are made by the student, based on his own calculations, and the work of marine machinery design is carried out, so far as possible, just as it is done in the engineering departments of shipyards. Courses of lectures are given in the Junior and Senior years upon the principles of design and construction of marine machinery, including fire-tube and water-tube boilers, steam engines, steam turbines and the general auxiliary equipment of steamships.

It is the object of the course to give students a working knowledge of marine engineering practice, and to equip them for working into responsible positions in connection with ship and engine building concerns.

Marine engineering stndents are required to take a considerable amount of work in the department of Naval Architecture and to do experimental tank research work. For detail of the courses, see page 432

8. **The Department of Railway Mechanical Engineering.**—The courses of this department have special relation to the designing, manufacture, service in operation, repairing, and the 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 Department so arranges its work, also, as to connect closely with the regular work of Sibley College. In the Junior year the Railway Club 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 Department. In

the senior railway year, about half the student's time is devoted to railway subjects. The graduate courses carry 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 Department, for developing character and self reliance, and for a better standing at the later entrance into permanent positions after graduation, cannot be overestimated.

Inspection trips, accompanied by the head of the Department 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. The shop guides are always from among the highest shop officials, and several lectures are given by such specialists in the course of the tour.

Graduate Work. In all departments advanced work is arranged to meet the special needs of graduate students.

Opportunities for Specialization. Students specially interested in the industrial applications of Physics and Chemistry or in the application of Geology and Civil Engineering to Mining may specialize in their senior year in the various courses given in the departments specified. See general outline of studies.

Degrees. Graduates of all departments of Sibley College are given the degree of Mechanical Engineer. If they have specialized in any department a certificate to that effect is also given signed by the head of the department and the Director of the College.

Special Students. Men at least twenty-one years of age who have had a considerable experience in some line of engineering work may be admitted as special students. They will need to have com-

pleted the mathematical preparation required of regular students, and may be held for examination in these subjects. No degrees are given to special students; but on fulfillment of all entrance requirements special students may become regular students and candidates for degrees.

Non-Resident Lecturers. Supplementing the regular course of instruction, lectures are delivered from time to time by specialists of the profession.

Persons desiring more information in regard to any subject connected with Sibley College should address the Director of Sibley College.

BUILDINGS AND EQUIPMENTS 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, and a building 50 × 70 feet devoted to electrical experimental engineering, besides several basements occupied by different branches of experimental work. A separate boiler house 30 feet × 40 feet contains the boilers for the use of the department of experimental engineering.

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. Beside 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.

A special museum building, 35 by 75 feet, has been erected for the Department 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. Here is located the Air Brake Instruction Rack and laboratory consisting of the full air brake equipment of locomotive, tender, passenger car (ordinary and "high speed") and 25 freight cars, and six cars' signal, all operated by compressed air from various types of air pumps and compressors.

The Workshops are fully equipped throughout with standard hand and machine tools from reputable makers, the machine tools having been selected with a view of not only giving manual instruction, but also to illustrate modern manufacturing methods. Many of the hand and machine tools are the product of the College shops.

The Sibley College Mechanical and Electrical Laboratories in charge of the department of experimental engineering contain the apparatus for demonstration and experimental research of Sibley College, in which instruction is given and investigation is conducted.

The Mechanical Engineering Section of the laboratory is 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 has facilities for testing the steam and hydraulic power plant employed in driving the machinery of the establishment, boiler testing plant and instruments; and with over 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. About thirty steam engines, air, oil and gas engines, fourteen dynamometers, ten 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 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 40,000 square feet and they 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 has also one Foster superheater; 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 fourteen 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 friction, and the testing of lubricants, including eight oil testing machines; and apparatus for the measurement of viscosity, and other physical properties of oil. 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 200,000 pounds capacity, and some twenty other machines ranging in capacity from 300,000 pounds to 50,000 pounds and adapted for the 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 aud other properties of cement.

The Electrical Section of the laboratories is fully supplied with modern apparatus for experimental lectures, laboratory practice, plant testing, standardizing of instruments and investigation. This apparatus has been selected primarily to exemplify modern shop tests and to familiarize the student with the practical apparatus as well as the theory of operation of electrical devices.

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 system of electric car control. The laboratory apparatus comprises a full complement of modern alternating and direct current machinery of all kinds. The alternating current equipment includes single and polyphase alternators and synchronous motors, induction motors, transformers and all apparatus auxiliary thereto. A large variety of direct current dynamos and motors suitably mounted for testing, cover the field of direct current machinery. 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 building, 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 testiug 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. 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 in the laboratories, the students may observe in operation a 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. The University has recently installed a modern hydro-electric plant containing large three-phase alternators direct driven by Doble inpulse water wheels. The power station also contains smaller units for direct current supply with all necessary auxiliary apparatus. This equipment is available for study.

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, covering tuition and fees in Sibley College, 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, N. Y. The holder shall pursue the regular course in Mechanical Engineering in Sibley College, and will be excused from the payment of tuition and the regular Sibley College fee.

This special undergraduate scholarship cannot be held in connection with a New York State scholarship.

REQUIREMENTS FOR ADMISSION.

Elementary Subjects. The following subjects are required for admission to all colleges of the University except the Veterinary College:

English.	Plane Geometry.
History.*	Elementary Algebra.

* One of the following: (1) American (including Civil Government), (2) English, (3) Ancient (to 814 A. D.), (4) Mediæval and Modern European (from 814 A. D.).

Advanced Subjects. In addition to the Elementary Subjects, an applicant must offer from the following list the advanced subjects required by the college to which he seeks admission. The figures following each subject indicate its relative weight:

Mathematics (6)
- Solid Geometry (2).
- Advanced Algebra (2).
- Plane Trigonometry } (2)
- Spher. Trigonometry }

German (12).
- Elementary German (6).
- Advanced German (6).

French (12).
- Elementary French (6).
- Advanced French (6).

Spanish (12).
- Elementary Spanish (6).
- Advanced Spanish (6).

Latin (18)
- Latin Grammar and Caesar (6).
- Latin Composition and Cicero (6).
- Virgil (6).

Greek (12).
- Greek Grammar and Xenophon (6).
- Greek Composition and Homer (6).

Physics (6).
Chemistry (6).
Botany (6).
Geology (6).
Zoology (6).
Drawing (6).

Drawing. The entrance requirement in drawing includes simple plane and solid geometrical figures, simple still life and groups or pieces of machinery, and a fair knowledge of the rules of perspective and light and shade as applied in freehand sketching. The preparation may also include the drawing of simple pieces of architectural ornament, decoration, and simple plant forms, etc. This requirement represents about 300 hours of actual work.

Applicants offering drawing for entrance must present samples of their work and a teacher's statement showing time and proficiency, but for the present, applicants who have passed the examination in drawing given by the College Entrance Examination Board or the Regents examination in advanced drawing will be credited with entrance drawing.

For admission to the Sibley College of Mechanical Engineering and the Mechanic Arts an applicant must offer the elementary subjects and also one (30 units) of the following groups of advanced subjects:

A. Mathematics (6); aud any two of the following languages: German (12), French (12), Spanish (12).

B. Mathematics (6); and German (12); and French (6) or Spanish (6); and any other 6 units from the advanced subjects.

C. Mathematics (6); and French (12); and German (6) or Spanish (6); and any other 6 units from the advanced subjects.

D. Mathematics (6); and German (12); and any 12 units in Latin.

[*For details as to subjects and methods of admission see pages 33–56.*

For admission to the freshman class and to advanced standing from other colleges and Universities, communications should be addressed to the Registrar. See pages 33–58.

For admission as specials, communications should be addressed to the Director of Sibley College. See pages 56 and 410.

For admission to graduate work and candidacy for advanced degrees, communications should be addressed to the Dean of the University Faculty. See pages 69 and 78.]

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. 425 to 434.

[For course to be pursued by sophomores, juniors and seniors, 1905–1906, see pages 420, 422 and 423].

Students entering in 1905–06 will take the following course. Students already matriculated will take courses as given on pp. 422 to 423. The letters and figures relate to the departments and courses in Sibley College as described on pp. 425 to 434.

Freshman Year.	No. of Course.		1st Term.	2nd Term.
Analytic Geometry		2	5	–
Differential Calculus		2	–	2
Integral Calculus		2	–	3
Chemistry		1	6 or 0	0 or 6
Physics		1	0 or 4	4 or 0
Physics		5	0 or 2	2 or 0
Descriptive Geometry	C.E.	9	2 or 0	0 or 2
Drawing	M.D.	1	3 or 0	0 or 3
Pattern making	M.A.	1	0 or 4	4 or 0
Shop methods	M.A.	2	0 or 1	1 or 0
Military Drill			1	1

Sophomore Year.	No. of Course.		1st Term.	2nd Term.
Mechanics of Engineering	C.E.	20	5	5
Physical Laboratory	8 and	14	3	3
Chemistry		6	0 or 5	5 or 0
Kinematics	M.D.	6	2 or 0	0 or 2
Drawing	M.D	5	5 or 0	0 or 5
Materials	X.E.	5	2 or 0	0 or 2
Foundry	M.A.	5	0 or 2	2 or 0
Forge	M.A.	6	0 or 2	2 or 0

In addition to the above three actual hours per week of either Military Drill or Physical Culture must be taken.

Junior Year.	No. of Course.	1st Term.	2nd Term.
Steam Machinery	P.E. 10	2	2
Electrical Engineering Lab.	E.X.E. 10	2	2
Electrical Machinery	E.E. 10	2	2
Machine Design			
(a) Lectures and recitations	M.D. 16	3	3
(b) Drawing	M.D. 10	2	2
Mechanical Laboratory	X.E. 11	3	3
Machine Work	M.A. 10	2	2
Principles of Manufacturing	M.A. 11	0	2
Hydraulics	C.E.	2	0

(1) Students specializing in Naval Architecture and Marine Engineering must substitute in the Junior year the subjects as given in the detail of those courses.

(2) Students intending to specialize during their Senior year in Physics may substitute an equivalent amount of Physics.

Senior Year.	No. of Course.	1st Term.	2nd Term.
Steam Engineering	P.E. 20	5	2
Mechanical Laboratory	X.E. 20	3	1
Elective Physical Training or any other subject approved by Sibley Faculty		2	2
Thesis or elective studies as approved by Sibley Faculty (maximum)		0	8

In addition to the above each student in his Senior year must complete *one* of the following groups of studies A—I:

A. Mechanical Engineering.

	No. of Course.	1st Term.	2nd Term.
Steam Machinery Design	P.E. 21	3	3
Designing and Drawing	P.E. 22	3	3
Machinery and Machine Tools		2	0
Elective (see below)		1	2

B. Mechanical Engineering.

	No. of Course.	1st Term.	2nd Term.
Machinery and Machine Tools	M.D. 22	2	1
Designing and Drawing	M.D. 23	3	3
Steam Machinery Design		3	0
Elective (see below)		1	4

Elective Studies in Mechanical Engineering.	No. of Course.	1st Term.	2nd Term.
Power Plant Installation	X.E. 21	1	1
Engine Handling	X.E. 23	0	1
Engineering Research	X.E. 22	3	3
Internal Combustion Motors	X.E. 24	0	2
Physical, Chemical or Electrical Lab.		3	0
Works Administration	M.A. 20	0	2
Pumping Machinery	P.E. 24	0	3
Heating and Ventilating	X.E. 25	0	2

C. Electrical Engineering.

Electrical Engineering Laboratory	E.X.E. 28	4	4
Electrical Engineering	E.E. 20	2	2
Electrical Engineering	E.E. 21	2	1

D. Naval Architecture.

	No. of Course.	1st Term.	2nd Term.
Ship Design and Construction	N.A. 20	3	3
Naval Architecture	N.A. 21	2	2
Propelling Machinery and Equip.	MAR.E. 20	3	2
Steam Turbines	MAR.E. 21	0	2
Experimental Tank	N.X.E. 26	0	1
Specifications, Contracts and Cost Systems	N.A. 22	0	1
Seminary	N.A. 23	1	0

E. Marine Engineering.

	No. of Course.	1st Term.	2nd Term.
Propelling Machinery and Equip.	MAR.E. 20	6	4
Steam Turbines	MAR.E. 21	0	2
Naval Architecture	N.A. 21	1	2
Experimental Tank	N.X.E. 26	0	1
Specifications, Contracts and Cost Systems	N.A. 22	0	1
Seminary	MAR.E. 22	1	0

F. Railway Mechanical Engineering.

	No. of Course.	1st Term.	2nd Term.
Railway Machinery	R. 20	4	4
Designing	R. 21	4	0
Railway Club (elective 2nd term)	R. 22	1	(1)
Locomotive Testing (elective)	R. 23	(1)	0
Electric Railways	E.E. 25	0	2
Electives : Lectures, Designing	R. 30, 31	-	-

G. Applied Physics.

	No. of Course.	1st Term.	2nd Term.
Alternating Currents	Physics 33	2	0
Electrical Measurements	Physics 34	3	3
Physics of Trans. of Intelligence	Physics 41	1	0
Elective as approved by Sibley Faculty		3	3

H. Chemical Engineering.

	1st Term.	2nd Term.
Courses as arranged for with Dept of Chemistry	9	6

I. Mining Engineering.

	1st Term.	2nd Term.
Geology and Mineralogy	4	3
Chemistry and Metallurgy	5	3

The following courses are to be taken 1905–06 by students matriculated before Sept., '06.

Regular Course for Mechanical Engineers.

Sophomore Year, Class 1908.	No. Course.	1st Term.	2d Term.
Mechanics	C.E. 20	5	5
Physics	1	4 or 0	0 or 4
Physics	5	2 or 0	0 or 2
Chemistry	6	0 or 5	5 or 0
Kinematics	M.D. 6	0 or 2	2 or 0
Drawing	M.D. 5	0 or 3	3 or 0
Materials of Engineering	X.E. 8	2 or 0	0 or 2
Descriptive Geometry	C.E. 9	0 or 2	2 or 0
Foundry Work	M.A. 5	2 or 0	0 or 2
Forge Work	M.A. 6	2 or 0	0 or 2
Junior Year, Class 1907.	No. Course.	1st Term.	2d Term.
Steam Machinery	P.E. 10	0	4
Electrical Machinery	E.E. 11	4	0
Machine Design :			
(a) Lectures and Recitations	M.D. 16	3	3
(b) Drawing	M.D. 10	2	2
Mechanical Laboratory	X.E. 11	2	2
Mechanical Laboratory	X.E. 11a	1	1
Physical Laboratory	Physics 14	2	2
Materials of Engineering	X.E. 10	0 or 2	2 or 0
Machine Work	M.A. 10	2	2
Principles of Manufacturing	M.A. 11	1	1

Students specializing in Naval Architecture or Marine Engineering must substitute in the Junior year the subjects as given in the detail of those courses.

Group A.

Senior Year, Class 1906.	No.	Course.	1st Term.	2d Term.
Power Engineering	P.E.	20	5	2
Mechanical Laboratory	X.E.	20	2	1
Mechanical Laboratory	X.E.	20a rect.	1	0
Electrical Engineering Laboratory	E.X.E.	29	2 or 0	0 or 2
Steam Machinery Design	P E.	21	3	3
Designing and Drawing	P.E.	22	3	3
Thesis or elective as approved			0	6 – 8
Elective, physical training or any other elective as approved by Sibley Faculty			2	-

Group B.

	No.	Course.	1st Term.	2d Term.
Power Engineering	P.E.	20	5	2
Mechanical Laboratory	X.E.	20	2	1
Mechanical Laboratory	X.E.	20a	1	0
Electrical Engineering Laboratory	E.X.E.	29	2 or 0	0 or 2
Machinery and Machine Tools	M.D.	22	2	2
Drawing and Designing	M.D.	23	3	3
Thesis or elective as approved			0	7 – 9
Elective, physical training or any other elective as approved by Sibley Faculty			2	–

Electives in Mechanical Engineering.

	No.	Course.	1st Term.	2d Term.
Power Plant Installation	X.E.	21	1	1
Engine Handling	X.E.	23	0	1
Engineering Research	X.E.	22	3	3
Internal Combustion Motors	X.E.	24	0	2
Physical, Chemical or Elect. Lab.			3	–
Works Administration	M.A.	20	–	2
Pumping Machinery	S.E.	24	–	3

Course in Electrical Engineering.

The freshman and sophomore years are identical with course in Mechanical Engineering, in the junior year some difference occurs, and in the senior year laboratory work is increased, and advanced electrical engineering introduced.

Junior Year, Class 1907.	No.	Course.	1st Term.	2d Term.
Steam Machinery	P.E.	10	4	–
Electrical Machinery	E.E.	10	–	4
Materials of Engineering	X.E.	10	2	–
Physical Laboratory	Physics	14	2	2
Mechanical Laboratory	X.E.	11	3	3
Shopwork	M.A.	10	2	2
Principles of Manufacturing	M.A.	11	1	1
Machine Design:				
(a) Lectures and Recitations	M.D.	16	3	3
(b) Drawing	M.D.	10	2	2

Senior Year, Class 1906.	No.	Course.	1st Term.	2d Term.
Electrical Engineering Laboratory	E.X.E.	28	4	4
Steam Engineering	P.E.	20	5	2
Mechanical Laboratory	X.E.	20	2	1
Mechanical Laboratory	X.E.	20a	1	–
Electrical Engineering Practice	E.E.	20	2	2
Electrical Engineering	E.E.	21	2	1
Thesis, or equivalent in optional courses 22, 23 and 26			–	8
Elective, physical training or any other subject by approval of Faculty			2	2

Course in 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 Marine Engineering.

Junior Year, Class 1907.	No.	Course.	1st Term.	2d Term.
Steam Machinery	P.E.	10	–	4
Electrical Machinery	E.E.	11	2	–
Machine Design (Lect. and recitations)	M.D.	16	3	3
Mechanical Laboratory	X.E.	11	2	2
Mechanical Laboratory	X.E.	11a	1	1
Machine Work	M.A.	10	2	2
Principles of Manufacturing	M.A.	11	1	1
Materials of Engineering	X.E.	10	2	–
Marine Boilers and Aux. Machinery	Mar.E.	10	2	1
Ship Design and Construction	N.A.	10	3	3
Naval Architecture	N.A.	11	1	2

Senior Year, Class 1906.	No.	Course.	1st Term.	2d Term.
Steam Engineering	P.E.	20	5	2
Mechanical Laboratory	X.E.	20	2	1
Mechanical Laboratory	X.E.	20a	1	0
Electrical Machinery	E.E.	11	2	–
Electrical Engineering Laboratory	E.X.E.	29	–	2
Propelling Machinery and Equipt.	Mar.E.	20	3	2
Steam Turbines	Mar.E.	21	–	2
Ship Design and Construction	N.A.	20	3	3
Naval Architecture	N.A.	21	2	2
Experimental Tank	N.X.E.	26	–	1
Specifications, Contracts, Cost-systems	N.A.	22	–	1
Thesis or Advanced Work in Course			–	4
Elective, Physical Culture or other subject, on approval of Faculty			2	–

Course in Marine Engineering.

The freshman and Sophomore years are identical with the course in Mechanical Engineering. In the junior year changes are made in order to begin introductory courses in Marine Engineeriug and Naval Architecture.

Junior Year, Class 1907.	No.	Course.	1st Term.	2d Term.
Steam Machinery	P.E.	10	–	4
Electrical Machinery	E.E.	11	2	–
Machine Design (Lect. and Recitations)	M.D.	16	3	3
Mechanical Laboratory	X.E.	11	2	2
Mechanical Laboratory	X.E.	11a	1	1
Machine Work	M.A.	10	2	2
Principles of Manufacturing	M.A.	11	1	1
Materials of Engineering	X.E.	10	2	–
Ship Design and Construction	N.A.	10	3	1
Naval Architecture	N.A.	11	1	2
Mar. Boilers and Aux. Machinery	MAR.E.	10	2	2

Senior Year, Class 1906.	No.	Course.	1st Term.	2d Term.
Steam Engineering	P.E.	20	5	2
Mechanical Laboratory	X.E.	20	2	1
Mechanical Laboratory	X.E.	20a	1	–
Electrical Machinery	E.E.	11	2	–
Electrical Engineering Laboratory	E.X.E.	29	–	2
Naval Architecture	N.A.	21	1	2
Experimental Tank	N.X.E.	29	–	1
Specifications, Contracts, Cost-Systems	N.A.	22	–	1
Propelling Machinery and Equipt.	MAR.E.	20	6	4
Steam Turbines	MAR.E.	21	–	2
Thesis, or Adv. Work in Course		—	–	4
Elective, Phys. Culture or other Subject, on approval of Faculty		—	2	–

Course in Railway Mechanical Engineering.

The freshman, sophomore and junior years may be identical with the regular course in Mechanical Engineering; but, preferably, sophomores should make request for locomotive details in their Mechanical Drawing, M.D. 5; and juniors, in order to obtain time for more advanced work in their senior year, should add senior electives as below.

Railway courses may be elected separately by seniors in other departments or by juniors who may have the proper preparation and time.

Summer Vacation.	No. Course.	Time.
Locomotive Shopwork (advised)	R. 10	3 months.

Junior Year, Class 1907.

Regular course in Mechanical Engineering, *with advised addition of electives in Railway Club (both terms), Locomotive Testing (1st term), Railway Designing (2d term).*

Senior Year, Class 1906.	No. Course.	1st Term.	2d Term.
Railway Machinery	R. 20	4	4
Designing	R 21	3	1
Railway Club (elective 2d term)	R. 22	1	(1)
Locomotive Testing (elective)	R. 23	(1)	-
Electric Railways	E E. 25	-	2
Thesis, or electives R. 30 *and* 31, or selections from the electives suggested by the Department		-	8
Steam Engineering	P.E. 20	5	2
Mechanical Laboratory	X.E. 20	2	1
Mechanical Laboratory	X.E. 20a	1	-
Electrical Engineering Laboratory	E.X.E. 29	2	-
Elective, Physical Training or any other subject by approval of Faculty		2	2

Applied Physics.

Students wishing to take special work in Physics with reference to engineering may elect the following course:

Junior Year, Class 1907.	No. Course.	1st Term.	2d Term.
Magnetism of Iron and A C. measurements (optional. See note 2d page 418) (Not given in 1905–06.)	Physics 30	2	2

Senior Year, Class 1906.	No.	Course.	1st Term.	2d Term.
Steam Engineering	P.E.	20	5	2
Mechanical Laboratory	X.E.	20	2	1
Mechanical Laboratory	X.E.	20a	1	0
Alternating Currents	Physics	33	2	–
Electrical Measurements	Physics	34	3	3
Physics of Transmission of Intelligence	Physics	41	1	–
Thesis, or elective subjects as approved by Sibley Faculty, maximum			–	8
Electives as approved at Sibley College			3	3
Elective, Physical Training or any subject approved by Sibley Faculty			2	2

Courses of Instructions.

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 "

About 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.

Those electing theses must submit their subjects for the approval of the Thesis Committee not later than the Christmas recess, and the theses in complete form must be handed in not later than the 15th of May following.

Department of Mechanic Arts. (M.A.)

Under the direction of Professor Kimball. Mr. Wells, Superintendent of Shops.

1. **Pattern Making.** Use of wood-working tools; elements of pattern making. Two hours. Daily, 8–11, 11–2, 2–5 as assigned. Messrs. BURKE, SEAMAN and THOMPSON.

2. **Shop Methods.** Lectures. One hour for one term. Discussion of shop methods, pattern making, moulding with reference to modern methods of manufacturing. S., 11. Professor KIMBALL and Mr. BURKE.

5. **Foundry Work.** Moulding, casting, mixing of metals, operation of furnaces, etc. Two hours. Daily as assigned, 8–11, 11–2, 2–5. Messrs. J. E. and R. VANDERHOEF.

6. **Forge Work.** Forging, welding, tool dressing, tempering, etc. Two hours. Daily as assigned, 8–11, 11–2, 2–5. Messrs. W. H. and W. L. HEAD.

10. **Machine Work.** Use of measuring tools, hand and machine tools, fitting and assembling. Two hours per term. Daily as assigned 8–11, 11–2, 2–5. Messrs. WELLS, LYNHAM and HINDMARSH, and HOWE.

11. **Principles of Manufacturing.** Must be taken in connection with course 10. Theory of measuring and other shop tools, elementary theory of manufacturing; cost and time keeping systems, etc. One hour per term. Professor KIMBALL and Mr. WELLS.

Department of Machine Design. (M.D.)

Under the direction of Professor Kimball.

1. **Drawing.** Freshmen. Nine hours per week for one term. Three hours credit. Either first or second term as assigned. Use of drawing instruments, machine sketching, lettering dimensioning, elements of projection. Assistant Professor RAUTENSTRAUCH, Messrs. REID, WILLIAMS and CAPRON.

5. **Kinematic Drawing.** Sophomores. Taken in connection with M.D. 6, either term as assigned. Nine hours per week for one term. Three hours credit. M., W., F., 8–11; M., T., Th., 2–5; T., Th., 2–5, S., 10–1; as assigned. Assistant Professor HESS, Messrs. WOOD, PRICE and ALLER.

6. **Kinematics.** Requires course C.E., 9. Sophomores. Taken in connection with M.D. 5. Two recitations per week for one term. Two hours credit. Recitations, M., W., 9; or M., W., 10; or M., W., 12, as assigned. Lecture S., 8, when required. Assistant Professor HESS, Messrs. WOOD, PRICE and ALLER.

(In 1905-6 the Juniors will take their Kinematics in connection with Course M.D. 16.)

10. **Drawing and Designing.** Juniors. Six hours per week.

Two hours credit. Must be taken in connection with course M.D. 16. Kinematic drawing, valve gears and machine design. Sections W., F., 8–11; Th., S., 8–11; M., W., 2–5; T., Th., 2–5. Assistant Professor RAUTENSTRAUCH, Messrs. FREEMAN, STONE, RENNER, and ENGLERT.

[11. **Kinematics.** Juniors. Three recitations per week, first term to Thanksgiving recess. Two hours credit. Superceded by M.D. 6.]

[12. **Machine Elements.** Juniors. Three hours credit. Two lectures and one recitation. Second term. Now included iu M.D. 16.]

[14. **Stresses in Machines.** Juniors. One hour credit. First term after Thanksgiving recess. Now included in M.D. 16.]

16. **Machine Design.** Requires Course C.E. 20. Juniors. Three hours credit both terms. One lecture and two recitations per week. Sections as assigned. Lectures, M., 9, or T., 9; recitations, M., W., 10: M., W., 12; M., Th., 11; M., 8, Th., 12; M., 9, F., 10; T., Th., 8; T., 10, F., 11; T.. F., 12; W., F., 9; W., 11; S., 12; Th., 10, S.. 9. Assistant Professor RAUTENSTRAUCH and Messrs. FREEMAN, STONE, RENNER, and ENGLERT.

22. **Machinery and Machine Tools.** Requires courses M.D. 10, and 16. Seniors. Two hours both terms. Lectures, T., Th., 12. Assistant Professor HESS.

23. **Designing and Drawing.** Requires courses M.D. 10, 16 and P.E. 10. Seniors. Credit, three hours, both terms. Designing of machine tools, transmission and hoisting machinery, etc. Must be accompanied by course M.D. 22. Drawing as assigned. Professor KIMBALL, Assistant Professor HESS and Mr. ILLMER.

30. **Advanced Designing.** Requires courses M.D. 22 and 23. Professor KIMBALL, Assistant Professor HESS.

NOTE.—Students who have not taken courses M.D. 22 and 23 in the first term will not be registered for the continuance of these courses in the second term.

Department of Experimental Engineering. [X.E.]

10. **Materials of Engineering.** Juniors and Sophomores. Two hours. First term. Lectures. F. and S., 10, F. and S., 12. Professor CARPENTER, Assistant Professor DIEDERICHS.

11. **Mechanical Laboratory.** Two hours each term. Credit made up as follows: 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 guages, weirs, and meters; oil testing, flue gas analysis, calorimetry, ther-

mometer calibration, valve setting and indicator practice; test of durability of lubricants, efficiency tests, water motors, centrifugal pumps, gas engines, injectors, steam pumps, electrical apparatus, and indicator practice. Daily except Sat., 2-5 and Sat., 8-11. Professor CARPENTER, Assistant Professor DIEDERICHS, and Messrs. WHEELER, SAWDON, UPTON and RICE.

11a. One hour recitations on Laboratory Practice. Juniors. One hour per week as assigned for same periods as course 11.

20. **Mechanical Laboratory.** Two hours first term. One hour second term. 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. Seniors. 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, electrical apparatus. Daily except Sat., 2-5 and Sat., 8-11. Professor CARPENTER, Assistant Professor DIEDERICHS, and Messrs. SHIPMAN, OLDBERG, ALBERT and ROBERTSON.

20a. **Recitations on Laboratory Practice and Problems.** Seniors. One hour per week for the same period as course 20.

21. **Power Plant Installation and Operation.** Elective. Seniors and Graduates. Lectures. Credit one hour. Professor CARPENTER.

22. **Special Research and Commercial Tests.** Elective. Juniors, Seniors and Graduates. Laboratory practice as assigned. Professor CARPENTER and Assistant Professor DIEDERICHS.

23. **Operation of Engines.** Elective. Seniors. One hour second term beginning at Easter recess. Starting, stopping, adjustment, lubrication, and all problems connected with the practical operation of steam engines, gas engines and air compressors. Hours as assigned. Professor CARPENTER, Assistant Professor DIEDERICHS, and Mr. SHIPMAN.

24. **Internal Combustion Motors.** Elective. Seniors and Graduates. Two hours second term. Lectures. Theory and design of internal combustion motors with special reference to the practical problems involved. Assistant Professor DIEDERICHS.

25. **Heating and Ventilation.** Elective. Seniors and Graduates. Two hours second term. Lectures. Professor CARPENTER.

N.X.E. 26. **Ship Resistance and Propeller Experiments.** Re-

quired of Seniors in Naval Architecture and Marine Engineering. Experimental work as assigned. Credit one hour, second term after Easter. Professors CARPENTER, MCDERMOTT and Mr. ALBERT.

(**E.X.E.**) 28 **Electrical Engineering Laboratory.** Seniors in electrical engineering. Four hours, first and second terms. Credit made up as follows: two hours for laboratory periods, one hour for one recitation and one hour for preparation of report in addition to the work done thereon under Course 21. M., W., F., 8-11; M, T., W., Th., F., 2-5. Professors CARPENTER and Assistant Professor KARAPETOFF and Messrs. FORD, COCHRANE, DENNISON and DODDS.

(**E.X.E.**) 29. (1905-6 only). **Electrical Engineering Laboratory.** Seniors in mechanical engineering. Two hours, first or second term. Credit made up as follows: one hour for one laboratory experiment and one hour for one recitation per week. M., T., W., Th., F., 2-5. Professor CARPENTER, Assistant Professor KARAPETOFF and Messrs. FORD, COCHRANE, DENNISON and DODDS.

Department of Power Engineering. [P.E.]

10. **Steam Machinery.** Juniors. First term for E.E., second term for M.E. and C.E. Four hours credit for one term. Three lectures, T., Th., S., 11. One recitation as assigned, W., 11-12, Th., 10, F., 9. 11, 12. Assistant Professor HIRSHFELD.

20. **Steam Engineering.** Seniors. Theory of steam and other heat engines and treatment of the economic design of Power Plants Five hours first term, two hours second term. Lectures, daily except S., 11, until Easter recess. Professor SMITH.

21. **Steam Machinery Design.** Requires courses M.D., 10, 11, 12, 14, and S.E. 10. Seniors. Three hours, both terms. Lectures M., W., F., 12. Assistant Professor BARNARD and Mr. ILLMER.

22. **Designing and Drawing.** Requires courses M.D. 10, 11, 12, 14, and S.E. 10. Seniors. Credit, three hours. Both terms Design of engines, boilers, steam plants, etc. Must be accompanied by S.E. 21. Nine hours drawing as assigned. Assistant Professor BARNARD and Mr. ILLMER.

24. **Pumping Machinery.** Seniors. Elective. Lectures, daily except S., 11, from Easter till close of second term. Three hours credit. Professor SMITH.

30. **Advanced Steam Machinery Design.** Elective. Requires courses S.E. 20, 21 and 22. Work, hours and credit as arranged. Assistant Professor BARNARD.

Department of Electrical Engineering. (E.E.)

10. **Electrical Machinery.** Juniors in electrical engineering. Four hours, second term. Recitations in four sections as follows:

T., 8; Th., 8; S., 11; M., 10; T., 11; F., 8; W., 8; Th., 12; S., 8; T., 10; W., 11; F., 9. One lecture per week on electrical laboratory practice, M., 8. Professor NORRIS, Assistant Professor KARAPETOFF and Mr. MCNITT.

11. **Elements of Electrical Engineering.** Juniors in mechanical and marine engineering and seniors in civil engineering and naval architecture. Four hours, first term. Lectures, M., W., F., 8; one recitation in sections as follows: M., 10, 11, 12; T., 8, 9, 10, 12; W., 9, 10; Th., 10; F., 9, 10. Professor NORRIS and Mr. MCNITT.

20. **Electrical Engineering Practice.** Seniors in electrical engineering. Requires E.E., 10, C.E., 20 and junior physics. Two hours, first and second terms. Lectures, T. and Th., 9. Professor NORRIS.

21. **Electrical Engineering.** Seniors in electrical engineering. Two hours, first term, one hour, second term. Class room exercises in structural details, performance characteristics, and other electrical problems. Sections as assigned. M., W., F., 8–10; M., T., W., Th., F., 2–5. Assistant Professor HARDING and Mr. BUCK.

22. **Design of Electrical Machinery.** Requires E.E. 20 and 21, (first term). Seniors in electrical engineering may elect four hours in this course in place of a corresponding number of hours of thesis work. This will be the only course in electrical machinery design. Second term, sections as arranged. M., W., F., 8–11; M T., W., Th., F., 2–5. Mr. BUCK.

23. **Generation and Distribution of Electrical Energy.** Requires E.E. 20 and 21, (first term). Seniors in electrical engineering may elect four hours in this course in place of a corresponding number of hours of thesis work. Lectures, recitations and designing. Second term, lectures, recitations, T., Th., 10. Design sections as arranged. M., W., F., 8–11; M., T., W., Th., F., 2–5. Assistant Professor HARDING.

25. **Elements of Electric Railway Practice.** Seniors in railway mechanical engineering. Lectures and laboratory work. Two hours, second term. Lectures, S., 9. Laboratory hours as arranged. Professor NORRIS and Assistant Professor KARAPETOFF.

26. **Electric Railways.** Requires E.E. 20 and 21, (first term). Seniors in electrical engineering may elect four hours in this course in place of a corresponding number of hours of thesis work. Lectures, recitations and laboratory work. Second term S., 9. Recitations and laboratory periods as arranged. Laboratory hours, M., W., F., 8–11; M., T., W., Th., F., 2–5. Professor NORRIS and Assistant Professor KARAPETOFF.

28. **(E.X.E.) Electrical Engineering Laboratory.** Seniors in electrical engineering. Four hours, first and second terms. Credit made up as follows: two hours for two laboratory periods, one hour for one recitation and one hour for preparation of report in addition to the work done thereon under course 21. M., W., F., S., 8–11; M., T., W., Th., F., 2–5. Professor CARPENTER, Professor NORRIS, Assistant Professor KARAPETOFF, and Messrs. FORD, DODDS and DENISON.

29. **(E.X.E.)** (1905-6 only) **Electrical Engineering Laboratory.** Seniors in mechanical engineering. Two hours, first or second term. Credit made up as follows: One hour for one laboratory experiment and one hour for one recitation per week. M., W., F., 8–11; M., T. W., Th., F., 2–5. Professor CARPENTER, Professor NORRIS, Assistant Professor KARAPETOFF, Messrs. FORD, COCHRANE and ROBERTSON.

31. **Electrical Engineering.** Special work. Graduates as assigned. Professor NORRIS.

Department of Naval Architecture. (N.A.)

10. **Ship Design and Construction.** General description of the different types of vessels. Derivation and conception of the "Elements of Form." Laying down and fairing a vessel's lines. Discussion of the general arrangement and drawing out plans in accordance. Study of the scantlings of the structural elements according to the rules of the Registration Bureaus, etc. Lectures and office work. Three hours throughout the year. Professor MCDERMOTT.

11. **Naval Architecture.** Elementary theories underlying the design of vessels. Computations of the geometrical quantities. Initial stability. Resistance of ships. Dimensions and proportions of screw propellers and other propelling agents. Lectures and office work. Two hours, from Christmas recess to the end of year. Professor MCDERMOTT.

20. **Ship Design and Construction.** Advanced study of structural elements. Preparation of scantling section and various construction plans. Discussion and determination of the Freeboard and Tonnages. Approximate and detail estimates of the weights of vessels and their machinery. Lectures and office work. Three hours throughout the year. Professor MCDERMOTT.

21. **Naval Architecture.** Advanced theories and their practical application, relating to statical and dynamical stability. Oscillations and rolling of ships. Strength. Resistance. Propulsion and manœuvering of ships. Illustrative of the preceding, experiments are carried out in the experimental tank on planes moving at differ-

ent angles, on ship forms, and propellers. (See N.X.E. 26.) Two lectures throughout the year. Professor MCDERMOTT.

22. **Specifications, Contracts, and Cost-Systems.** The leading principles to be observed in drawing up specifications and contracts for steam vessels are fully discussed. Various systems of cost-keeping and cost accounts reviewed, and their advantages studied, as checks upon the efficiency of production, and as furnishing reliable data for estimating purposes. One lecture per week, second term. Professor MCDERMOTT.

23. **Seminary.** One hour per week, first term. Professor MCDERMOTT.

N.X.E. 26. Ship Resistance and Propeller Experiments. Required of Seniors in Naval Architecture and Marine Engineering. Experimental tank work as assigned. Credit. One hour. Second term after Easter. Professors CARPENTER, MCDERMOTT and Mr. C. D. ALBERT.

30. **Naval Architecture and Shipbuilding.** Graduate work as assigned. Professor MCDERMOTT.

Department of Marine Engineering. (Mar. E.)

10. **Marine Boilers and Auxilliary Machinery.** General introduction to the study of the machinery used aboard ship. Materials used in marine engineering. Structural design of fire-tube and water-tube boilers. Assisted draft design. Arrangements for using liquid fuel. Auxilliary machinery.—Condensers, pumps, feed heaters, filters and purifiers. Evaporators and distillers. Miscellaneous outfit. Two three-hour periods per week throughout the year. Lectures and office work in designing. Professor THOMAS.

20. **Propelling Machinery and Equipment.** Discussion of the various types of engines. General marine engine design. The balancing of engines. Structural design and laying down of propellers and paddle wheels. Principles of the general arrangement of machinery in the ship. Heating and ventilation of ships. Refrigerating machinery. Use of electricity aboard ship. Specifications, and estimates of weight and cost of machinery. Three lectures and three designing periods during first term. Two lectures and two designing periods, second term. Professor THOMAS.

21. **Steam Turbines.** Classification of turbines and description of leading features of the various types. Mechanical and thermal considerations underlying the action of steam in turbines. Calculations involved in turbine design. Discussion of building, erecting and testing. Adaptability to special conditions of service. Economic

results of the use of turbines in engineering practice. Problems in turbine design are worked and handed in by the class, and returned after corrections have been made by the instructor. Two lectures per week during second term. Professor THOMAS.

22. **Seminary.** One hour per week, first term. Professor THOMAS.

30. **Marine Engineering.** Graduate work as assigned. Professor THOMAS.

Department of Railway Mechanical Engineering. (R.)

Locomotive Drafting. Sophomores expecting to enter the Railway Department should make request for locomotive details in Mechanical Drawing course M.D. 5.

10. **Locomotive Shopwork.** At least one summer's work in constructing or repairing locomotives or cars is very emphatically advised and considered necessary previous to the railway senior year. Shops for the above are situated in all sections of the country. Wages have been paid to the inexperienced up to $2.00 per day. Three and one-half months can usually be obtained, though three will be entirely satisfactory. Proper credit, in place of shopwork in the College, will be given after an examination satisfactory to the Department of Mechanic Arts. Positions can be obtained through Professor Hibbard.

20. **Railway Machinery.** The designing, manufacture, service in operation, and repairing of locomotives, tenders, cars and their accessories. Lectures, reading, laboratory, and shop visits. Seniors and graduates. Credit, four hours each term. M., T., W., Th., 10. Professor HIBBARD.

21. **Designing.** Problems arranged to suit the class of work expected to be undertaken by the student after graduation. Juniors, seniors, and graduates. Three hours (nine hours in drafting room) per week from the beginning of the year to the Easter recess. Credit, three hours first term, one hour second term. 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. Training in addressing an audience. Juniors, seniors, and graduates. One hour. F., 9. Professor HIBBARD.

23. **Locomotive Testing.** "Instruction Tests" of boiler and engine, including traction dynamometer, by courtesy of the Delaware, Lackawanna & Western Railroad, giving acquaintance with the instruments, locomotive connections, and methods of commercial road tests. Open only to railway seniors and graduates, and to juniors

who may wish for a preliminary experience without credit. Elective, one hour, first term. Professor HIBBARD.

25. **Locomotive Engineering.** General principles governing all locomotive designing, discussion of the various types into which the modern locomotive has been specialized, practical applications of the theories of machine design and steam engineering to the specific problems of the locomotive as carriage, boiler plant and steam engine, the methods of elimination, selection and computation for principal dimensions of locomotive for a selected service as load, grade, speed, fuel and permanent way, all most largely from the view-point of the railroad to secure maximum hauling efficiency and continuous use, coupled with minimum expense of operation, maintenance and repair. Elective, for seniors in groups other than Railway. Lectures, one hour per week, M., 12, or S., 12, first term. 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, Railway Supply Business, Organization, methods and records of Motive Power Department, Discipline and Management of Men, Wage Systems, Foreign Railway Engineering, Outlines of Railway Operation and Management. Seniors 2nd term, and graduates. As assigned. Professor HIBBARD.

31. **Plant Designing.** Rolling equipment, Round Houses and Shops. Advanced work. Seniors 2nd term, and graduates. As assigned. Professor HIBBARD.

Suggested Electives: Political Economy; elementary, transportation (2nd term, M., 11, Professor FETTER), labor, wages, corporations. Law; contracts and agency, carriers, injuries, patents. Advanced railway quantitative analysis; anti-friction metals, iron and steel, boiler coverings, feed water purification, coal and its sulphur, waste, oils, paints and varnishes for wood and for steel. P.E., 24, M.A., works administration. Experimental Engineering; 21, 23, 25, 22 in railway rolling stock, motive power equipment and supplies. M.D., 22, 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.
CHARLES H. BLOOD, of the Board of Trustees.
GEORGE W. HARRIS, Librariau.
GEORGE P. BRISTOL,
SIMON H. GAGE,
RALPH C. H. CATTERALL,
LOUIS M. DENNIS,
} of the University Faculty.
GEORGE W. HARRIS, Secretary.

LIRRARY STAFF.

GEORGE WILLIAM HARRIS, Ph.B. ,Librarian.
ANDREW CURTIS WHITE, Ph.D., Assistant Librarian in charge of Classification.
WILLARD HENRY AUSTEN, Assistant Librarian in charge of the Reference Library.
KATHARINE DAME, A.B., Assistant Librarian in charge of the Catalogue.
WILLARD WALDO ELLIS, A.B., LL.B., Curator of the Shelves.
MARY FOWLER, B.S., Cataloguer.
JENNIE THORNBURG, B.L., Cataloguer.
ELIZABETH SAGE INGERSOLL, Assistant in the Order Department.
MINERVA AUGUSTA STUBBS, Assistant in the Accession Department.
EDITH ANNA ELLIS, B.L., Assistant in the Circulation Department.
BERTHA WILDER, Assistant in the Reference Library.
ABRAHAM ABBEY FREEDLANDER, A.B., Assistant in the Reference Library.
GEORGE LINCOLN BURR, A.B., Librarian of the President White Library.

ALEXANDER HUGH ROSS FRASER, LL.B., Librarian of the Law Library.
FRED EUGENE ROSBROOK, Assistant in the Law Library.
HARRY CHARLES FREY, A.B., Assistant in the Law Library.
ROY THOMAS STRAHAN, Assistant in the Law Library.
JULIA WHITON MACK, A.B., Librarian in charge of the 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 three hundred aud fifteen thousand one hundred and thirty-seven distributed as follows:

General Library	270,730
Seminary and department Libraries	5,948
Law Library	34,137
Flower Veterinary Library	2,700
Forestry Library	984
Stimson Hall Medical Library	638
	315,137

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 artifical ventilation, and fully equipped with incandescent electric lights. The extreme dimensions of the building are one hundred aud 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, are stacks for the newspaper and patent collections, the circulating library, and a lecture room, with seating capacity for two hundred and forty 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 KELLY MATHEMATICAL LIBRARY, comprising eighteen hundred volumes and seven hundred tracts, presented by the late Hon. William Kelly, 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 upward 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 seven thousand volnmes, 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 ICELANDIC COLLECTION, containing about eight thousand and five hundred volumes, and the PETRARCH COLLECTION, containing about three thousand five hundred volumes, both bequeathed to the Library by the late Willard Fiske, and received in 1905 ; BAYARD TAYLOR'S Correspondence and journals and his collection of Goethe literature presented to the Library in 1905 by Mrs. Marie Taylor.

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 and to seniors designated by their professors. Supplementing the reference library is a separate circulating library from which books may be taken for home use by any member of the University. A library deposit of five dollars is required from students registering for the home use of books. The library is open on week days, during term time, from 8 A. M. till 10.45 P. M., except oh Saturdays, when it is closed at 5 P. M. In vacation it is open on week days from 9 A. M. ill 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 encyclopaedias, 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 similiar 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 Douglas 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 posesses 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 1905–06 :

1. **Introduction to the Use of Books.** A systematic study of Bibliographies, Indexes, Dictionaries, Cyclopædias, etc., including the principles of classification, cataloguing, indexing and preparing manuscript for printing. Lectures and exercises. First half year. T., 2:30.

1 a. Laboratory work covering the same subjects as course 1, intended for students wishing more of the practical work. Open to students who have had course 1. One afternoon from 2:30 to 5, each week. Second half year. 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. In 1903, through the generosity of Mr. William H. Sage, the chapel was not only again enlarged by the erection of an additional wing on the north side for the organ and choir loft, but in addition, the whole interior was subjected to an elaborate scheme of redecoration (the work of Cottier & Co. of New York) , so that Sage Chapel is now one of the most beautiful places of worship in America. During this same year, a beautiful Caen stone pulpit of elaborate design was erected in the Chapel "In memory of Dean Sage, 1841-1902, Founder of the Preachership in this chapel", by his surviving family.

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 that now remains 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 64x66 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 one of the most extensive schemes of figure mosaic yet attempted in this country. Processions of the Arts and the Sciences, impersonated in the figures of beautiful young women with appropriate symbols, lead up through Truth and Beauty, respectively, to a seated figure of Philosophy, "Philosophia", in the central space, over whose knees is unrolled the scroll of wisdom which he has been contemplating. On the vaulted ceiling above are emblazoned the symbols of Heaven, where angels and archangels stand or kneel in worship before the mysteries of the Cross. The heroic figures of the ceiling are depicted on 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 University trophy and lounging room, which has been recently fitted up on the first floor, and 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.

INFIRMARY COMMITTEE.

The Infirmary has been placed by the Board of Trustees in charge of a standing committee which consists of

ROGER B. WILLIAMS, of the Board of Trustees, Chairman,
JACOB GOULD SCHURMAN, President of the University,
EMMONS L. WILLIAMS, Treasurer of the University.

The Cornell Infirmary is the former mansion of the late Henry W. Sage, Chairman of the Board of Trustees. Its establishment is recorded by an inscription in the hall, which reads as follows : " 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, as a memorial to their father, by his sons, Dean and William Henry Sage."

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 bathrooms, 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 bathrooms. The rooms on this floor are 11 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 whieh a bed can be rolled. The basement contains a laundry, servants' bathroom, and the heating apparatus. The house is supplied throughout with gas and electric lighting, and heated by a system of hot water.

This building is at all times available as a home for students suffering from any except contagious diseases. Room, nursing, and ordinary food are furnished to such students in the general ward for $1.00 per day, with an extra charge for special rooms, special foods, and special nursing. In the course of the year 1904-05, 387 students were admitted.

ATHLETIC ASSOCIATION.

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 studeuts representing officially the different branches of athletics, besides the representative of the undergraduate wearers of the "C," and the manager of the interscholastic track meets, 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 local 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.

Fifty five acres of land adjoining the University campus have been set aside by the trustees of the University for a new University Playground and Athletic Field, the construction of which has been undertaken by the Alumni.

Officers.

FRANK IRVINE	President
CHARLES HAZEN BLOOD	Graduate Treasurer
JOHN LAWSON SENIOR	Graduate Manager-Secretary

Members.

CHARLES HAZEN BLOOD	Executive Committee
DAVID FLETCHER HOY	At Large
EDWARD LEAMINGTON NICHOLS	Faculty
BLIN SILL CUSHMAN	Faculty
FRANK IRVINE	Faculty
EDWIN HAMLIN WOODRUFF	Faculty
JOHN LAWSON SENIOR	Graduate Manager
JOSEPH BOND PHILLIPS	"C" Representative
HAROLD JACOB WISE	Navy Manager
EDWARD THADDEUS FOOTE	Commodore of Navy
LEON COWLES WELCH	Baseball Captain
JOHN DIX COFFIN	Baseball Manager
JAMES HARRY COSTELLO	Football Captain
EDWARD WINSLOW CAMPION	Football Manager
DAVID CURTISS MUNSON	Track Captain
LEROY WOODLAND	Track Manager
JAMES HAROLD WHITEHEAD	Manager Interscholastic Track

SUMMER SESSION.

JULY 5TH TO AUGUST 16TH, 1905.

[The Summer Session of 1906 will begin July 5 and close Aug. 15.]

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.

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

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

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

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

EVANDER BRADLEY McGILVARY, A.M., Ph.D., Sage Professor of Ethics.

EDWARD BRADFORD TITCHENER, M.A., Ph.D., Sage Professor of Psychology.

GEORGE PRENTICE BRISTOL, A.M., Professor of Greek.

FRANK ALBERT FETTER, A.B., Ph.D., Professor of Political Economy and Finance.

CHARLES ALEXANDER McMURRY, Ph.D., (Director of Practice Department Northern Illinois Normal School, DeKalb, Ill.), Home and Grammar Grade Geography.

DEXTER SIMPSON KIMBALL, A.B., Professor of Mechanic Arts.

STANLEY COULTER, Ph.D., (Professor of Biology, Purdue University), Nature Study.

ARTHUR TAPPAN WALKER, A.B., (Professor of Latin Language and Literature, University of Kansas), Latin.

EDOUARD PAUL BAILLOT, L.H.D., (Professor of Romance Languages, Northwestern University), French.

GEORGE SYLVANUS MOLER, A.B. B.M.E., Assistant Professor of Physics.

WILLARD WINFIELD ROWLEE, B.L., D.Sc., Assistant Professor of Botany.

HENRY NEELEY OGDEN, C.E., Assistant Professor of Civil Engineering.

BENJAMIN FREEMAN KINGSBURY, A.B., Ph.D., Assistant Professor of Physiology.

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

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

RALPH CHARLES HENRY CATTERALL, Ph.D., Assistant Professor of History.

ALBERT CHARLES PHELPS, B.S., M.Arch., Assistant Professor of Architecture.

JOHN SANFORD SHEARER, Ph.D., Assistant Professor of Physics

ERNEST BLAKER, Ph.D., Assistant Professor of Physics.

JOHN IRWIN HUTCHINSON, A.B., Ph.D., Assistant Professor of Mathematics.

GUY MONTROSE WHIPPLE, Ph.D., Assistant Professor of the Science and Art of Education.

OSKAR AUGUSTUS JOHANNSEN, B.S., Ph.D., Assistant Professor of Civil Engineering.

WALTER RAUTENSTRAUCH, M.S., Assistant Professor of Machine Design.

ALBERT BERNHARDT FAUST, A.B., Ph.D. Acting Assistant Professor of German.

ELIAS JUDAH DURAND, A.B., D.Sc., Instructor in Botany.

BLIN SILL CUSHMAN, B.S., Instructor in Chemistry.

ALEXANDER DYER MACGILLIVRAY, Ph.D., Instructor in Entomology.

GEORGE MAXWELL HOWE, Ph.D., Instructor in German.

WILLIAM BENJAMIN FITE, Ph.D., Instructor in Mathematics.

WILLIAM ALBERT RILEY, B.S., Ph.D., Instructor in Entomology.

CHESTER MURRAY, Ph.D., Instructor in Romance Languages.

WILLIAM CROOKS THRO, A.M., Ph.D., Instructor in Nature Study.

HUGH DANIEL REED, B.S., Ph.D., Instructor in Vertebrate Zoology.

FRED ASA BARNES, M.C.E., Instructor in Civil Engineering.

ARTHUR WESLEY BROWNE, B.S., M.S., Ph.D., Instructor in Chemistry.

RAY HUGHES WHITBECK, A.B., (Supervisor in New Jersey State Normal School, Trenton, N. J.), Physical Geography and Geography Methods.

GEORGE DAVID HUBBARD, M.S., A.M., Instructor in Geology and Physical Geography.

ROBERT COYNER FENNER, B.S., M.E. Instructor in Physics.

WILLARD JAMES FISHER, A.B., Instructor in Physics.

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

WILLIAM FREDERICK HEAD, Foreman in Forge Shop.
ROBERT VANDERHOEF, Assistant in Foundry.
ALBERT EDWARD WELLS, Foreman of the Medicine Shop.
CLAYTON BYRON BURKE, Foreman of the Wood Shop.
ROBERT EDWARD GABY, B.A., Assistant in Physiology.
HERMAN CAMPBELL STEVENS, A.B., Assistant in Psychology.
CLARENCE ERROL FERREE, A.M., M. S., Assistant in Psychology.
CHARLES LYMAN RAND, A.B., Assistant in Chemistry.
ELLA MAUDE CIPPERLY, A.B., Assistant in Botany.
RALPH EDWARD SHELDON, A.B., Assistant in Vertebrate Zoology.

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; also in a number of subjects taught in elementary schools. 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.

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 Sibley College students taking shopwork are not exempt.

Visitors are not allowed in the classes.

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 Trersurer at the beginning of the term.

In Physical Geography Laboratory (course G) a fee of $1.00 is required to be paid to the Treasurer of the Univertity to cover incidental expenses of the course.

Students registered in Sibley College during the previous year or years will not be charged any additional shop fee for shopwork during the Summer Session; but all other students taking shopwork shall be charged a fee additional to their tuition fee of $25, at the rate of $1 for every eight hours of actual shopwork per week per Summer Session.

CREDIT FOR WORK.

Regular 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.

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 accomodation here, and a few rooms are reserved for single gentlemen. Every applica-

tion 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.

Without special permission, no person will be allowed to room in Sage College or Sage Cottage during the Summer Session unless registered as a student in the Summer Session.

Those desiring to secure rooms at Sage College or the Cottage should address the Manager, Mr. George Franklin Foote. (See page 61.)

2. At private houses in the city, costs $5 to $7 per week.

SPECIAL RAILROAD RATES.

A special railroad rate on "certificate" plan has been hitherto granted students for the Summer Session. An application will be made at the proper time for a similar reduction for 1906. For fuller information apply to Registrar, Cornell University, after May 15, 1906.

COURSES OF INSTRUCTION.

The following pages contain a statement of the work carried on in the Session of 1905. Similar courses, with an extended range of work, will be offered in 1906. For fuller information address the Registrar, Cornell University, Ithaca. N. Y.

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 a study of the nature of language in general, and of the relations be-

tween 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 **Teachers' Course in Homer.** The work of the course will center in the Iliad and will consist of three parts:

(a) The reading and interpretation of selected portions of the Iliad.

(b) The study of the language of the poem, and its relations to the Attic dialect; the epic hexameter, its origin and development; the principles of interpretation; some feautures of life in the "Homeric period"; the value of archæology for the understanding of the poem; aims and methods of translating; English translations since Chapman.

(c) Discussions on the teaching of Homer; the end to be kept in view practical difficulties in the work. The most valuable books and other auxiliary helps for the teacher. Daily ex. S., 9. *White* 3 B. Professor BRISTOL.

LATIN.

A. Course for Teachers.

a. *Pronunciation.* A brief discussion of the evidence in support of the Roman method. Practice in pronunciation and in the reading of Latin verse.

b. *Syntax of the Modes, especially the Subjunctive.* Meanings of the subjunctive in independent sentences. Development of the dependent clauses. Discussion of some of the more difficult constructions. Classification of examples found in parts of the preparatory authors.

c. *Syntax of the Tenses.* Uses of the indicative tenses in narration. Meanings and use of the subjunctive tenses. Is there a special "sequence of tenses" in the subjunctive?

d. *Purposes and Methods of Preparatory Study in Latin.* Why is Latin of value to the secondary student? The elementary work. In what order should the preparatory authors be read? The study of Caesar. Latin composition.

This course will be conducted largely by lectures. Prospective students should bring editions of Caesar, Cicero, and Virgil. Daily except Sat., 9, *Morrill* 3. Professor WALKER.

B. **The Odes of Horace.** The chief emphasis will be laid on the literary side of the work, and there will be careful practice in reading

the metres. Little attention will be given to grammatical questions. Daily except Sat., 10, *Morrill* 3. Professor WALKER.

C. **Virgil.** This course is intended primarily for those teachers in preparatory and high schools who desire an accurate knowledge of the various subjects that pertain to Virgil in general, and to the teaching of the Aeneid in particular. The Aeneid, Books I–VI, will be studied carefully with reference to all the points that should be emphasized in elementary instruction. Daily except Sat., 11, *Morrill* 3. Assistant Professor DURHAM.

D. **Latin Composition.** This course is intended primarily for teachers of preparatory Latin composition. Exercises on dictated English idioms, with particular reference to sentences in which a given word or construction in English has several distinctly different Latin equivalents. Daily except Sat., 12, *Morrill* 3. Assistant Professor DURHAM.

GERMAN.

A. **Elementary German Grammar and Translation.** The text-books in this course will be Bierwirth's *Beginning German* and Hewett's *German Reader*. The object of this course is to afford an opportunity for those who have had no German to master the essentials of the grammar and translation during the period of the Summer Session An opportunity will thus be presented for those whose preparation in German is inadequate to do the entire work in elementary German (German 1) required for admission. Two recitations a day will be held with ample time between the two for the preparation of the second lesson. The student is expected to devote his entire time to this subject. Daily, 9 and 12. *Morrill 6.* Assistaut Professor FAUST.

B. **The Rapid Reading with comment of the Advanced Requirements** (German 2) **for Admission in German :** Freytag's *Journalisten*, Schiller's *Wilhelm Tell*, Goethe's *Hermann and Dorothea*. The purpose of this course is to enable students who are deficient in the advanced requirements for admission to make up by extra work the entire amount required in this course. Two recitations a day will be held, with a sufficient interval to enable the student to prepare for the second recitation. Students electing this course are expected to devote their entire time to this subject. Daily, 8 and 12, *Morrill 13*. Dr. HOWE.

C. **Practical Exercises in German Composition.** The object of this course is to prepare students in advanced German to pass the requirements for admission in German Composition. M., W., F., 9, *Morrill 5*.

D. **Advanced German Composition and Conversation.** Course for teachers and advanced students. This course will be conducted entirely in German, in order to familiarize the student with the spoken language. T., Th., S., 9, *Morrill 5.*

E. **Lectures in German upon German Literature of the Eighteenth Century,** "Der Sturm und Drang in der deutschen Litteratur des 18. Jahrhunderts." The lectures will deal with Hamann, Herder, Goethe, Lenz, Klinger, and if time permits, with the early dramas of Schiller. Daily, ex. S., 10, *Morrill 5.*

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* Professor BAILLOT.

B. **Lectures in French** on the great prose writers of the XIXth century, critics, historians, philosophers, essayists and political writers. T., Th., 11. *White 2.* Professor BAILLOT.

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.* Professor BAILLOT.

D. **French Grammar and Reading** for beginners. The grammar used will be that of *Fraser and Squair.* The object of the course is to give to those who have had no French the opportunity of learning the essentials of grammar and reading, which require, as a rule, almost a whole year's study, To accomplish this end very intensive work must be done. Two recitations a day will be held, with sufficient time between the two for the preparation of the second lesson, and the student is expected to devote his entire time to this subject. M., T., W., Th.; F., S., 8 and 12 o'clock, *White* 11. Mr. MURRAY.

ENGLISH LITERATURE.

Lectures and Interpretative Readings. Daily ex. S. 9. Lecture Room, Barnes Hall. Professor CORSON.

The lectures in this course are introductory to the readings and will embrace the following topics: What is Literature and what should a literary education signify? How to study Shakespeare: The Evolution of Shakespeare's Dramatic Blank Verse; the Aesthetics of English Verse (3); Milton's Comus, Lycidas, Sonnets, and Paradise Lost (3);

Revival of English Poetry in the 18th Century ; Lectures on Wordsworth, Coleridge, Shelley, Keats, Tennyson, and Robert and Mrs. Browning.

The interpretative readings will be from the following works : Midsummer Night's Dream, Merchant of Venice, Much Ado about Nothing, King John, Romeo and Juliet, Hamlet, Macbeth, King Lear ; Selections from Wordsworth, Coleridge, Shelley, Keats, Tennyson, Robert and Mrs. Browning, Ruskin, Carlyle, and Matthew Arnold.

PHILOSOPHY.

A. **The History of Philosophy in the Eighteenth and Nineteenth Centuries.** Daily, ex. S., 12. *White* 9. Professor McGILVARY.

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, ex. S., 11 (or at an hour to be arranged.) *White* 9. Professor McGILVARY.

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. **General Psychology ; Elementary Course.** 1. Lectures and exercises. M., W., F., 9. Text-book : Titchener's *Primer of Psychology*. Professor TITCHENER. This course is intended to serve as a general introduction to the study of psychology from the experimental point of view. After a consideration of the subject-matter, method and problem of psychology, mental states and processes are discussed in detail, in the order of increasing complexity. The first part of the course treats of sensation, affection and attention ; the second part, of perception and idea, association, emotion, and the sim-

pler forms of action ; the third part, of memory and imagination, thought and self-consciousness, sentiment, and the complex forms of action. Wherever it is possible, the lectures are illustrated by experimental demonstrations. Two concluding lectures deal with the psychology of the abnormal, and with the province and relations of psychology as a whole,

If only the lectures and examinations are taken, this course counts as three hours ; if the prescribed exercises are done, it counts as five hours.

2. Laboratory Practice. M., W., F., 2:30–5, with prescribed work on literature and record books. Text-book : Titchener's *Experimental Psychology*, Qualitative. Assistant Professor BENTLEY, Mr. STEVENS, and Mr. FERREE. In this course, the student repeats for himself, under experimental conditions, certain of the classical observations of human psychology. A wide range of selection is offered as regards individual experiments ; but the work will be restricted, for the most part, to experiments upon sensation and perception, affective process, attention and impulsive action. The course counts as five hours.

B. **Abnormal and Animal Psychology.** M., W., F., 8. Assistant PROFESSOR BENTLEY. The first part of the course will cover the typical forms of mental abnormality. The lectures will define and illustrate the terms 'abnormality,' 'derangement, ' mental disease' and alienation, and will discuss, in order, (1) minor mental derangements (illusions, hallucinations, dreams and hypnosis) : (2) the more serious and permanent disorders (including hysteria, epilepsy, and the various insanities), and (3) deficient and exceptional minds (congenital blindness and deafness, color-blindness, aphasia, general arrested development, the phenomenal chess-player and calculator, the genius, the habitual criminal and the 'degenerate'). The last part of the course will include lectures on the psychology of selected animal forms, (e.g., unicellular organisms, the ant, the frog, the sparrow, the cat and the monkey). Besides an analysis of the animal consciousness, the course will include a discussion of the origin and development of mind in the race at large.

The lectures (three a week) will be supplemented by collateral reading, abstracts and occasional essays by the student. This course may be taken along with Course A, and counts as five hours.

C. **General Psychology : Advanced Course.** Essays and prescribed reading or advanced laboratory work. Hours to be arranged. Professor TITCHENER, Assistant Professor BENTLEY, Mr. STEVENS, and Mr. FERREE.

SCIENCE AND ART OF EDUCATION.

A. Principles of Education. Lectures, discussions and readings. Daily, ex. S., 11, *White 10.* Professor DEGARMO.

This course will present the general theory of education, following in the main the outline of Horne's *Philosophy of Education.*

B. Lectures on Secondary Education.

(a) **The Development of Secondary Schools.** First three weeks. Lectures, discussions and readings, Daily, ex. S., 10. *White 10.* Professor DEGARMO.

Comparative study of the development of secondary schools in Germany, France, England and the United States. Prescribed reading : Russell, German Higher Schools.

(b) **The Period of Adolescence.** Second three weeks. Lectures and prescribed readings. Daily, ex. S., 10. *White* 10. Assistant Professor WHIPPLE.

A study of the physical and mental characteristics of the adolescent with their significance in secondary instruction.

C. Educational Aspects of Psychology. Lectures and prescribed reading. M., W., F., 9. *White 7A.* Assistant Professor WHIPPLE.

The lectures outline a system of functional psychology, and indicate the significance to education of the physiological basis of mental life, plasticity and habit, attention and interest, association, perception, apperception, memory, imagination, conception, reasoning, instinct and action.

D. School Hygiene. Lectures, laboratory demonstrations and prescribed reading, T., Th., 9. *White 7A.* Assistant Professor WHIPPLE.

The course deals primarily with mental hygiene and the hygiene of instruction,—with such topics as fatigue, the period of study, school diseases, defect of sight and hearing, and, so far as time allows, with the hygiene of reading writing and other studies.

E. Educational Conference. T., 2–4, or hours to be arranged. *White* 7A. Professor DEGARMO and Assistant Professor WHIPPLE,

Discussion of typical problems in education, with prescribed reading.

HISTORY

A. American History. The United States from 1815 to the present, a course primarily for teachers. Beginning with the re-organization of the government after the second war with England, the course will emphasize the various prominent movements in American His-

tory down to 1905 ; the advance in civilization, the westward movement ; the economic questions which have influenced the life of the people, *e.g.*, the bank, the tariff, public lands, railroads, and the slavery question ; the doctrines of State Sovereignty and of Nationalism ; the Civil War ; Reconstruction, and the expansion beyond the continent.

Daily, except S., 8, *Morrill 11*. Assistaut Professor CATTERALL.

B. **English History, 1714-1905.** A rapid survey of the History of England for the last two centuries, treating the growth of responsible ministerial government, the colonizing policy of England before the nineteenth century ; the relations of England and Ireland ; the attempt of George III to restore royal authority ; the American Revolution and its effects upon English policies ; the French Revolution and the struggle with Napoleon ; the reforms of the nineteenth century, economic, political, judicial and social ; the New Imperialism.

Daily, except S., 9. *Morrill 11*. Assistaut Professor CATTERALL.

CIVICS, POLITICAL AND SOCIAL SCIENCE.

Course A. **Economics in Every-day Life.** An essay to an introduction into the study of economics by methods that may be used in secondary school teaching. The conditions commonly found in American communities to-day will be considered with reference to the actual facts and to the determination of the economic problems involved. No previous study of economics is required May be taken by students of regular course 51 by special arrangement for additional exercises and reports. Fetter's *Principles of Economics* will be used as collateral reading. Daily at 8, *Morrill 12*. Professor FETTER.

Course B. **Recent Progress in Economic Thought.** A study of some of the important doctrines and conceptions which have lately been undergoing alteration, such as the concept of capital, the law of diminishing returns, the theory of interest, the doctrine of rent, and the general theory of price. Introductory lectures on each topic, setting forth the changes of thought during the past century, and the ideas that have of late found expression and formulation. Readings from recent books and periodicals, and special discussions of Clark's Distribution of Wealth (1900) and of Carver's Distribution of Wealth (1904), indications as to the probable bearing of the newer ideas on some practical questions and as to the developments made necessary in certain practical divisions of economic study. Some previous systematic study of economics is required of those undertaking this course. Daily at 10, *Political Economy Seminary*, Professor FETTER.

MATHEMATICS.

A course will not be given unless at least three well prepared students register for it.

A. **Elementary and Advanced Algebra.** An advanced course on the elementary principles of Algebra. (a) parts of Jones' Drill book in Algebra. Daily ex. S., 8. *White 21.* PROFESSOR JONES.

(b) Lectures on the theory of equations, series, and measures and multiples. M., W., F., 11. *White 21.* Professor JONES.

B. **Solid Geometry.** Daily ex. S., 8. *White 17.* Dr. FITE.

D. **Trigonometry.** An elementary course covering parts of Jones' Drill Book in Trigonometry. (a) Plane Trigonometry. Daily ex. S., 9. *White 21.* Professor JONES.

(b) Spherical Trigonometry T., Th., S., 11. *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 Snyder and Hutchinson's Differential Calculus. Daily ex. Sat., 9. *White 22.* Professor WAIT.

H. **Integral Calculus.** An elementary course covering Snyder and Hutchinson's Integral Calculus. Two sections. Daily ex. Sat., 8, 11. *White 17.* Assistant Professor 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. FITE.

K. **Differential Equations.** An elementary course covering parts of Murray's Differential Equations. Daily ex. Sat., 8. *White 18A.* Dr. FITE.

L. **Projective Geometry.** Reye's Geometry of Position is made the basis of the course. Daily ex. Sat., 10. *White 18.* Assistant Professor HUTCHINSON.

PHYSICS.

1, 2a, 7. **Lectures in General Physics.** A course of lectures and demonstrations in General Physics corresponding to those given in Courses 1, 2a or 7 during the University year. No previous knowledge of Physics is required. The extensive equipment in lecture room apparatus possessed by the department greatly enhances the value of this mode of presentation. Subjects for 1905 : Electricity Sound and Light. Daily ex. Sat., 12. Assistant Professor SHEARER.

1 or 2 b. **Recitations in General Physics.** Two five-hour recitation courses in Physics will be given. The work covered will correspond to Courses 1 and 2 of the regular year. The topics for 1905 will be Electricity, Sound and Light in parallel with the lectures of Course 1. Daily ex. Sat. at 8. Assistant Professor SHEARER, Mr. FENNER, and Mr. FISHER.

2c, 2d. **Physical Laboratory.** This course is offered primarily for teachers of elementary physics in high schools and preparatory schools, and for those students who have had elementary text, book training, but no laboratory work in general physics. The equipment of the laboratory is such as to afford elementary experimental work in physical units aud their relations, statics, kinetics-dynamics, heat, light, sound, electricity and magnetism.

A course may be arranged at the beginning of the session for each individual covering as many or as few of the subjects outlined above as seems advisable. Occasional discussions of general interest may be held covering methods of observation, errors, curve drawing as a means of representing results and the theory of particular experiments. In all other cases individual instruction is given.

University students having the requisite requirements of admission to course Physics 2c, Register 1904–1905, may elect this course, following the schedule prescribed for regular work during the University year. Daily ex. S., 9–12. Assistant Professor BLAKER aud Mr. FISHER.

3. **Physical Experiments.** This course comprises the work offered in the regular junior year in general physical laboratory practice to those having had the requisite elementary training in physics and mathematics. The course is recommended for those students desiring to advance their knowledge of the underlying principles of general physics and to gain laboratory experience. The work in the laboratory is supplemented by written reports in which the general theory and results obtained are discussed. These reports form a basis for the criticism of the work.

The equipment of the laboratory is such as to allow great latitude

in the work. In connection with the laboratory is a reading room containing many works of reference. The instruction is entirely individual and a course may be arranged to meet the needs of each student.

Regular University students may elect work in this laboratory, subject to the regular requirements, for which see the end of this announcement. Sibley students will follow the regular order of the work for the college year. Daily ex. S., 9–12. Assistant Professor BLAKER and Mr. FENNER.

6. **Advanced Laboratory Work in General Physics.** Intended for those who have already completed routine courses and wish to take up special work. May be taken as preparation for research by students able to work largely independent of direct instruction. In special cases short investigations may be undertaken. Further details may be secured by correspondence. Daily ex. Sat., 8–12. Assistant Professor SHEARER.

4. **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. Daily ex. S., 8-12. Assistant Professor MOLER.

UNIVERSITY CREDIT.

Regular University students may receive credit toward graduation for summer work in 1905 as follows :

Course 1. Required in M E. and E.E. 2d Term.
Course 2a. Required in M.D., Ag., Ar., elective A. 2d Term
Course 2b. Required in C. E. elective A. 2d Term.
2 c or 2d. Required in C. E. elective A.
Course 3. Required in M.E. and E.E. elective A.
(One term of Physics 1 or 2 is required for entrance in Course 3.)
Course 4. Required in M.E. aud E.E.

In Course 4 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 3 before starting this course. Others must satisfy the department that they are competent to undertake work of this nature.

CHEMISTRY.

A. **Introductory Inorganic Chemistry.** The course will be given in three parts :

1. *Lectures and demonstrations.* The lectures embrace the leading facts and fundamental principles of Chemistry. They are fully illustrated by experiments for the performance of which the extensive equipment of the Department of Chemistry is available.

2. *Laboratory work.* The laboratory is designed to afford a working knowledge of the chemical properties of the principal elements and compounds. Emphasis is laid upon the manipulation of apparatus, accuracy of observations and the quality of the notebook record. So far as possible the work is adapted to the individual needs of those electing the course. Especial attention is given to teachers of Chemistry in high schools who desire to study laboratory experimentation in an elementary way.

3. *Recitations.* The recitations are in the nature of quizes on the ideas presented in the lectures and laboratory, and on reading assignments in standard text books of Chemistry. The writing of chemical equations and the solution of problems are thoroughly considered.

The above course is equivalent to Course 1 offered during the U ni versity year. Daily exc. Sat., 8-12. Mr. GEER and Mr. RAND.

C. **Qualitative Analysis.** Elementary course for those who have had the equivalent of course A. A study in laboratory and class-room of the methods for detecting and separating the principal bases and inorganic acids. This is followed by the analysis of various substances, either in solution or in solid form, the composition of which is unknown to the student. Considerable emphasis is laid upon the writing of equations expressing the reactions involved in the work. Lectures and recitations. M., W., F., 11. Laboratory, daily ex. S., 1:30 to 4:30. Dr. BROWNE.

D. **Qualitative Analysis.** A more advanced course for those who have had the equivalent of course C. This course will include:

1. Experimental lectures on the analytical reactions involving oxidation and reduction, with a discussion of the expression of such reactions in the form of equations.

2. A study in laboratory and class-room of the methods for detecting 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 those assigned in course C.

3. A comparative study in the laboratory of different methods for detecting and separating the bases. 1 and 2 may be taken together if desired. 3 is open only for those who have had the equivalent of 2. Lectures and recitations. T., Th., 11. Laboratory, daily ex. S., 1:30 to 4:30. Dr. BROWNE.

In connection with course D students with sufficient preliminary

training may be afforded opportunity for original research, either upon appropriate subjects of their own selection, or along some line assigned by the instructor.

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. The courses here announced are especially designed to aid teachers in their work in elementary courses, and the first two are intended for students who have had no previous training in botany, as well as for those who may wish to review. Excursions will be undertaken on Fridays or Saturdays, as a rule, an effort being made to give familiarity with the plants as they appear under natural conditions. The advanced courses are intended for those who feel the need of more thorough equipment for teaching. Both field and laboratory work will be undertaken in connection with them, the aim being to familiarize the student with taxonomic and morphological characters, as well as with plants as organisms in nature.

A. **Elementary Plant Physiology and Morphology.** The term will be devoted to the study of the general principles underlying the processes of nutrition, growth, etc. ; also a comparative study of the forms and reproduction of representative species of all the great plant groups : algæ, fungi, liverworts, mosses, ferns, gymnosperms, and angiosperms. Lectures, M., W., F., at 8. Laboratory work, M., W., F., 9 to 1. Dr. DURAND and Miss CIPPERLY.

B. **Special Morphology and Ecology of the Higher Plants.** Studies of typical plants representing the angiosperms. Field studies also for the purpose of amplifying observations made in the laboratory. Practical field studies in plant distribution. Excursions to localities where plant formations of special interest occur. The preparation of an herbarium representing the local flora may be

made in connection with this course. Photography will be a useful adjunct to the student's equipment. Lectures, T. and Th., at 8. Laboratory and field work, T. and Th., 9 to 1, and by appointment. Assistant Professor ROWLEE and Miss CIPPERLY.

Advanced Courses.

C. **Taxonomy and Embryology.** Practice in the collection and identification of algæ, bryophytes, and ferns. The student will become familiar in the field and laboratory with the commoner genera and species, especially those usually employed in class work. Attention will also be given to certain phases of the embryology and development of typical plants in the same groups, also in the gymnosperms and angiosperms, if found desirable. Lectures M., W., F., at 10. Laboratory and field work, on M., W., and F. afternoons. Dr. DURAND.

D. **Trees and Shrubs.** Taxonomic and biological studies of the trees, including field observations, also the study of the structure and development of wood. Lectures, T. and Th., at 10. Laboratory work T. and Th. afternoons and by appointment. Assistant Professor ROWLEE.

PHYSIOLOGY

A. **General Human Physiology.** Lecture-Conversations. This course is designed as a beginning course in Physiology, especially arranged for those who expect to teach Physiology in the secondary schools, and who wish to cover the entire subject.

Lee's American edition of Huxley's Physiology will be followed as a text book from which assignments will be made in advance. The topics assigned will be discussed, expanded and illustrated in the lecture periods. The lantern slides, charts, diagrams and physiological apparatus with which the department is well equipped will be used in illustration of the subject wherever possible. M., W., F., 10. Assistant Professor KINGSBURY.

B. **Anatomical Physiology.** Laboratory work. This course will consist in the careful and systematic dissection, under direct supervisions, of the cat's body, together with the heart and brain of the sheep, in illustration of the structure, location and functions of the organs of the human body. Comparison will be made at every step with the conditions in the human body.

Microscopic preparations will be made showing the finer structure of the organs as they are studied in the gross dissection.

Designed for those who lack the necessary preliminary knowledge of anatomy as a basis for Physiology. Course B. may be taken with advantage in connection with course A. M., W., F., 11–1. Assistant Professor KINGSBURY and Mr. GABY.

C. **Advanced Physiology.** Lecture course. Selected topics. The field of Physiology is so large that it cannot be satisfactorily covered in detail in a short time. Divisions of the subject will be chosen to suit as nearly as possible, the needs of those who take the course. The lectures will be illustrated by means of experiment and lantern slides. A general knowledge of the gross and fine structure of the body is presupposed in this course. The work may count, hour for hour, in the work in Physiology required of medical students at Ithaca. T., Th., 9. Assistant Professor KINGSBURY.

D. **Experimental Physiology.** Laboratory work. This course will cover the Physiology of (a) Digestion and Nutrition, (b) Muscle and Nerve ; Heart and Circulation, (c) The nervous System and Organs of Special Sense (particularly the eye). Division (a), (b), or (c) may be taken or selected experiments from each group performed.

The work done in this course will be accepted, hour for hour, in place of the laborotory work required of medical students at Ithaca. Additional work may be taken M., W., F., 11–1 and S., 10–1, and the laboratory work of course 5 in the Department required of medical students, thus completed. T., Th., 10–1. Mr. GABY.

For demonstration, illustration and experiment the department is well equipped with physiological apparatus, such as opthalmoscopes, perimeters, etc., kymographs and other recording apparatus ; sphygmomanometers, sphygmographs, cardiographs, and other heart and circulation apparatus ; pneumographs, stethographs, etc., etc., diagrams, lantern slides, etc.

GEOGRAPHY.

The object of the courses in this department is two fold ; first to give instruction on subject matter and method in physical geography, including laboratory and field work, for teachers in high schools, normal schools, and colleges, and secondly, to offer in connection with these courses others on subject matter, and especially on method for geography teachers in the grades. The work embraces lectures, conferences, excursions, laboratory work and supplementary reading. The laboratories are equipped with an excellent teaching collection of maps, specimens and models, besides fully 5,000 lantern slides on geographic and geologic subjects. The region about Ithaca is rich in

geographic features, both physical and industrial, and frequent excursions are made to places of special interest.

University Credit. Upon handing in the required reports and passing examinations regularly matriculated students may receive University credit for the three courses F, G, and H combined, of three hours. Persons desiring credit in this work must confer with Mr. Hubbard at the opening of the term. To receive credit in any of the other courses requires special permission of the instructor in charge.

A. **Home Geography.** A systematic statement of the chief phases of Home Geography with numerous illustrations. Excursions to fields, shops, factories and local industries will be treated at length. The mode of handling such excursions with classes of children is discussed. The relation of this excursion work in Home Geography to later studies is traced out. It is expected that a number of these local excursions can be taken to suitable places in and about Ithaca. *Geologic Lecture Room.* T., Th., 10. Professor McMURRY.

B. **Type Studies of North America.** The course of study on North America is worked out in a series of important types suitable for the instruction of children in the grades. Around these types as centres the important facts are organized.

A number of these type studies are given a full treatment so as to illustrate the value of types and the principles of method in class instruction. The general movement through the grades is planned and the relation of these topics to earlier and later studies illustrated. *Geologic Lecture Room.* M., W., F., 9. Professor McMURRY,

C. **Type Studies of Europe.** Europe as the second chief centre of geographic study is treated in a series of chief topics or types, with incidental review of previous studies on North America.

The movement from Europe to the other continents is discussed at length.

In combination with the previous course this will give a full survey of the whole elementary course in geography. *Geologic Lecture Room.* T., Th., 9. Professor McMURRY.

D. **Aims and Problems in Geography.** Designed more particularly for Grammar School teachers. The course consists of lectures, discussions, and exercises dealing with the actual problems of the class room. Some of the topics treated are :—the chief aims in teaching geography ; the relative value of different kinds of geographical knowledge ; methods of conducting the recitation ; the proper use of the text book ; the use and misuse of supplementary books ; map modeling, map drawing, and the use of outline maps ;

use of pictures; field and factory trips; simple laboratory exercises; simple methods of teaching the earth's movements, the tides, etc. Course J is recommended, though not necessary, to accompany this course. *Geologic Lecture Room.* T., Th., 11. Supervisor WHITBECK.

E. **Geographic Influences and Relations.** Lectures and studies designed to show the influence of physiographic and climatic conditions upon human activities: the influence of soil, coast line, mountains and valleys, plains and plateaus, gaps and passes, winds, rainfall, ocean currents, altitude and latitude, navigable inland waters; geographical causes leading to the location and growth of cities, the location and migration of industries; man's reaction upon his environment and his conquest of natural obstacles. *Geologic Lecture Room.* M., W., F., 11. Supervisor WHITBECK.

F. **Physical Geography.** A lecture course upon modern physical geography, including the lands, the seas, and the atmosphere. The development and systematic classification of the leading physiographic features will form the basis of the course. Some of the topics discussed are: rivers, plains and plateaus, shore-lines, mountains, volcanos, glaciers and the glacial period; the ocean, its composition, movements and work; the atmosphere, general circulation, cyclones and special storms. The lectures will be fully illustrated by lantern slides. Students electing this course are advised to take also the two related courses, G. and H. *Geologic Lecture Room.* M., T., W., Th., 8. Mr. HUBBARD.

G. **Laboratory Course in Physical Geography.** This course includes both subject matter and methods. Although the course is arranged primarily for teachers in high schools, yet it is so planned as to be of advantage to grade teachers who anticipate teaching geography in the high school. The laboratory equipment used in the course consists of numerous models, charts, and maps; much attention however, is given to the possibilities open to teachers in schools having limited laboratory equipment. So far as possible the work offered will be arranged to meet the individual needs of teachers; where desired by a teacher, personal suggestions will be made regarding the local field work he may carry on with his classes. Among the specific topics treated are the following; the interpretation and use of topographic maps; study of typographic maps and models illustrating type land forms; the assembling and mounting of typographic sheets into useful type maps; physiographic influences; the use of photographs; common rocks; weather maps. *Physical Geography Laboratory.* T., Th., 2–4. Mr. HUBBARD.

H. **Field Course in Physical Geography.** One afternoon each week and two Saturday all day excursions are devoted to the study of physiographic phenomena in the field. In this field work a study is made of river valley forms, both young and mature; waterfalls; lakes; and typical glacial deposits, inciuding moraines, drumlins, kames, eskers, and overwash plains. See Synopsis of excursions, pp. 467-468. Monday afternoon. Mr. HUBBARD and Supervisor WHITBECK.

I. **Round Table Conference in Geography.** There will be several evening conferences for instructors and students in geography, at which discussions of important general topics in connection with geography will take place. Some topics discussed in previous years were Nature and Scope of Geography, Principles Determining the Course of Study in Geography, Excursions and Laboratory Work in Geography, Sources of Geographic Knowledge.

Attendance on this course is purely voluntary and cannot be counted for University credit; but such free interchange of views among teachers and students is expected to throw much light on problems of teaching and on working methods.

J. **Elementary Earth Science.** Six field trips; matter and method will both receive consideration; suitable for grammar and high school teachers. (*See also Nature Study, p. 470.*)

(1) How the soil is made; its differences and qualities.
(2) The work of the smaller streams.
(3) The work of the larger streams.
(4) The story of the rocks; collection of specimens,
(5) The stories the pebbles tell; collection of types.
(6) Some changes wrought by the great glaciers.

Friday afternoon, 2-4:30. Supervisor WHITBECK.

SYNOPSIS OF EXCURSIONS OFFERED IN COURSE H.

Afternoon Excursions.

(1) Physiography of the campus and immediate vicinity; young and mature valleys; difference in form; in other characteristics; evidence of glaciation; evidence of former higher level of lake; origin of Lake Cayuga; influence of the physiography on the settlement and industrial development of the region.

(2) Excursion to Six Mile Creek, to study the gorge and water falls: the evidence of interglacial gorges; effect of the terminal moraine on the valley form; the difference of the valley form in drift and in rock; influence of these facts on the questions of water supply and water power.

(3) Excursion to shore of Lake Cayuga, to study wave form and movement, effects of wave erosion and transportation; the filling of lakes and the accompanying formation of strata; influence of stream action in lake filling; the resulting shore forms; nature and origin of joint planes; influence on man.

(4) Excursion to Coy Glen to study the elevated deltas: a study of their form, and evidence of former ice dams, holding up the waters of Lake Cayuga to higher levels; influence of these deltas in causing the Coy Glen gorge to be formed; a study of the gorge and its waterfalls; comparison between the lake history of this valley and that of the Great Lakes.

(5) Excursion to South Hill, to study the broader physiography features of the region: the maturely dissected plateau, the lake valley; the lake delta; and the influence of physiography on settlement and transportion route.

(6) Excursion to North Spencer, to study the characteristics of a typical terminal moraine; its dissection by postglacial streams; its relation to the preglacial Cayuga Valley; overflow channel and outwash deposits; cultural adaptation to topography and streams. Expense about $1.00.

All-Day Excursions.

(7) Excursion to Enfield, to study the preglacial valley; interglacial gorge; postglacial gorge; influence of hard layers on valley form; influence ou joint planes; hanging valleys; lateral moraine of Cayuga lake lobe of great ice sheet; elevated deltas; glacial erosion (All day Saturday.) Expense about $1.00.

(8) Excursion to Freeville, to study the upper Fall Creek valley; its change from a young lower course to a mature upper course; the extension of the terminal moraine up the valley; characteristics of eskers, of kames, and of overwash plains; the relation of these deposits to the moraine; influence of glacial deposits on agriculture. (All day Saturday.) Expense about $1.00.

VERTEBRATE ZOOLOGY.

A. **Elementary Vertebrate Zoology.** Lectures. M., W., F., 9-10. *McGraw 5.* Laboratory, M., W., F., 10–1 and 2–4. 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. Credit 3 hours. Dr. REED and Mr. SHELDON.

B. **Systematic and Economic Vertebrate Zoology.** Lectures. T Th., Sat., 8–9. *McGraw 5.* Laboratory and field work, T. and Th., 9–1 and 2–4, and S., 9–1. There will be one extra lecture each week at a time to be arranged. The lectures will treat of the principles of classification, the structures or parts employed in classification, the life histories and habits in detail, and the economic value of the more common vertebrates of the Eastern United States. In the laboratory representative species will be identified. For the laboratory work upon birds, Chapman's "Handbook of the Birds of Eastern North America," 6th edition, will be used as a manual. For the other groups, Fishes, Batrachians, Reptiles and Mammals, Jordan's "Manual of the Vertebrates," 8th edition, will be employed. As field-work, typical localities will be visited and the vertebrate fauna studied. In connection with the field-work, practice will be given in making, preserving and labeling scientific collections. Individual collections may be made if desired. Credit 4 hours. Dr. REED and Mr. SHELDON.

C. **Advanced Work and Research.** Daily, except Saturday, 9 to 4. This course is designed for students who have had courses A and B or their equivalents and desire to carry on advanced or research work. Comparative anatomy, using Wiedersheim as a text, may be taken in this course. Forty actual hours in the Laboratory will count as one hour of University credit. Dr. REED and Mr. SHELDON.

NOTE.—Persons intending to take any of the above courses should notify the Instructor in charge before June 1, in order that material may be provided.

ENTOMOLOGY.

I. Elementary Entomology.

A. **Insect Life.** Lectures on the classification of insects and on the habits of insects, with special reference to materials available for nature-study. M., W., F., 8. *White 12.* Professor COMSTOCK.

B. **Insect Life.** Laboratory practice in the classification of insects; studying the life history of insects in breeding cages such as may be used in the school room; the making of aquaria and study of aquatic insects; field excursions for studying the habits and haunts of insects. Two afternoons a week by appointment. Mr. THRO.

Course B is open only to students who are taking Course A.

II. Advanced Entomology.

The following courses are of an advanced nature; and only those students of this University who have taken courses 1 and 3 in the

Announcement of Courses for the Academic year or courses A and B 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.

C. **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.* Drs. MACGILLIVRAY and RILEY.

D. **Œcology of Insects.** Lectures and field work on the habits of insects, and their relation to their environment. M., 2–5. *White 12.* Professor COMSTOCK.

Course D is open only to students who are taking at least two hours of course C. Credit is given as for laboratory work.

E. **Research in Entomology.** Special work arranged with reference to the needs and attainments of each student. Daily ex. S., 8–5, Professor COMSTOCK and DRS. MACGILLIVRAY and RILEY.

Courses 6, 7, 10, 11 and 14 in the Announcement of Courses for the Academic Year may be taken during the Summer Session.

NATURE STUDY.

Course A. **The Nature Study Idea.** Lectures on the history and development of the nature study idea; its educational significance and position under existing conditions; its pedagogics: logical and progressive courses for grades below the high school; its materials and their use; field trips; the literature of the subject and other general topics fundamental to the proper presentation of the subject. A part of the time assigned to this course will be given to lectures upon the selection and organization of material, the illustrations being drawn from plant life. M., T., W., Th., F., 9. Professor COULTER.

Course B. **Plant Life in Nature Study.** Field and laboratory work. The general subjects treated will include light and soil relations; seasonal changes; recognition of dominant plant families; protective devices; seed dissemination; weeds; trees and shrubs; pollination, economic relations.

The course will also involve much experimental work, covering a wide range of experiments suitable for the various grades and emphasizing the observational work developed. The endeavor will be to make the course of extreme practical value to teachers and supervisors. W., F., 2–4.30. Professor COULTER.

C. **Nature Study in Bird Life.** This is a course for beginners.

The purpose of the course is to make pupils acquainted with our common birds. Particular attention will be given to the taking of field notes. On three mornings of the week there will be two-hour field excursions. Occasional lectures will be given on methods of bird study, nesting habits, and migrations of birds. A pair of opera glasses will be useful. T., W., Th., 10. Instructor THRO.

D. See Entomology A and B, page 469.

E. See Geography A and J, page 465 and 467.

F. See Botany A and B, page 462.

DESCRIPTIVE GEOMETRY.

A. **Descriptive Geometry.** This course is equivalent to courses 8 or 9, page 386. 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, 34.* Assistant Professor JOHANNSEN and Mr. BARNES.

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, 34.* Assistant Professor JOHANNSEN and Mr. BARNES.

HISTORY OF ARCHITECTURE.

General Announcement.—The courses offered are not strictly technical but are general culture courses designed to meet the needs of teachers of classic literature and history and of those persons who may contemplate travel and study abroad. The aims of the courses are to trace the origin, growth and decline of the architectural styles and to show how they have reflected the great movements of civilization, to familiarize the student with the master-pieces of architecture and to cultivate a taste for and appreciation of what is good in modern as well as in ancient work.

A. **History of Ancient and Mediaeval Architecture.**—Lectures. Special attention will be given to the classic architecture of Greece and Rome and to the great Gothic monuments. Illustrated with lantern-slides, photographs and models. Daily except S., 9. *Lincoln 29.* Assistant Pro essor PHELPS.

B. **History of Renaissance and Modern Architecture.** Lectures. The architecture of the Renaissance and of the 17th, 18th and 19th, centuries in Italy and other European countries ; Colonial and recent architecture in the United States. Illustrated with lantern slides, and photographs. Daily except S., 12. Lincoln 29. Assistant Professor PHELPS.

MECHANICAL DRAWING AND DESIGING.

A. **Mechanical Drawing.** Use of instruments, geometrical problems, orthographic projection, inking and tinting, shading and shade lines, lettering, isometric drawing, working drawings and conventions. 2 to 5 P. M. daily except Saturday. *Sibley 201.* Assistant Professor RAUTENSTRAUCH.

B. **Elementary Designing.** Problems in machine drawing and designing. 2 to 5 P. M. daily except Saturday. *Sibley 201.* Assistant Professor RAUTENSTRAUCH.

C. **Kinematic Drawing and Machine Design.** 2 to 5 P. M. daily except Saturday. *Sibley 201.* Assistant Professor RAUTENSTRAUCH.

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.

Course C consists of problems in irregular curves, cams, gears. chain wheels, linkages and hoisting machinery. This covers the regular Junior course in Machine Design M.D. 10, but all of M.D. 10 cannot be given during the Summer Session to any individual student on account of the shortness of the time.

Many valuable samples and models of machines and details of machines and engines are used to illustrate the problems in these courses.

MECHANIC ARTS: BASIS FOR MANUAL TRAINING.

A. **Pattern Making**. Use of wood-working tools ; elements of pattern making. Mr. BURKE, Foreman.

B. **Foundry Work**. Moulding, casting, mixing of metals, operation of furnaces, etc. Mr. ROBERT VANDERHOEF.

C. **Forge Work**. Forging, welding, tool dressing, tempering, etc., Mr. HEAD, Foreman.

D. **Machine Work**. Use of measuring tools ; hand and machine tools ; fitting and assembling. Mr. WELLS, Foreman.

Each of the above courses daily as assigned by Professor KIMBALL. M., T., W., Th., F., 8–12, 1–5. S., 8–2.

The work offered in the above courses is of two kinds, namely the same work given during the regular session, and also similar work in each course specially designed for the needs of teachers of manual training. Frequent consultation can be had with the head of the department and courses arranged giving special attention to the needs of teachers. At the same time it is of interest to teachers to see the work as given in the regular session, particularly if engaged in schools which prepare for such technical courses as are given in Sibley College.

The above indicates the general character of the work of the Summer Session. In detail it applies only to the session of 1905. Similar courses and more of them, will be offered in 1906. July 5–Aug. 15.

For detailed information send for a circular to

THE REGISTRAR, Cornell University Ithaca, N. Y.

STUDENTS IN THE 1905 SUMMER SESSION.

Acosta, Rafael Cavile, *Asingan, Pangasinan, P. I.*
Adair, Craig, *Wilmington, Del.*
Adams, Frank Avery, *Cosackie*
Adendorff, John, *Johannesburg, Trans., So. Africa*
Adler, George Herman, *New York City*
Agcavili, Francisco, *Piddig, Flocos Norte, P. I.*
Agcavili, Romarico, *Piddig, Flocos Norte, P. I.*
Aguilar, John Edward, *Santiago, Cuba*
Alba, Digno Aguiling, *Capiz, P. I.*
Aleman, Agustin, *Buenos Aires, Arg. Rep.*
Aleman, Fernando, B.A. (National Coll. Agr.), 1898, *Buenos Aires, Arg. Rep.*
Allan, William Lyn, *Redlands, Calif.*
Allen, Alice Macintosh, *Brooklyn*
Allen, Chester Salisbury, *Worcester, Mass.*
Allison, Raymond Vance, *Statesville, N. C.*
Alonso, Jose Aurelio, *. Ithaca*
Arnold, Turner Schuette, *Clarion, Pa.*
Austin, Benjamin Hale, *Honolulu, H. T.*
Austin, Blanche Tudor, B.S., (Wells), 1895, A.M. (Cornell), 1905, *Cincinnati, O.*
Ayres, Florence, *Bridgeton, N. J.*
Bair, Maurice Zacharias, *Hanover, Pa.*
Baker, Clarence Mulford, *La Moure, No. Dak.*
Baker, Horace Patton, *Philadelphia, Pa.*
Baldwin, Wesley Manning, *Brooklyn*
Baltasar, Apolinario, B.S. (Lices de Manila), 1903, *Manila, P. I.*
Bamberger, Florence Eilau, *Baltimore, Md.*
Banta, Frances (Myrtis), Ph.B. (Oberlin Coll.), 1900, *Conklin*
Barclay, Margaret Ethel, *Brooklyn*
Bard, Lodema, A.B. (Allegheny Coll.), 1902, *Slippery Rock, Pa.*
Barnum, Charlotte Elizabeth, *Brooklyn*
Barrett, Ella Teresa, B.L., 1890, *Albion*
Barritt, Nelson, *Pittston, Pa.*
Bartlett, Annie Frances, *Trenton, N. J.*
Bartlett, Millie Horton, *Brooklyn*
Barton, Aida Winifred, *Brooklyn*
Barton, Irene Maverick, *Brooklyn*
Barton, William Hill, *Ashgrove, Mo.*
Bateman, Warner Mifflin, *Glendale, O.*

Bautista, Marino, B.A. (Ateneo de Manila), 1902, *Manila, P. I.*
Bean, Arthur Malcolm, A.B. (Iowa Coll.), 1897, A. M. (Cornell), 1903, *Pekin, Iowa*
Becker, Caroline Fredericka, *Baltimore, Md.*
Beebe, Laurence Laverne, *Alpine*
Bender, Andrew, *Dillsburg, Pa.*
Bennett, Ray, *Ithaca*
Bergstresser, Clinton Artinius, A.B. (Lafayette Coll.), 1903, A.M. (Same), 1905, *Easton, Pa.*
van Bijlevelt, Joannes Samuel, *The Hague, Holland*
Bilderbeck, George Leslie, *South Hartwick*
Billwiller, Ernest Oswald, *Brooklyn*
Birch, LeRoy, *Washington, D. C.*
Bird, Edward James, *Ironton, O.*
Black, Hampton, *Montgomery, Ala.*
Blackiston, Helen, *Hampton, Va.*
Blanchard, Julian, A.B. (Trinity Coll.), 1905, *Hertford, N. C.*
Blanchard, Rollo Kimball, *Montpelier, Vt.*
Blandford, James Cleary, M.E. (Md. Agrl. Coll.), 1899, *Clinton, Md.*
Bloomingdale, Gertrude, A.B., 1904, *Basom*
Blunt, Albert Church, Jr., *Cheyenne, Wyo.*
Bocker, Dorothy, *New York City*
Bohrer, Walter, *Cincinnati, O.*
Booth, Elmir James, *Reed City, Mich.*
Borja, Ferino, *Laguna, P. I.*
Botelho, Antonio Carlos, *Sao Paulo, Brazil*
Bower, Florence May, *Lima, O.*
Bowler, Robert Franklin, *Florence, So. Car.*
Bowman, Robert H, *Kansas City, Mo.*
Bragg, Nancy Mellen, *Holliston, Mass.*
Brahmer, Leland Frank, *Lowville*
Breckenridge, William Edwin, B.A. (Yale), 1893, M.A. (same), 1902, *New York City*
Broadhurst, Philip Harvey, *Brooklyn*
Brown, Edmond Swain, *Winsted, Conn.*
Brown, Ethel Anna, *East Orange, N. J.*
Brown, Leonard Tenny, *Washington, D. C.*
Brown, Mary Louise, B.A. (Wellesley), 1893, M.A. (same), 1903, *Round Lake*
Brown, Robert Harry, *Detroit, Mich.*
Browne, William Henry, Jr., *Great Barrington, Mass.*
Bruce, Harry Alexander, *Evanston, Ill.*

Bruere, Alice Henrietta, B.S., 1895, *East Orange, N. J.*
Burk, Emma Louise, B.S. (Univ. of Penna.), 1904, *Philadelphia, Pa.*
Burnham, Trumbull Griswold, *Willimantic, Conn.*
Burns, Charles, *Brooklyn*
Burr, Henry Frank, *Oakdale*
Calhoun, Tracy Jennings, *Cleveland, O.*
Callaghan, Mary Veronica, *New York City*
Callanan, Frances Evelyn, *Oil City, Pa.*
de Camp, Horace Silliman, *Fulton Chain*
Carey, Irena, *Schenectady*
Carlon, Anna Theresa, *New York City*
Carman, Phillip Durkee, *Manila, P. I.*
Carpender, Sydney Blucker, *New Brunswick, N. J.*
Carpenter, Doris, *Brooklyn*
Carson, Charles Bancroft, *Rochester*
Case, Jennie Perrine, *Trenton, N. J.*
Cautley, Lucy R, *Ithaca*
Chalmers, Peter Chalmers, *Williamsville*
Chamberlain, Amos, Pd.M. (N. Y. Univ.), 1902, *Hibernia, N. J.*
Chamberlain, Mary Eliza, *Muskegon, Mich,*
Chapin, Edward Eaton, *Brooklyn*
Christiansen, Fred, *Manitowoc, Wis.*
Cisneros, Anibal, *Cordoba, Arg. Rep.*
Clapp, Percy Edwin, *North Rush*
Clark, Bertha Winifred, A.B. (Geo. Wash. Univ.), 1902, *Hamilton*
Clark, Kathleen Bell, *Davenport, Iowa*
Clay, Amelia, *Philadelphia, Pa.*
Clough, Bertha, M.E. (Lock Haven Nor.), 1895, A.B. (Columbia Univ.), 1903, *Lock Haven, Pa.*
Coe, Ralph Brewster, *Oxford*
Coe, William (Amzi), *Newfield*
Coelho, Afrodisio Sampaio, *Sao Paulo, Brazil*
Coffin, Fielder Juilliard, *Geneseo*
Colburn, Clare Lorimer, *Denver, Colo.*
Collin, John Bernhard, *Altoona, Pa.*
Collin, Karl Wilhelm, *Altoona, Pa.*
Collins, Mary Bradford, *Enfield, No. Car.*
Colson, Jane Wells, B.S. (Univ. of Nashville), 1903, L.S. (same), 1903, P.G. (S. C. Coll. of Pharmacy), 1904, *Charleston, S. C.*
Conant, Emily Ida, Pd.D. (N. Y. Univ.), 1891, *New York City*
Condry, Margaret Gertrude, *Lambertville, N. J.*
Conkling, Roscoe Peter, *Brockport*

Conners, Mary Frances, *Trenton, N. J.*
Cook, Charles Reed, *Jefferson City, Mo.*
Cook, Edith Bessie, *London, England*
Cook, Elizabeth Studdiford, *Madison, N. J.*
Cook, Fayette Andrus, *Ithaca*
Cooper, Robert John, *Aurora, Ill.*
Cope, Thomas Darlington, A.B. (Univ. of Peuna.), 1903, *Chester, Pa.*
Cornell, Charles Walter, Jr., *Elgin, Ill.*
Cornell, William Bouck, *Ithaca*
Corralan, Patricio, *Salta, Arg. Rep.*
Correa, Jose Alvarez, *Bananquilla, Colombia*
Correll, Hugh, *Canton, O.*
Costello, James Harry, *Elmira*
Coyle, Josephine, *Waterbury, Conn.*
Craighead, James Ray, B.A. (Williams Coll.), 1895, M.A. (same), 1898, *Atlantic City, N. J.*
Crampton, Guy Chester, A.B. (Princeton), 1904, A.M. (same), 1905, *Mobile, Ala.*
Crawford, Willard John, Jr., *Cleveland, O.*
Cresswell, Howell Scott, *Ottumwa, Iowa*
Crittenden, Eugene Casson, *Oswayo, Pa.*
Crosby, Mabel Elizabeth, *West Medford, Mass.*
Crosier, George Stanley, *Buffalo*
Cuervo, Manuel Victorion, *Havana, Cuba*
Curran, Isabelle Gladys, *Brooklyn*
Curran, Mary Thaddeus, *Brooklyn*
Cushing, Prentice, *East Orange, N. J.*
Dana, Harold Edward, *Brooklyn*
Davis, Arthur Cooke, *Cincinnati, O.*
Davis, Henry Emerson, *Peabody, Mass.*
Davis, Irland, *Washington, D. C.*
Davison, Charlotte Isabelle, A.B. (Wilson Coll.), 1897, *Chambersburg, Pa.*
Day, Irvin Williams, *Utica*
Dean, Philip Redfield, A.B. (Harvard), A.M. (Columbia), 1904, *Newark, N J.*
DeGarmo, Robert Max, *Ithaca*
Delcasse, Georges, *Buenos Aires, Arg. Rep.*
Dennett, Helen Mae, *Brooklyn*
Denniston, Frank, *New York City*
Deshon, John James, *Chenandego, Nicaragua, C. A.*
Deyo, Bertha, A.B., 1902, *Gardiner*
Dimmitt, Roy Lester, B.S. (Univ. of Mo.), 1901, *Birmingham, Ala.*

Dods, John Palliser, *Fredonia*
Donaldson, Roderick Douglas, *New York City*
Donaldson, Salle Ould, *Ithaca*
Donner, Jessie Burwell, *Walnut Creek, Calif.*
Doren, Jane Macartney, A.B. (Oberlin), 1896, *Columbus, O.*
Drury, Alexander Getchell, *Cincinnati, O.*
DuBois, Henry Pastor, *Hallstead, Pa.*
Duggar, Fannie Camp, *Auburn, Ala.*
Duggar, John Frederic, B.S. (Miss. Agr. and Mech. Coll.), 1887, M.S. (same), 1888, *Auburn. Ala.*
Dulaney, Stanley Joe, *Paris, Texas*
Dunn, Grace Agnes, *Trenton, N. J.*
Durand, William Levenworth, *Ithaca*
Durham, William Leigh, B.S., 1902, *Watsontown, Pa.*
Eagan, George Arthur, *Washington, D. C.*
Earle, Edwin, Jr., *Detroit, Mich.*
Earle, Harold Asbury, *Brooklyn*
Eckhardt, Carl Conrad, Ph.B. (Ohio State Univ.), 1902, A.M. (Univ. of Mich.), 1904, *Columbia, Mo.*
Edge, Alfred Joshua, *Darlington, Md.*
Edmond, Sarah, *Cohocton*
Efinger, Philip Charles, *Lancaster, Pa.*
Elwood, Frank Edwin, *Scranton, Pa.*
Elwood, James Lawrence, *Rochester*
Emmons, Fred Earl, A.B., 1902, *Spencer*
Entwisle, Edward Fussell, *Johnstown, Pa.*
Espiritu, Jose, *Washington, D. C.*
Evans, Emily Abigail, A.B. (Woman's Coll. Baltimore), 1904, *Reisterstown, Md.*
Evans, Julia Anne, *Albany*
Everson, Anna Emma, *Mamaroneck*
Faddis, Jennie Rebecca, *Stevens Point, Wis.*
Fagundes, Adalberto Almada, *Sao Paulo, Brazil*
Fagundes, Lupercio, *Sao Paulo, Brazil*
Fairlamb, Gertrude May, M.E. (West Chester Nor.), 1898, *Media, Pa.*
Farrar, Edith Barnes, *New Orleans, La.*
Fenger, Frederick Abilgaard, *Winnetka, Ill.*
Fernandez, Vincent, *Cuyo, Paragua, P. I.*
Fleck, Aaron, *Altoona, Pa.*
Flood, James Douglas, *Chicago, Ill.*
Folger, Paul, *Geneva*
Forbes, William Henry, *Philadelphia, Pa.*
Ford, Edward Hyndman, *Marshwood, Pa.*

Ford, Ella May, B.S. (Harvard), 1901, M.A. (same), 1901, *Washington, D. C.*
Foren, Harriet Dickerson, Ph.B. (Alfred Univ.), 1900, *Cedarhurst*
Frary, Marie Harriet, *Friendship*
Frazee, Youle Townsend, *Montclair, N. J.*
Free, Edward Elway, *Du Bois, Pa.*
Fretz, Clair Wiliiam, Ph.D. (Wooster Univ.), 1903. *New Cumberland, W. Va.*
Friend, Robert Elias, *Milwaukee, Wis.*
Fringer, Samuel Hall Tagart, *Taneytown, Md.*
Fuld, Horace, *New York City*
Fung, Hing Kwai, *Canton, China*
Gache, Caesar Thomas, *Buenos Aires, Agr. Rep.*
Gage, Stanley Ashton, B.S. (City Coll. of N. Y.), 1894, *New York City*
Garity, Thomas Malcolm, *Brooklyn*
Garner, Enoch Francis, M.E. (Md. Agr. Coll.), 1903, *Duley, Md.*
Gehring, Victor Marshall, *Portland, Me.*
Gelien, Johanna, *Ithaca*
George, Gilbert Gibson, *Rockaway Beach*
Gibson, Edwin Fred, *Norwich*
Gifford, Orrin Philip, Jr., *Buffalo*
Gillette, William De Witt, *Mt. Vernon*
Gillmore, Gertrude Assheton, A.B., 1901, *Detroit, Mich.*
Gillmour, Augusta, A.B. (N. Y. Normal Coll.), 1898, *New York City*
Gillmour, Emily Jane, *New York City*
Goodman, Timothy Seymour, *Hamilton, O.*
Goodwin, Frank Perry, *Jamestown*
Gordon, Jacob, *Brooklyn*
Gordon, Thomas Croxton, B.S. (Va. Mil. Inst.), 1904, *Richmond, Va.*
Gould, Clarence Allen, *Seneca Falls*
Green, Sarah Letty, B.S., 1895, *Granville, O.*
Green, Vennis Aldrix, A.B. (Grove City Coll.), 1895, A.M. (same), 1897, *West Sunbury, Pa.*
Gregory, Emily Ray, A.B. (Wellesley), 1885, A.M. (Univ. of Pa.), 1896, Ph.D. (Univ. of Chicago), 1899, *Philadelphia, Pa.*
Gurnee, Marie Emily, *Brooklyn*
Hackett, Holland Berkeley, *Easton, Pa.*
Hackett, Irene Alice, *Boston, Mass.*
Hale, Rodgers, *Towanda, Pa.*
Halle, Jerome Norman, *Cleveland, O.*
Hallock, Charles Wood, *Pleasantville*
Harding, Claude Corydon, *Wellsboro, Pa.*
Harpending, Pierre, *Dundee*

Haskell, Clifton Roy, *Portland, Me.*
Hathaway, Henry Mona, *Seattle, Wash.*
Hayes, Samuel Perkins, B.A. (Amherst), 1896, B.D. (Union Sem.), 1902, M.A. (Columbla,) 1902, *Rochester*
Hecox, Clarence Wirt, *Washington, D. C.*
Heilman, Fred Lee, *Greenville, Pa.*
Henderson, Ethelyn, *Paterson, N. J.*
Hendren, Linville Laurentine, B.A. (Trinity Coll.), 1900, M.A. (same), 1901, *New Berne, N. C.*
Henry, William James, *Wayne, Pa.*
Herget, Albert Marvin, *Baton Rouge, La.*
Hewins, Nellie Priscilla, B.S. (Cornell), 1898, M.A. (Columbia), 1900, *Elmhurst*
Hewitt, John Marshall, *Marianna, Ark.*
Hicks, William Edgar, *Cedarhurst*
Hildreth, Norman Evans, *Flushing*
Hill, Ray Vernon, A.B. (Oberlin Coll.), 1902, *Fort Dodge, Iowa*
Hilmer, Doretta Caroline, *New York City*
Hilterbrand, Oscar Raymond, *Kingston*
Hitchcock, George Gale, A.B. (Univ. of Nebr.), 1883, *Claremont, Calif.*
Hoage, Norma, *Brooklyn*
Hocson, Felix, B.A. (Ateneo of Manila), 1902, *Manila, P. I.*
Hodge, James Thacher, *Cincinnati, O.*
Hodges, Leonie Rose, *New York City*
Hollenbeck, Harry Bell, *Avon*
Holmes, Henry Everett, *Troy*
Holmes, Webster Balkwill, *Cincinnati, O.*
Hook, Warren Howard, *Ithaca*
Hooper, Franklyn Dana, *Brooklyn*
Hoover, Jennie Ellen, *Lockport*
Hopper, Walter Everett, *Newark, N. J.*
Hoshino, Junkichi, *Osaka, Japan*
Howard, Otis Walworth, *Omaha, Neb.*
Howe, Eugene Clarence, A.B., 1904, *Brooklyn*
Howell, Ophelia Douglass, *Goldsboro, N. C.*
Howitt, John Eaton, B.S.A. (Toronto Univ.), 1905, *Guelph, Ont., Canada*
Hubbell, Charles Wesley, *Pittston, Pa.*
Hudson, Anna Meyer, *Canandaigua*
Husted, Clifford Mackay, *Buffalo*
Hustis, Roland Ludington, *Milwaukee, Wis.*
Hutchinson, Alfred Henry, *Chicago, Ill.*

Hyde, Bertha Child, B.A. (Mt. Holyoke Coll.), 1898, *North Woodstock, Conn.*
Illich, Louis Luke, A.B. (Coll. City of N. Y.), 1903, *New York City*
Illustre, Eustacio, *Batangas, P. I.*
Jacoby, Hurlbut Smith, *Ithaca*
Jacoby, John Vincent, *Ithaca*
Jahn, Gustave Adolph, Jr., *Brooklyn*
Jenkinson, Richard Dale, *Bellevue, Pa.*
Jessup, George Penney, *Quogue*
Johnson, Bruce Smith, *McGraw*
Johnson, Elisha Martin, *Olean*
Johnson, George Friedman, *Albany*
Johnson, Harvey Fletcher, *Ithaca*
Johnson, Marcus Rodney, *Erie, Pa.*
Johnson, Orson Tracy, Jr., *Riverside, Calif.*
Johnston, Bessie Maclay, B.S. (Knox Coll.), 1885, *Springfield, So. Dak.*
Johnston, James Markham Ambler, B.S. (Va. Poly. Inst.), 1904, M.E. (same), 1905, *Greenville, Miss.*
Johnston, Margaret, *Salem, Va.*
Jones, Ernest Wilbur, *Gainesville*
Jones, Lucy Thweatt, *Salem, Va.*
Jones, Mary Emma, *Rockaway, N. J.*
Joslyn, Royal Cuthbert, *Jersey City Heights, N. J.*
Justin, Joel De Witt, *Rochester*
Kahanowitz, Samuel, *Greensburg, Pa.*
Karlson, Claus Emanuel, *Altoona, Pa.*
Keane, Michael Bernard, *New York City*
Keeler, George Greene, *Chicago, Ill.*
Kelker, Thomas Mahon, *Harrisburg, Pa.*
Kellogg, James Gifford, *Chicago, Ill.*
Kelsey, Joel Smith, Jr., *Flushing*
Kenyon, Benjamin, *Scipio*
Kirby, Sarah, *Goldsborough, N. C.*
Kitchel, Stanley, *Milwaukee, Wis.*
Knowlton, Robert Henry, *Buffalo*
Koo, Vi-kyuin Wellington, *Shanghai, China*
Korey. Abraham J, *New York City*
Kosminsky, Isaac Joseph, *Texarkana, Tex.*
Kronberg, Sol, A.B. (Coll. City of N. Y.), 1903, *New York City*
Lally, Ralph Richard, *Pittsburg, Pa.*
Lamb, Roy Dane, *Chicago, Ill.*

Lamberton, Albert Meredith, *Westfield, N. J.*
Landa, Francisco, *Habana, Cuba*
Lander, Clarence Haskell, B.S. (Univ. of Mich.), 1897, B.S. (Harvard), 1902, *Cleveland, O.*
Lansing, Alice Willoughby, *Plainfield, N. J.*
Lan Yanez, Edwardo, *Buenos Aires, Arg. Rep.*
Larkin, Katherine Veronica, *Ithaca*
Larrabure, Fernando, *Ithaca*
Larrabure, German, *Ithaca*
Lask, Clara, *New York City*
Lattin, Benton, *Ithaca*
Leary, Fred Gray, A.B. (Colgate Univ.), 1904, *Hamilton*
Leavenworth, Anna, *Eldred*
Leavitt, Arthur Harter, *Akron, O.*
Lee, Cazenove Gardner, Jr., *Washington, D. C.*
Lee, Charles Avery, Jr., *Chicago, Ill.*
Leffler, Leo Julius, *Brooklyn*
Lemmerz, Franz Joseph, *Geneseo*
Lente, Minnie Bellefeuille, *New York City*
Leon, Ricardo, *Oaxaca, Mexico*
Lesselbaum, Samuel, B.S. (Coll. City of N. Y.), 1901, *Brooklyn*
Levy, Clara, *Philadelphia, Pa.*
Levy, Elsa Esther, *Williamsport, Pa.*
Lindsey, Ethel, *Lockport*
Linsley, Charles Wells, *Oswego*
Lix-Klett, Ernesto, *Buenos Aires, Arg. Rep.*
Locke, Alice Ethel, *Waterbury, Conn.*
Lopez, Carlos, *Iloilo, P. I.*
Louis, Henry Charles Ernest, A.B. (Johns Hopkins Univ.), 1904, *Baltimore, Md.*
Love, Albert Joy, *Aurora, Ill.*
Loveland, Lewis Ira, A.B. (Amherst), 1896, *Lebanon, Pa.*
Loveland, Mary Hoyt, B.L. (Mt. Holyoke), 1897, *Morristown, N. J.*
Lucker, Frederick, *Brooklyn*
Lucker, Grover, *Brooklyn*
Lyndon, Sophie Harriet, *Fairport*
McCarthy, Ellen S, *Cortland*
McCook, George Wythe, Jr., *Steubenville, O.*
McCoy, Charles Everett, *Smethport, Pa.*
McDevitt, Anna Lauretta, *Brooklyn*
McDonald, Mary Isabel, Pd. M. (N. Y. Univ.), 1903, *New York City*
McFarland, Nannie Witherspoon, *Charlottesville, Va.*
Macfarlane, James William, Jr., *Pittsburg, Pa.*

McGeehan, Mary Frances, *New York City*
McGlone, John, A.B. (Johns Hopkins), 1904, *Baltimore, Md.*
MacIntyre, Edward Campbell, A.B. (Hamilton Coll.), 1905, *Johnstown*
MacKinlay, Ned Scofield, *Steamboat Springs, Colo.*
McLaughlin, John Miller, B.S. (Mt. Union Coll.), 1900, *Canal Fulton, O.*
McNamara, Helen Catherine, *Binghamton*
Macpherson, Leslie Mitchell, *Balranald, N. S. W., Australia*
MacRae, Margaret, *St. Paul, Minn.*
Madden, John Henry, *Buffalo*
Maddoch, Marion Frances, *Foxborough, Mass.*
Magoffin, Charles Frederick, *No. Tonawanda*
Magruder, Rosalie Stuart, A.B. (Bryn Mawr), 1904, *Annapolis, Md.*
Maine, Clarence, *Summit, N. J.*
Major, Horace Fairchild, *Ithaca*
Mantel, Frank Alphonse, *Auburn*
Marean, Maud L, *Scranton, Pa.*
Markley, Lawrence, *Chicago, Ill.*
Marsh, Charles Reed, *Philadelphia, Pa.*
Marshall, Agnes Mary, *Clayton*
Martinez, Christobal Antonio, *Homos, Coahmla, Mexico*
Maskings, Wilhelmina Josephine, *Philadelphia, Pa.*
Maughan, Allan, *Neutral Bay, Sydney, Australia*
Mechling, Mary Estelle, Ph.B. (Grove City Coll.), 1903, *Dayton, Pa.*
Mennen, William Gerhard, *Newark, N. J.*
Merkin, Abraham, *New York City*
Merrell, Caroline Wallace, A.B., 1902, *Philadelphia, Pa.*
Merriman, Eugene Duette, A.B., 1905, *Ithaca*
Meyers, Clara Elizabeth, *Welsh Run, Pa.*
Middleditch, Edna L, *South Orange, N J.*
Miller, Daniel, *Reading, Pa.*
Miller, Frances, *Cortland*
Miller, Frederick, *Mt. Vernon*
Mills, Gertrude Cartland, Ph.B. (Earlham Coll.), 1898, *Toronto, Can.*
Monnett, Laura, B.L. (Ohio Wesleyan), 1901, *Marion, O.*
Moore, Emmeline, *Churchville*
Moore, Kingman Colquitt, B.S. (Mercer Univ.), 1897, *Macon, Ga.*
Morrill, Hester Botsford, A.B. (Vassar), 1892, *Etna*
Morse, Hazen H, *New Rochelle*
Mosher, George Fred, *Kansas City, Mo.*
Mourning, Garland Hubbard, Jr., *Louisville, Ky.*

Mulroy, William Leo, *Marcellus*
Munoz, Jose Manuel, *Salasa, Pangasinan, P. I.*
Munschauer, Frederick Eugene, *Buffalo*
Munson, David Curtiss, *Medina*
Nash, Sue, *Hillsboro, No. Car.*
Naughton, John Augustine, A.B. (Fordham Coll.), 1902, Pd.B. (same), 1903, *Albany*
Nauss, George Murray, *Harrisburg, Pa.*
Neale, Harry Taylor, *Harrisburg, Pa.*
Nedham, Stanley Cromwell, *Perth Amboy, N. J.*
Nichols, De Witt Lethbridge, *Aurora, Ill.*
Nickerson, Ralph Richard, *Holyoke, Mass.*
North, Harold Diodate, *Cleveland, O.*
Nugent, Harold Arthur, *Kingston, Pa.*
Ogier, George Rufus, *Baltimore, Md.*
Ortiz de Zevallos, Emilio, *Lima, Peru*
Ortiz de Zevallos, Fernando, *Lima, Peru*
Orvis Warner Dayton, *New York City*
Otto, Henry Stuart, *Montclair, N. J.*
Owen, Charles Hundley, *Denniston, Va.*
Owens, Robert Stuart, *Brooklyn*
Page, Wilson Kingman, *Olean*
Palma, Tomas Estrada, *Havana, Cuba*
Pancoast, Joseph Wilmer, B.S. (Swarthmore Coll.), 1901, *Mickleton, N. J.*
Parmley, Harry Mark, *Mahanoy City, Pa.*
Parrish, Justin E, Jr., *Scranton, Pa.*
Patterson, Gus Harold, *Mansfield, O.*
Patteson, Sarah Gay, *Manchester, Va.*
Payne, Edward Duggan, C.E. (Princeton), 1905, *Athens, Pa.*
Peck, Fred Eldred, *Wolfville, N. S., Canada*
Peet, Cora Webb, *East Orange, N. J.*
Pegues, Boykin Witherspoon, B.S. (La. State Univ.) 1895, *Baton Rouge, La.*
Peirce, Clarence Andrew, *Ithaca*
Peirson, Jessie Burnham, *Ithaca*
Perky, Scott Hancock, *Ithaca*
Perrine, Charles, A.B., 1893, *Brooklyn*
Petrie, Samuel Leys, *No. Tonawanda*
Philips, Joseph Bond, *Kennett Square, Pa.*
Phillips, Sara Jay, A.B. (Vassar), 1897, A.M. (Columbia), 1899, *Brooklyn*

Phoenix, Lydia Ellen, B.E. (Mansfield Nor.), 1879, M.E. (Mansfield Nor.), 1881, A.B. (Oberlin), 1889, A.M. (Oberlin), 1892, M.O. (Emerson Coll. of Oratory), 1891, *Troy, Pa.*
Phyfe, Effie Janet, *Brooklyn*
Platt, Emilie Louise, *Brooklyn*
Porterfield, Allen Wilson, A.B. (West Va. Univ.), 1899, A.M. (same,) 1901, *Bedington, W. Va.*
Pottorf, John L G, A.B. (Mt. Union Coll.), 1903, *Salem, O.*
Powell, Harry Wheeler, B.S. (Coll. City of N. Y.), 1883, *Aurora*
Preston, Edwin Murlin, *Cortland*
Preston, Sylvester Cosgrave, *Pittsburg, Pa.*
Price, John Hosie, *Scranton, Pa.*
Price, Philip M, *Johnstown, Pa.*
Prince, Horace Free, *Bloomington, Ill.*
Pritchett, Eliza Esther, *Walbrook, Md*
Prussing, Harry Frederick, *Chicago, Ill.*
Pulsford, Jennie, *Irvington-on-Hudson*
Purtell, Thomas Stephen, *Elmhurst*
Putnam, Henry Sibley, *Chicago, Ill.*
Quay, Jean, A.B. (Western Reserve Univ.), 1905, *Cleveland, O.*
Quisumbing, Emilio, B.A. (I. Juan La Letran Coll., Manila), 1900. *Washington, D. C.*
Ramos, Justo Manio, *Calumpit, Bulacan, P. I*
Ramsey. Joseph Henry, *Howes Cave*
Rankin, George Atwater, *Ithaca*
Raphael, Rose Lena, B.A. (N. Y. Nor. Coll.), 1897, *New York City*
Reddich, Donald, B.A. (Wabash Coll.), 1905, *Noblesville, Ind.*
Reed, Harrison Pierce, *Milwaukee, Wis.*
Reed, Harry Clifford, *Ithaca*
Reed, William, *Hartford City, Ind.*
Reiber, Harry Paul, *Pittsburg, Pa.*
Rennert, Louise Catherine, A.B. (N. Y. Nor. Coll.), 1905, *New York City*
Rennert, Rosira Julia, A.M. (Columbia Univ.), 1901, *New York City*
Reyna, Jose Alviar, *Candon, Ilowo Terr., P. I.*
Reynolds, Virginia, L.I. (Oswego Nor.), 1887, *Kittanning, Pa.*
Rhodes, Amy Teagle, *Brooklyn*
Richens, (Lulie) Belle, *Auburn*
Richey, Frances Osmun, *Asbury, N. J.*
Richter, Martin Luther, Jr., B.S. in C.E. (Univ. of Ga.), 1904, *Madison, Ga.*
Rick, Charles Maderia, *Reading, Pa.*
Ridenour, John Schell, *Bedford, Pa.*

Riley, John Henry Traver, *Cohoes*
Rittenhouse, Charles Edwin, *Washington, D. C.*
Roach, Grace Adele, A.B., (N. Y. Normal Coll.), 1904, *New York City*
Roberts, Gertrude, *Wheeling, W. Va.*
Robinson, Charles Albert, Jr., A.B. (Johns Hopkins), 1903, *Baltimore, Md.*
Roe, Ralph Burt, *Ithaca*
Root, Louis Denman, *Syracuse*
Ross, George Hillard, *Edgewater, N. J.*
Rossman, Allen M, A.B., 1905, *Hudson*
Rothermel, Harry Peters, A.B. (Lafayette Coll.), 1901, *Reading, Pa.*
Roudebush, Roy Everett, A.B. (Indiana Univ.), 1903, *Warren, Ind.*
Rowland, William Samuel, *Washington, D. C.*
Rueff, Mabel Lilian, *Newark, N. J.*
Ruiz, Henry Cecil, *Macagua, Matanzas, Cuba*
Ruiz, Pelagio, *Laoag, Ilocos Norte, P. I.*
Ryan, Laurence Marvin, *Syracuse*
Sampson, Thomas Ashmore, A.B. (Westminster Coll.), 1901, A.M. (same), 1905, *Volant, Pa.*
Scarff, Mary Emily, *East Bethany*
Schaeffer, Jacob Parsons, B.E. (Keystone State Nor.), 1901, M.E. (same), 1903, *East Greenville, Pa.*
Schmid, Robert John, *Rochester, Minn.*
Schmuck, Oliver LeRoy, *Hanover, Pa.*
Schneucker, Elizabeth Salone, *Schnectady*
Schoff, Harold Kent, *Philadelphia*
Schraeder, Blanche Evelyn, *Towanda, Pa.*
Schurman, Robert, *Ithaca*
Schwab, Sophie, *Brooklyn*
Seaton, Sara, A.B. (Wellesley), 1896, *Cleveland, O.*
Seely, Hart Irving. *Spencer*
Serrano, Pedro, *Bacon, Sorsozon, P. I.*
Seyferth, Anna Bertha Sophie, *Washington, D. C.*
Shaw, Fred A, *Albion, Pa.*
Shea, James A, *Cortland*
Shelton, Frank M, B.S. (Mt. Union), 1899, *Pittsburg, Pa.*
Shepardson, (John) Everett, A.B. (Indiana Univ.), 1890, A.M. (same), 1892, *Los Angeles Calif.*
Shepherd, Susie Viola, *Columbia, Va.*
Sheridan, Thomas Harold *Chicago, Ill.*
Sherwood, Joseph James, *Niagara Falls*
Shideler, John Whittier, *Hillsboro, Kansas*
Shields, William Dickinson, *Shields, Pa.*

Shoemaker, Seth Whitney, *New York City*
Shute, Sarah Pierson, *Gloversville*
Sill, Amy Louise, *Cohoes*
Simon, Clara Therese, *Baltimore, Md.*
Sims, William Ernest, *Canton*
Sisam, Charles Herschel, A.B. (Univ. of Mich.), 1902, A.M. (Cornell), 1903, *Sloan, Iowa*
Skidmore, George Harrison, *Riverhead*
Slover, Minnie Elizabeth, *Brooklyn*
Smith, Florence Katharine, *Ithaca*
Smith, Frank Garrettson, *Brooklyn*
Smith, Gertrude, A.B. (Vassar), 1897, A.M. (same) 1903, *Portland, Me.*
Smith, Gertrude Heaton, *Haddonfield, N. J.*
Smith, Henry Edmond, *Baltimore, Md.*
Smith, Huron Herbert, B.S. (De Pauw Univ.), 1905, *Winchester, Ind.*
Smith, Jay Lewis, A.B., 1904, *Port Jervis*
Smith, Lewis Edgar, M.E. (Juaniata Coll.), 1902, *Greencastle, Pa.*
Smith, Mark Elmer, *Erie, Pa.*
Smith, Ray Mosher, *Spencer*
Smith, Victor Edward, *Bayonne, N.J.*
Spooner, Charles Stockman, *Middletown*
Sprague, Mary Winifred, A.B., 1904, *New Berlin*
Stanton, Robert Brewster, Jr., *East Setauket*
Stephens, Muriel, *Ithaca*
Stewart, Sarah Dysart, *New York City*
Stillman, Edwin Arthur, *Brooklyn*
Stone, Imogen, A.B., 1903, A.M., 1903, *New Orleans, La.*
Stone, Roy Lynne, *Potsdam*
Storm, Walter Woolsey, *Wilmington, N.C.*
Stotlar, Albert, B.A. (Boston Univ.) 1898, *New York City*
Straus, Aubrey Hamilton, *Richmond, Va.*
Stull, Anna May, *El Mora, N. J.*
Stull, Charles Rodman, *Ridley Park, Pa.*
Sumner, Grover Cleveland, *Brooklyn*
Sun, Kia Lok Carlos, *Shanghai, China*
Sun, Yu-Fong Louis, *Shanghai, China*
Sunderville, Earl, *Newark*
Sunga, Benito, *Calumpit, Bulacan, P. R.*
Sutton, Henry Craig, *Haverford, Pa.*
Sweeney, Edward Aloysius, *Brooklyn*
Sweet, (Flora) Elsie, *Lockport*
Syvret, Clara Maud, A.B. (Mt. Holyoke), 1898, *Spencer*

Taylor, Helen, A.B. (N. Y. City Nor. Coll.), 1902, *New York City*
Teall, Sarah Sumner, *Syracuse*
Thomas, Allen Job, *Ithaca*
Thomas, Benjamin James, *Coleraine, O.*
Thomas, Owen Alexander, *Oakmont, Pa.*
Thompson, Harry Ashton, *New York City*
Tibirica, Joao, *Sao Paulo, Brazil*
Tillson, Charles Burrett, *Maple Grove*
Tong, Yau Hang, *Canton, China*
Tourison, Charles Edward, *Philadelphia, Pa.*
Townsend, Russell Everett, *Ithaca*
Tripp, Donald Hatfield, *North Vernon, Ind.*
Trott, John Winslow, *Niagara Falls*
Turner, Ralph Coit, *Marietta, O.*
Turner, Robert Patterson, *St. Louis, Mo.*
Tyng, Elizabeth McJimsey, B.S. (N. Y. Nor. Coll.), 1894, A.B. (Cornell), 1903, *New York City*
Uhrbrock, Richard Henry, Ph.B. (Ill. Wesleyan), 1898, *Baltimore, Md.*
Urrutia, Fermin, *La Plata, Arg. Rep.*
Valentine, Florence Ellett, *Brooklyn*
VanFleet, Herman H, *Denver, Colo.*
Vannan, Paul Antrim, *Riverside, Pa.*
VanNostrand, Nora A, B.S. (Syracuse Univ.), 1904, *Schenectady*
Vincent, Charles Ray, *Odell, Ill.*
Waite, Louise Garbutt, *Hartford, Conn.*
Walbridge, Mabel Harriet, B.A. (Mc Gill Univ.), 1897, *Montreal, Canada*
Walker, Maude Anna, *Schenectady*
Wallace, William Thompson, *Hastings, Mich.*
Waller, Elmer Briton, A.B. (Union Coll.), 1882, A.M. (same), 1892, *Maryville, Tenn.*
Wallower, Edgar Zollinger, C.E. (Princeton), 1905, *Harrisburg, Pa.*
Walsh, Agnes Lucille, *New York City*
Ward, Clarence Sidney, *Kelley's Island, O.*
Ward, Harry Jay, *Peoria, Ill.*
Ward, Marguerite Hargrave, *Brooklyn*
Warner, Raymond Curtis, *Chicago, Ill.*
Watson, William Harry, *Pittston, Pa.*
Way, Cassius, B.Agr. (Conn. Agr. Coll.), 1899, *Ithaca*
Webster, Clarinda Augusta, *London, England*
Webster, Frederick Volney, A.M. (Central Univ.), 1902, *Horseheads*
Weeks, Annie Laurie, *Newtonville, Mass.*

Wegman, Ernest Conrad, *Ithaca*
Weil, Gertrude, B.L. (Smith Coll.), 1901, *Goldsboro, N. C.*
Welch, Willis Yardley, *Clarion, Pa.*
Weld, Laura Hayden, B.Ph. in Ped. (Univ. of Wis.), 1899, *River Falls, Wis.*
Weller, Arthur Douglas, *Cincinnati, O.*
Wesson, Douglas Bertram, *Springfield, Mass.*
Wetherbee, Ashur Url, *Ithaca*
Wheat, Grace Alice, *Brooklyn*
Whitcomb, Don Salmon, A.B., 1905, *Brooklyn*
White, Gorrell Robert, A.B., 1905, *Auburn*
Whitney, Cornelia, *Washington, D. C.*
Whitson, Olive Louella, B.E. (West Chester Nor.), 1902, *Ithaca*
Wienhoeber, William Herman, *Chicago, Ill.*
Wight, Frank Brandon, A.B. (Boston Univ.), 1896, *Berlin, N. H.*
Wilder, Edward Tucker, *Elmhurst, Ill.*
Wilkinson, (Mary) Ella, *Elkhart, Ind.*
Williams, Ada Bundy, *Chicago, Ill.*
Williams, Benjamin Oliver, *Denver, Colo.*
Williams, Samuel, *Salt Lake City, Utah.*
Willison, Susie Myers, *Cincinnati, O.*
Wilm, Emil Carl Kunibert, A.M. (Southwestern Univ.), 1902, Ph.D. (Cornell), 1905. *Georgetown, Texas*
Winslow, John, *Ithaca*
Wisansky, Louis, B.S. (Coll. City of N. Y.), 1901, *New York City*
Wood, Charles Bryant Drake, *Wilkes-Barre, Pa.*
Wood, Frank Travers, B.S.(Va. Mil. Inst.), 1904, *Richmond, Va.*
Woodward, Nellie Rebecca, *Morrestown, Pa.*
Worden, Florence, A.B., 1904, *Ithaca*
Worden, Harold Everett, *Ithaca*
Ycasiano-Roxas, Francisco, B.A. (Ateneo de Manila), 1904, *Bulacan, P. I.*
Yerkes, Helen Keith, *Philadelphia, Pa.*
Yih, Koliang, *Toochow, Fookien, China.*
van Zandt, Fanny Brice, *Middletown*
Zorn, Freda, *Brooklyn*

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 alumni formed an organization under the name of the Associate Alumni of Cornell University, declaring the object of the association 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. In 1903, the Association became incorporated, under the general laws of the State of New York, under the name of the Associate Alumni of Cornell University for the same purposes for which it was originally organized, the certificate of incorporation being dated May 19, 1903. At the annual meeting in June, 1903, a revision of the by-laws, embodying such changes as were made necessary by the incorporation of the association, was submitted by the directors and adopted by the association.

BY-LAWS OF THE ASSOCIATE ALUMNI OF CORNELL UNIVERSITY.

ADOPTED JUNE, 1903.

1. All graduates of this University, who in 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.

2. 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 and (6) five persons who, together with the president and treasurer shall constitute the directors of the association.

3. This association shall meet annually on the day preceding Commencement, at such hour as the Board of Directors shall determine.

4. Any proposition to alter or amend these By-Laws must be made at a regular meeting and have the assent of two-thirds of the members present.

5. There shall be two standing committees : an auditing committee, and a canvassing board.

6. The auditing committee shall consist of three members, to be elected by the association at one ballot, the three members receiving the highest number of votes to be deemed and taken to be chosen.

7. The canvassing board shall consist of five members. Two shall be elected by a plurality vote at each annual meeting ; two shall be appointed by the Board of Directors, after the nominations of candidates for alumni trustees have been announced ; the fifth shall be appointed by these four.

8. The order of business at each regular meeting shall be as follows :

I. The secretary shall ascertaiu by roll call or otherwise the names of the members present.

II. Reading the minutes of the last meeting.

III. Report of the canvassing board ; declaration of the result of the ballot by the president ; action thereon by the association, if necessary.

IV. Appointment of committee for the nomination of officers and committees—such nominating committee to consist of one member from each group entitled to a vice-president.

V. Treasurer's report and report of auditing committee.

VI. Report of the Board of Directors.

VII. Reports of special committees.

VIII. Miscellaneous business.

IX. Alumni trustee report or reports.

X. Report of nominating committee and election of officers and committees.

XI. Adjournment.

9. It shall be the duty of the corresponding secretary to keep a list of the graduates and their post office addresses, to notify each member elected to an office or a committee of his election, and to send to each graduate a notification of the time of the meeting other than the regular annual meeting, and of other exercises to take place under the auspices of the association.

10. The duties of the recording secretary shall be to keep the record and report the proceedings of the association.

11. All officers and members of committees shall be elected by a plurality vote of those present at the meetings and voting.

12. At this meeting there shall be elected five directors, the terms of two of whom shall expire at the annual meeting in 1904, two in 1905 and one in 1906; and in the future the term of each director shall be three years.

13. All other officers of this association shall hold their office for one year from and after their election.

14. In the absence of the president a vice-president shall preside, and the right to the chair shall be according to the seniority of the class to which the vice-presidents present shall belong.

15 In all meetings of the association the members present shall constitute a quorum.

16. The annual dues of membership in the Associate Alumni shall be one dollar, payable to the treasurer at each annual meeting; but any alumnus who shall pay to the treasurer ten dollars at one time shall thereafter be exempt from the payment of annual dues. No printed document of the association shall be sent to any member who has not complied with the above regulation.

17. Each trustee representing the alumni shall make a written report to the association at the end of his term of office, and such report may be made either jointly or separately by the retiring trustees.

18. Such report or reports shall be printed by the association, but shall not be considered as an expression of the official opinion of the association.

19. There is established an alumni bureau for the promotion of the interests of graduates or other ex-students of the University in securing positions.

20. The alumni bureau shall be under the general oversight of the Board of Directors of the association and the special charge of the Registrar of the University.

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 alumnus 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 de-

partments 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 1905-6.

President—Albert H. Sewell, '71.

Vice-Presidents—Wilmot M. Smith, '74; Frederic W. Noyes, '76; Ira A. Place, '81; Charles H. Thurber '86; Frank A. Barton, '91; Charles H. Rammelkamp, '96; James O'Malley, '01.

Corresponding Secretary—Charles H. Hull, '86.

Recording Secretary—George W. Harris, '73.

Treasurer—S. Edwin Banks, '95.

Directors—Albert H. Sewell, '71; S. Edwin Banks, '95; George W. Harris, '73; Mynderse Van Cleef, '74; Jared T. Newmau, '75; Ernest W. Huffcut, '84; Charles D. Bostwick, '92.

Auditing Committee—William H. Smith, '73; Charles E. Treman, '89; George S. Tarbell, '91.

Canvassing Board for Trustees Election—Charles L. Crandall, '72; Clark S. Northup, '93; remaining members to be appointed as directed in the By-Laws.

Officers of Local Alumni Associations.

(As last reported.)

THE CORNELL CLUB OF SYRACUSE.

President—Frank H. Hiscock, '75.
Secretary—A. J. McMahon, '97.

NORTHWESTERN ASSOCIATION.

President—O. L. Taylor, '81.
Secretary—E. H. Crooker, '83, Minn. Loan and Trust Bldg., Minneapolis, 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—S. P. Thomas, '72, 49 William St., New York City.
Secretary—H. Hasbrouck, '90, 51 Nassau St., New York City.

NORTHEASTERN PENNSYLVANIA ASSOCIATION.

President—J. S. Pettebone, '93.
Secretary—C. E. Murray, '03, Wilkes-Barre, Pa.

THE CORNELL CLUB OF PHILADELPHIA.

President— Clarence Beebe, '73.
Secretary—E. B. Carter, '99, 236 Winona Ave., Germantown, Pa.

DISTRICT OF COLUMBIA ASSOCIATION.

President—D. E. Salmon, '72.
Secretary—L. C. Graton, '00, 1330 F St., N. W., Washington, D. C.

CORNELL ALUMNI ASSOCIATION OF BUFFALO.

President—Dr. C. S. Jones, '84.
Secretary—J. L. Tiernon, Jr., '95.

ROCKY MOUNTAIN CORNELL ASSOCIATION.

President—H. C. Davis, '90.
Secretary—G. O. Winters, '02, 830 Cooper Bldg., Denver, Colo.

CHICAGO ASSOCIATION.

President—J. K. Cady, '76.
Secretary—J. R. Bensley, '00, 3933 Ellis Ave., Chicago, 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—W. W. Kinsley, '01,
Secretary—H. A. Mock, '98, Rochester, N. Y.

SOUTHERN TIER ASSOCIATION.

President—George McCann, '86.
Secretary—Isaac H. Levy, '01, Elmira, N. Y.

CORNELL CLUB OF WESTERN PENNSYLVANIA.

President—Frank Thornberg, '78.
Secretary—Edward L. Wilder, '02.

CORNELL CLUB OF BINGHAMTON.

President—C. G. Wagner, '77.
Secretary—R. B. Sears, '03.

CORNELL CLUB OF CALIFORNIA.

President—D. S. Jordan, '72.
Secretary—C. L. Cory, '91, Berkeley, Calif.

CORNELL CLUB OF LONDON.

President—O. Shiras, '97.
Secretary—S. B. Fortenbaugh, '90, Underground Elect. Ry. Co., London.

JAMESTOWN ASSOCIATION.

President—C. H. Wiborg, '97.
Secretary—Albert S. Price, '01.

THE CORNELL WOMEN GRADUATES' ASSOCIATION.

President—Mrs. B. S. Cushman, '96.
Secretary—Miss Julia W. Mack, '01.
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, '77.
Secretary—M. M. Odell, '97.

DETROIT ALUMNI ASSOCIATION.

President—E. E. Haskell, '79.
Secretary—S. C. Root, '01.

NIAGARA FALLS ALUMNI ASSOCIATION.

President—Eugene Cary, '78.
Secretary—F. L. Lovelace, '80, Niagara Falls, N. Y.

THE CORNELL CLUB OF ST. LOUIS.

President—W. B. Ittner, '87.
Secretary—K. E. White, '01.

THE CORNELL UNIVERSITY ASSOCIATION OF DELAWARE.

President—G. R. Thompson, '75, Wilmington, Del.
Secretary—A. D. Warner, Jr., 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.

CORNELL ALUMNI ASSOCIATION OF IOWA.

President—Austen Burt, '00.
Secretary—H. B. Plumb, '02.

THE CORNELL CLUB OF MEXICO.

President—
Secretary—J. G. Shirley, '03, 1919 Narango St., City of Mexico.

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 Board of Directors 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.

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 the University Library.

CLASS OF 1884 :—Portrait of Professor Charles Chauncey Shackford, A.M., in the 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*, pp. 67 and 120.

CLASS OF 1890 :—Cornell Boat House.

CLASS OF 1891 :—The '91 Memorial Fund for Sick Students.

CLASS OF 1892 :—The Witherbee Memorial Club House at Percy Field.

CLASS OF 1893 :—The Interscholastic League Prizes in Athletics.

CLASS OF 1894 :—The '94 Memorial Prize in Debate. *See University Register*, pp. 67 and 121.

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.

CLASS OF 1903 :—Gift toward the establishment of an Athletic Field.

CLASS OF 1903 (College of Law) ;—Portraits of Justice Rufus W. Peckham and Joseph H. Choate.

CLASS OF 1904 :—Gift toward the establishment of an Endowment Fund.

CLASS OF 1904 (College of Law) :—Portraits of James C. Carter and Elihu Root.

CLASS OF 1905 :—Gift toward the establishment of an Alumni Hall.

CLASS OF 1905 :—(College of Law) :—Portraits of Abraham Lincoln and Thomas M. Cooley.

THE CORNELL ASSOCIATION OF CLASS SECRETARIES.

OFFICERS FOR 1905–1906.

President—WILLIAM FITCH ATKINSON, '95.
Vice-President—EDWARD LEAMINGTON NICHOLS, '75.
Treasurer—CHARLES DIBBLE BOSTWICK, '92.
Secretary—WILLIAM JOHN NORTON, '02.

CONSTITUTION.

ADOPTED JUNE 20, 1905.

I. NAME.

The name shall be "The Cornell Association of Class Secretaries."

II. OFFICERS.

The officers of the Association shall be :

1. A President whose duties shall be those of presiding officer and who shall also be *ex-officio* member of the Executive Committee.
2. A Vice-President who shall, in the absence of the President, act as presiding officer.
3. A Treasurer who shall collect the annual dues and keep the accounts of the Association.
4. A Secretary who shall perform the usual duties of that office. He shall also be a member of the Executive Committee, and shall act as Chairman of that Committee.
5. Three members of the Executive Committee.

III. EXECUTIVE COMMITTEE.

The Executive Committee shall consist of the President and the Secretary, *ex-officio*, and three other members. The Secretary of this Association shall act as Chairman of this Committee. The Executive Committee shall be trusted with the general management of the Association. It shall have the power to appoint special committees from time to time, and act upon the reports submitted by such committees, and it shall be its duty to receive suggestions from members and take action upon them. It shall, if possible, take annual action looking toward the appointing of efficient Class Secretaries by the graduating classes of Cornell University.

IV. MEETINGS AND ELECTIONS.

There shall be annual business meetings held in New York City on some day in the month of February of each year, and there shall also be an annual meeting in Ithaca on some day in the month of June of each year, and at this meeting shall be held the annual election of officers and members of the Executive Committee

V. MEMBERSHIP.

The Active Membership of this Association shall consist of the Class Secretaries of Cornell University, and one member from the Alumni of the Medical School in New York City.

There shall be an Honorary Membership of such men as may from time to time be elected at the regular meetings.

VI. DUES.

The Annual Dues for all members shall be Two Dollars ($2.00) payable at the annual meeting in February in each year.

VII. AMENDMENTS.

Amendments may be made at any annual business meeting of the Association by a two-thirds vote of those present. Notice setting out the proposed amendment shall be sent at least ten days before such meeting addressed to each member of the Association.

CLASS SECRETARIES.

1869—Morris Lyon Buchwalter, Carew Bldg., Cincinnati, Ohio.
1870—Samuel Dumont Halliday, Ithaca, N. Y.
1871—Robert Goodloe Harper Speed, Ithaca, N. Y.
1872—Charles Lee Crandall, Ithaca, N. Y.
1873—Edwin Gillette, Ithaca, N. Y.
1874—John Henry Comstock, Ithaca, N. Y.
1875—Edward Leamington Nichols, Ithaca, N. Y.
1876—Eugene Frayer, 141 Broadway, New York City.
1877—Charles Baker Mandeville, Ithaca, N. Y.
1878—Robert Henry Treman, Ithaca, N. Y.
1879—Walter Craig Kerr, 10 Bridge St., New York City.
1880—Frank Irvine, Ithaca, N. Y.
1881—George Lincoln Burr, Ithaca, N. Y.
1882—Norton Townsend Horr, 1513 Williamson Bldg., Cleveland, O.
1883—Franklin Matthews, New York *Sun*, New York City.
1884—Harry Pelouze de Forest, Hotel Somerset, 150 West 47th St., New York City.
1885—Robert James Eidlitz, 489 Fifth Avenue, New York City.

1886—Algernon Sidney Norton, 256 Broadway, New York City.
1887—Herbert Marlow Lovell, Elmira, N. Y.
1888—Willard Winfield Rowlee, Ithaca, N. Y.
1889—Henry Neely Ogden, Ithaca, N. Y.
1890—Charles James Miller, Newfane, N. Y.
1891—Willard Henry Austen, Ithaca, N. Y.
1892—Charles Dibble Bostwick, Ithaca, N. Y.
1893—Clark Sutherland Northup, Ithaca, N. Y.
1894—Elmer Ellsworth Bogart, Ithaca, N. Y.
1895—William Fitch Atkinson, 44 Court St., Brooklyn, N. Y.
1896—George Solomon Tompkins, 381 Green Ave., New York City.
1897—Jervis Langdon, Elmira, N. Y.
1898—Jesse Fuller, Jr., 166 Montague St., Brooklyn, N. Y.
1899—Norman Judd Gould, Seneca Falls, N. Y.
1900—George Harper Young, 314 Hepburn St., Williamsport, Pa.
1901—Heatley Green, 42 Woodward Ave., Terrace, Detroit, Mich.
1902—William John Norton, 58 West 45th St., New York City.
1903—Porter Raymond Lee, 50 Gates Circle, Buffalo, N. Y.
1904—Cecil Jarvis Swan, 66 West 35th St., New York City.
1905—Harold Jay Richardson, Lowville, N. Y.

HONORARY MEMBERS.

David Fletcher Hoy, Ithaca, N. Y.
Charles Edward Treman, Ithaca, N. Y.
John Lawson Senior, Ithaca, N. Y.

THIRTY-SEVENTH ANNUAL COMMENCEMENT.

June 22, 1905.

DEGREES CONFERRED.

FIRST DEGREES.

Bachelors of Arts.

William Paul Allen,
Edward Althaus, Jr.,
Clara Selkreg Apgar,
Josephine Adair Andrews,
William Wright Baldwin, Jr.,
Caroline Frances Barnes,
Ellis Abram Bates,
Frances Louise Bell,
Fred Lee Bennett,
Robert Palmiter Bennett,
Edward Thomas Berry,
Francesco Bianchi,
Nellie Holmes Bingham,
Harry Birchenough,
Wheeler Scott Bishop,
George Charles Boldt, Jr.,
Helen Elizabeth Branley,
Kenneth Doty Brown,
Stanley Doty Brown,
Henry Weare Bryant,
Merritt Coleman Burd,
Roderick Sedgwick Burlingame,
Christiana Busbee, A.B.,
Bert S Butler,
Robert Paul Butler,
Arthur Dutton Camp,
Isaac Chadowitz,
George Mills Chapman,
LeGrand Chase,
Edith Garfield Chesebrough,
Elizabeth Hoyt Church,
Emily Anna Clark,
John Porter Clark,
Daniel Clinger, Jr.,
Morris Joseph Clurman,
Grace Elizabeth Coman,
Harold Elverton Crissey,
Eugene Casson Crittenden,
Frederick Sharer Crofts,
Cyrus Richard Crosby,
Carolyn Hawley Crossett,
George Cresswell Davis,
Henry Strong Denison,
Rose Rudolph Donk,
Alice Oakey Durland,
Franklin Edgerton, 2d,
Ray Arthur Edson,
Margaret Whitbeck Edwards,
Olive Ruth Edwards,
Howard Ehrich,
Ethel Freda Elliott,
Marion Winifred Elliott,
Arthur Carson Ertz Berger,
Frances Elizabeth Evans,
Jessie Redmona Fauset,
Charlotte Clementine Faust,

Lizzie May Ferguson,
Walter S Fox,
Abraham Abbey Freedlander,
Mabel Eleanor Fuller,
William Wallace Gail,
George Leal Genung,
Edward Henry Germann,
Gaylord Willis Graves,
Max Greenberg,
Ernest Henry Greenwood,
Harry E Harding,
Mitchell Harris,
Sadie Harris,
Hazel May Hatfield,
Frank Hawkins,
Sydney Lester Heath,
Cherrie Marie Herder,
William Arthur Hillebrand,
Wallace Trevor Holliday,
Donald Dinsmore Hoover,
Stanley Granger Horn,
Florence Dora Iugham,
Herbert Spencer Jackson,
Mary Emma Jewett,
Frances Ethel Johnson,
William Robert Johnston,
Raymond Watson Jones,
Arthur Rubel Keith,
Earl Hewes Kelsey,
Weston Maynard Kelsey,
Adeline Carrie Kiep,
Josette Marie Kinavan,
Burt Persons Kirkland,
Mathilda Anna Koehler,
Sophia Wilhelmine Lambert,
Henry Julian Lathrop,
Allan S Lehman,
Bert Campfield Leonard,
Lulu Jean Lidgerwood,
Lura May Locke,
Mabel Locke,
Hendrik Willem van Loon,
James Nicholas Lorenz,
Alice Margaret McCarthy,
Bernard Benedict McGinnis,
Florence Lucinda McKay,
Joseph Augustine McKenna,
Etta McTammany,
Thomas Bayne Marshall,
Ross Gilmore Marvin,
Mortimer Francis Mehling,
Eugene Duette Merriman,
Anna Teresa Messer,
Matilda Caroline Meyer,
Reba Jane Miller,
James Reid Mitchell, Jr.,
Henry New Morse,
Thomas Jefferson Moyer,
Joseph Gleeson Murphy,
Elizabeth Aerial Myers,
George Joseph Nelbach,
Andrew White Newberry,
Wallace Ranlette Newcomb,
Frederick Jerome Newman,
Wilbur W Newton,
Elizabeth Nichols,
Charles Carter Nitchie,
Letitia Rebekah Odell,
Max Cyrus Overman,
Elnora May Palmer,
Lewis Eugene Palmer,
Theodore Frankel Pappe,
Esther Emily Parker,
James Heber Parker, P.D.,
Florence Rosamond Parsons,
Jesse Randolph Pawling,
Florence Belle Earle Payne,
Leslie Donald Perry,
Eunice Martha Pierce,
Frederic Clifford Pitcher,
Charles Emmet Quinn,
Lewis Radcliffe,
Harold Jay Richardson,
George Cooke Robertson,

Ola Dee Rogers, Ph.B.,
William Woollard Rogers,
Minna Rosenheim,
Allen M Rossman,
Sidney Rossman,
Chester Milton Sanford,
Fred William Scheidenhelm,
Jacob Frederick Schoellkopf,
Katharine Emily Selden,
Vera Louise Shepherd,
Alexander Silverman, Ph.B.,
Alice Gertrude Smith,
Anna LaVerne Smith,
Howard Charles Smith,
John Homer Smith,
Mary Porter Smith,
Morgan Babcock Smith,
Madge Arthur Stevens,
Johanna Cathrine Stolte,
Nelson Vinton Taylor,
Hester Pardee Tefft,
Albert Seward Tenney,
John Tinkler, Jr.,
William Arthur Vawter, 2nd,
Chloe Vosburgh,
Mary Violet Waite,
Eleanor Gertrude Wall,
Harold Saleno Warner,
Warren C Waterbury,
Alfred Cleveland Weed,
Helene Weil,
Edward Murray Welles,
Don Salmon Whitcomb,
Gorrell Robert White,
Jessamine Sophia Whitney,
Mary Whitson,
Elizabeth Leigh Whittaker,
Frances Gertrude Wick, A.B.,
David Wilson,
Mabel Janette Wood,
Arthur Burtis Zerns.

Bachelors of Laws.

Hale Anderson,
Aaron Anthony Armitage,
Leon Leroy Arthur,
William Morris Arthur,
Neal Dow Becker,
John Henry Clapp, B.S.,
Andrew Raymond Cornwall,
Frank Norton Decker,
William Duke, Jr.,
William Goodrich Ellis,
Theodore Edmund Faxon, A.B.,
Ernst Frederick Fox,
Maurice Charles Gaertner, Jr.,
Roy Fenimore Gilkeson,
Burt Henry Greiner,
Hugh Price Henry,
Hugh Moore Hewson,
Ralph Elwood Hoskot,
Charles Russell Kelleran,
Ernest Westervelt Kelsey,
Ralph Sherlock Kent, A.B.,
William Ross Lee, A.B., A.M.,
Bennett, Frederick Lies,
Eugene Lawrence McCollum,
Roy Congdon McHenry,
Walter McMeekan,
George Winfield Martin,
John Duncan Monroe,
George Nelson Nay,
William Neff, A.B.,
Mark Oliver,
James Griswold Parker,
Clarence Brett Piper,
Ben Perley Poor, A.B.,
William Lynn Ransom,
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Edgar Allen Rogers,

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May Christine Sickmon,
Solomon Simmons,
William Hugh Snowden,
Clarence Cecil Squire,
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Alexander Holt Thompson,
Robert August Uihlein,
Harry Gregory Underwood,
Earle Spear Warner, B.L..
William Jay Warner, A,B.,
Nicholas John Weldgen,
Herbert Wight, A.B.,
Harry Clay Williamson.

Doctor of Medicine.

Charles Waite Orville Bunker, B.Sc.

Bachelors of the Science of Agriculture.

Charles Aronovici, B.L.,
George Wendell Bush,
Lee Arthur Chase,
Herbert Randolph Cox,
Lawrence Green Dodge, A.B.,
William Robert Dunlop,
Lester Carman Griffith,
James Garfield Halpin,
Hans Weller Hochbaum,
Jay Clark Hungerford,
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Floyd John Porter.
Norman Ratchford,
Zenhichi Sawai,
Ray Clinton Simpson,
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Frederick Willment Andrews,
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Newell D Backus,
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Fletcher Eugene Smith,
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Mulford Conklin Thompson,
Jacob Traum,
Walter Treman,
Philip Victor Weaver,
Rex Whiting,
Fritz Elerd York.

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Howard Blaine Burton,
Charles Sherman Cobb,
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Arthur Edward Hann,
Robert North,
Lloyd Anthony Rally,
Edwin Alexander Seipp,
John Snyder,
Joseph Henry Straus, Jr.,
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Nora Stanton Blatch,
Clinton Lathrop Bogert,
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Albert Sereno Brainard,
Julius Frederick Braunner, Jr.,
George Anthony Brown,
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Arthur Reynolds Chase, A.B.,
Richard Wade Chase,
Paul Delmont Coons,
Horace Corbin,
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Albert Ralph Ellis,
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Jonas Paul Urner,
Ephraim Viertels, B.S.,
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Mechanical Engineers.

Everett Gunner Ackart, Ph.B.,
William Lewis Acker,
Cuyler Culver Adams,
Francis Spearman Adams,
Thomas Dickinson Adams, A.B.,
Carl George Allen,
Clark Taggart Anderson,
Walter Jonas Armstrong,
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Norman Lockyer Baker, A.B.,
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George Lightbourn Bascome,
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Frank Elting Cuddeback,
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Arthur Passavant Deemer,
Francis Douglas Denton,
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Cyrus Hillman Kinsman,
Roger Leverich Kingsland,
James Somerville Knowlson, 3d,
Gustavus Adolphus Kositzky,
Walter Andrew Kuhlmey,
George Wilfrid Kuhn,
William Overton Kurtz,
Eugene Landers,
Carl William Lange,
Lito Willett Law,
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Lloyd Virgil Lewis,

Frederick Charles Lippert,
Clarence Duane Little,
Andrew Jackson Lowndes,
George William Luther,
James Lynah,
Le Roy Regester McClenahan,
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Robert McIntosh, Ph.B.,
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Edward Fraser Mason,
James Franklin Meister,
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Carlos Brown Mirick,
William James Miskella,
David Cameron Mix,
William Albery Morgan, Jr.,
Charles Solomon Netzorg,
Teru Ninomiya,
Irvin Norton,
Walter William Nowak,
Ross Sanders Peck,
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Frederick William Poate,
Henry Joshua Porter,
George Adams Post, Jr.,
John Adam Raidabaugh,
George Regis Ramel,
Walter Franklin Rath,
Paul Stuart Rattle,
Robert Parker Raynsford,
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Dale Fleming Reese,
Howard Cameron Rice,
Eugene Max Ritzwoller,
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William Christopher Robinson,
Ralph Chapman Rodgers,
William Wheeler Roney,
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Orange James Salisbury, Jr.,
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Otto Schwartz, B.E.,
Herbert Henry Scofield,
Frank Martin Sears,
Norman Lowrie Shaw,
Harry Edwin Smith,
Robert Armstrong Smith, Jr.,
Lorenzo Dowe Speed,
Edward Pomeroy Staats,
Frank Edgar Sutton,
Soa-chiang Thomas Sze,
Silas Taber,
Frank Lucius Tavenner, B.C.E.,
John Thomas Thomas,
Eustis Henry Thompson,
Wetmore Holloway Titus,
Edward James Trimbey,
Sidney Coombe Vincent,
Anton Vonnegut,
Fernando Murray Walker, A.B.,
Austin McRaven Warner, A.B.,
Chester Ingersoll Warren,
George Sessions Warren,
Rudolf Lorenz Weber,
Everett Cartwright Welsh,
John Jay White, Jr.,
Erskine Phelps Wilder,
Charles Laurance Williams,
Griswold Wilson,
Clayton Smith Worrall,
Alfred Bussell Wray,
Richard Avery Wright,
Kuei Ling Wu,
Arthur Gove Wylie,
Clarence Raymond Wylie,
Andrew Dewing Young,
Philip Henry Zipp.

ADVANCED DEGREES.

Masters of Arts.

Edward Althaus, Jr. : The Effect of the Acquisition of one Set of Habits upon the Acquisition of a related Set.

Blanche Tudor Austin, B.S. : The Comparative Anatomy of the Eyelids of Necturus and of the larval and adult Spelerpes.

Paul Prentice Boyd, A.B., A.M. ; A Comparative Study of the Methods of Fluxions and of Differentials.

Nellie Gertrude Chase, B.L. ; Miltonic Influence in the Poetry of Coleridge.

Guy Chester Crampton, A.B. : The Salivary Glands of a Cockroach.

Paul Frederick Gaehr, A.B. ; Studies in Photometry.

Emanuel A Goldenweiser, A.B. : Russian Immigration to the United States.

Arthur Gordon, A.B. : A Comparison of Rotrou's Tragedies, St.Genest and Venceslas, with their Spanish Originals.

Robert John Halpin, A.B. : The Trade between France and the United States from the Treaty of Alliance, 6th Febrnary, 1778, to the Treaty of Peace, 3rd September, 1783.

Lee Fred Hawley, A.B. : Some new Compounds of Thallium.

William Williams Henderson, A B. : A Contribution to the Knowledge of the Genus Lepidosaphes.

Walter Edward King, B.A.: The Bacterial Flora of the Intestinal Mucosa and the Eye of the common Fowl.

Walter Edward McCourt, A.B. : The refractoriness of Building Stones.

Columbus Benjamin Martin, A.B. : Horace : Ode 1, 28 ; Is it a Monologue or a Dialogue ?

Harriett M Martin, B.A. : The Effect of Concentrated Solutions on the Osmotic Activity of Plants.

Isabel Eleanor Martin, A.B. : A Prediction of the Total Solar Eclipse of August, 1905.

Frederick William Oswald, Jr., A.B. : Christian Friedrich Hebbel and his Place in German Literature.

Carla Fern Sargent, A.B. : Efforts of the Congress of the Confederation to gain power to meet the British Commercial Policy towards the United States in the Years 1783–1789.

Ralph Edward Sheldon, A.B. : Some points in the Morphology of the Carp's Brain.

Chauncey William Waggoner, B.S. in E.E. : The Effect of Low Temperature on the Magnetic Propcrties of Steels of different Composition.

Ralph Claude Willard, A.B. : Materials for the History of the Greek Cities in Southern Russia.

Florence Louise Williams, A.B. : The Chronology of Goethe's Faust as illustrated by his Diary, Letters, Conversations, and Contemporary Records.

Albert Hazen Wright, A.B. : The Fishes of Northern Monroe County, N. Y.

Masters of Science in Agriculture.

John Eliot Coit, B.S. in Agr. : A Comparative Study of the economic and aesthetic Value of ornamental Hardy Shrubs of Ithaca.

Ralph Wright Curtis, B.S.A. : The Native Trees of Ithaca in Winter.

Samuel Fraser : A Study of Timothy (*Phleum pratense*) with special Regard to Variation.

Arthur Witter Gilbert, B.S. : Factors affecting Germination and the Growth of Seedlings.

John Washington Gilmore, B.S.A. : A Study of Quality in Potatoes.

George Wheeler Hosford, B.S.A. : A Study of the Strawberry Plant and the Effect of Fertilizers thereon.

Modesto Quiroga, B.S. in Agr. : A Soil Survey of the Northern Portion of Tompkins Co., N. Y.

Walter Strickland Thornber, B.S. in Agr., M.S. in Agr. : The Development of Flower Buds of Orchard Fruits.

Charles Scoon Wilson, A.B. : The History of the Apple in New York State.

Russell Sage Woglum, A.B. : The Classification of the Genus Aspidiotus of Targioni-Tozzetti.

Master of Science in Architecture.

Ralph Elliott Abell, B.S. in Arch. (No thesis required.)

Masters of Civil Engineering.

Tung Chao Hu, B.S. in C.E. : A Comparative Design of Two and Three Hinged Spandrel Braced Arches for Highway Traffic.

Kenneth Bertrand Turner, C.E. : An Investigation into the Effect of End Contraction on the Flow of Water over Weirs.

Thomas Jacob Rodhouse, B.S. in C.E. : The Effect of Enlargements and Contraction of Channel upon the Flow of Water.

Masters of Mechanical Engineering.

Morphy Edison Berry, M.E. : An Investigation of the Specific Heat of Superheated Steam.

George Mackensie Brill, M.E. : Report on the Consumers' Gas Trust Company.

Moncure Conway Carpender, M.E. : The Present American Practice in Electric Car Building.

Charles Harold Day, M.E. : Economy of Gas Engines using Producer Gas.

Clarence Floyd Hirsfeld, B.S. : The Economy of Internal Combustion Engines.

Everett Parker Lesley, B.A. in M.E. : The Influence of Form and Proportion upon the Residuary Resistance of Ships.

Curtis Clark Myers, M.E. : The Economics of Motor Drive.

John Walter Prince, M.E. : The Design, Coustruction, and Operation of a Plant for the Manufacture of Portland Cement from Marl and Clay.

George Burr Upton, M.E. : A Strength Test of copper rich Bronzes.

Doctors of Philosophy.

Oscar Perry Akers, A.B., M.A. : On the Congruence of Axes in a Bundle of Linear Complexes.

James Munsie Bell, B.A. : Dineric Equilibria.

Ralph Vary Chamberlin, B.S. : North American Spiders of the Family Lycosidae.

Samuel Richard Cook, B.S., M.S., A.M. : On the Velocity of Sound in Gases, and the Ratio of the Specific Heats, at the Temperature of Liquid Air.

William Chauncey Geer, A.B. : Contributions to the Chemistry of Indium.

Edmund Howard Hollands, Ph.B., A.M. : The Fundamental Principles of Schleiermacher's Philosophy.

Willard Eugene Hotchkiss, Ph.B., A.M. : The Judicial Work of the Comptroller of the Treasury as compared with similar Functions in the Governments of France and Germany.

George David Hubbard, B.S., M.S., A.M. : The Geographic Influence of the Precious Metals in the Development of the United States.

Frederick Edward Kester, M.E in E.E., A.M. : The Joule-Thomson Effect in certain Gases.

Charles Edward Lewis, A.B., A.M. : The Embryology and Development of *Riccia lutescens* and *Riccia crystallina*.

Richard Roswell Lyman, B.S. in C.E., M.C.E., The Flow of Water over Weirs.

Donald Alexander MacRae, A.B., A.M. : Life of Sophocles, from the Sources.

Addams Stratton McAllister, B.S. in E.E., M.M.E. : Alternating Current Commutator Motors.

Albert Charles Muhse, A.B., A.M.: The Justification of Taxation in Relation to Economic and Political Science.

Benjamin Powell, A.B., A.M.: Erichthonius and the Three Daughters of Cecrops; A Study in Mythology.

Lillian Scoresby Smith, A.B.; On the Adnominal Genitive in Tacitus.

Herman Campbell Stevens, A.B.: A Plethysmographic Study of Attention.

George Reeves Throop, A.B., A.M.: A new Manuscript of Cicero's De Senectute.

George Frederick Warren, Jr., B.Sc., B.S.A., M.S. in Agr.: The Apple Industry of Wayne and Orleans Counties, N. Y.

Gershom Franklin White, B.S.: The Bacterial Flora of the Apiary with special Reference to Bee Diseases.

Emil Carl Kunibert Wilm, A.B., A.M.: The Philosophy of Friedrich Schiller in its historical Relations with special Reference to the Influence of Kant.

PRESENTATION OF CERTIFICATES AND PRIZES.

Certificates for Proficiency in Military Science:
William Arthur Hillebrand, David Cameron Mix,
Robert Morris Falkenau.

The Sibley Prizes in Mechanic Arts:
First Prize ..... Samuel James Dennis
Second Prize ..... Andrew Jackson Lowndes
Third Prize ..... Harry Richmond Halloran
Fourth Prize ..... John Crosier Wilson
Fifth Prize ..... Leo Julius Leffler

The H. K. White Prizes in Veterinary Science:
First Prize ..... Andrew English
Second Prize ..... Ray Willard Gannett

The Woodford Prize in Oratory: Robert Paul Butler

The Eighty-Six Memorial Prize in Declamation:
William Lynn Ransom

The Ninety-Four Memorial Prize in Debate: Neal Dow Becker

The Guilford Essay Prize. William Wallace Gail

The Hiram Corson Browning Prize: Albert Davis, A.B., A.M.

The Barnes Shakespeare Prize: Oscar Diedrich Von Engeln

The Luana L. Messenger Memorial Prize:
Emil Carl Kunibert Wilm, A.B., A.M.

The Fuertes Medals:
Willard Beahan, B.C.E., John Earl Elliott, A.B.

The Sands Medals in Architecture:
Ralph Elliott Abell, B.S. in Arch. Julius André Smith, M.S. in Arch.
Robert North

Charles Sherman Cobb.

The Brown Memorial Medals in Architecture:
Charles Sherman Cobb
Robert North

DOCTORS OF MEDICINE.

[Conferred June 14, 1905, at the Seventh Annual Commencement of the Medical College in New York City.]

Harry Isaac Andrews,
Harry Bain Avery,
Alvin Walter Baird, A.B.,
Albert Beckary,
Damas Brough Becker,
Alletta Langdon Bedford, A.B.,
Albert Newell Benedict,
Leopold Henry Berliner,
William Frederick Bozenhardt,
Charles Broder,
Milton Chapman,
Zella Maria Clark, B.A.,
Charles Hartwell Cocke, B.A.,
Rose Cohen,
James Francis Coyle,
John Homer Cudmore,
Edmund Otto Darbois,
Joseph Leo de Varona,
Joseph Di Rocco,
Bertrand Francis Drake, B.S.,
Eliza A. Fancher,
Elias Fischbein,
Horace Westlake Frink,
John Francis Gannon, A.B.,
Lewell T. Genung, A.B.,
Otto Lewis Goehle, A.B.,
Charles Albert Gordon,
Harvey Patterson Groesbeck,
John Alfred Heim,
John Rutherford Herrick, B.A.,
Rollin Hills,
William Hinz,
Bert Raymond Hoobler, B.S., A.M.,
Robert Leroy Hutton, A.B.,
Harry Ezekiel Isaacs,
William Murray Kerr,
Morris James Klein,
Edith Loeber, A.B.,
Julius London,
John Joseph McGlade,
Herbert Patterson MacGregor,
James Malcolm MacKellar,
William Anderson McMurtrie, Ph.B.
Maurice Oliver Magid,
Richard Sandford Mallon,
Jacob Maybaum,
Louis Burgh Mount, A.B.,
Charles William Murset,
George Albert Newton,
Lina Maud Parker, A.B.,
Robert Rhoode Patterson, A.B.,
Earle W. Phillips,
Bernard Rein,
John Harold Richards,
George Louis Rohdenburg,
John Van Wagner Smith,
Samuel Newell Smith, Jr.,
Percy Allis Winans Smithe, A.B.,
Frederick William Stechman,
Herbert Edward Stein,
Leona Estelle Todd, A.B.,
Alfred Augustus Walker,
Harry Abram Walker,
George Canning Wankel,
Milton Goodman Wasch,
Alfred Winfield White,
James Monroe Wicks,
Roscoe Squires Wilcox,
William Frederick Wismar, A.B.,
Elizabeth Morgan Worts,
Arthur Mullin Wright, A.B.,
Wilson Briggs Zimmer,
Joseph Ziporkes.

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Civil Engineering

The Sage Fellowship,
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The Schuyler Fellowship,
Leopold Reinecke, B.A. (Univ. of Cape of Good Hope),
Geology

The Sibley Fellowship,
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Mechanical Engineering

The Goldwin Smith Fellowship,
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The President White Fellowship,
Elbert Barrett Tuttle, B.S. in E.E. (Iowa State College),
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The Erastus Brooks Fellowship,
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A.M. (Park Coll.), *Mathematics*

Charles Sherman Cobb, B. Arch., *Architecture*
Charles Eli Burgoon, B.M.E., M.E. (A. & M. Coll. of Texas),
Mechanical Engineering
Arthur Gordon, A.B., *Romance Languages*
Raymond Watson Jones, A.B., *Germanic Languages*
John Eliot Coit, B.S. in Agr. (North Carolina A. & M. Coll.),
Agriculture

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Edna Virginia Moffett, A.B. (Vassar Coll.), A.M. (Cornell Univ.).

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Harry Garfield Nutt, B.S., M.S. (Dartmouth).

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Margaret Otis, A.B.

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Samuel Perkins Hayes, A.B. (Amherst), A.M. (Columbia Univ.), B.D. (Union Theo. Sem.)
George Holland Sabine, A.B.

FELLOW IN ARCHITECTURE.

Julius André Smith, B.Arch., M.S. in Arch.

HONORARY FELLOWS.

James Allen Nelson, Ph.B. (Kenyon Coll.), Ph.D. (Univ. of Penn.), *Entomology*

GRADUATE SCHOLARS IN THE SCHOOL OF PHILOSOPHY.

Gus Watts Cunningham, M.A. (Furman).
Mattie Alexander Martin, A.B.
Frank Davis Mitchell, A.B.
Elsie Murray, A.B.
Robert Benjamin Waugh, A.B. (Hobart Coll.).
Mary Cheves West, B.S. (Columbia Univ.).

UNIVERSITY GRADUATE SCHOLARS.

Floyd Cooper Fairbanks, A.B. (Univ. of Rochester), *Physics*
Albert Davis, A.B., A.M. (Columbia Univ.), *English*
William Dodge Gray, A.B. (Univ. of Ark.), A.M. (Cornell Univ.), *Greek and Latin*
Caroline Louise Allen, A.B., *Botany*
Myrta Eleanor Hunn, A.B., *Comparative Philology and Archaeology*
Thomas J Headlee, M.A. (Indiana Univ.), *Entomology*
Roscoe Milliken Packard, A.B., A.M., (Western Reserve Univ.), *Civil Engineering*
Frank Curry Mathers, A.B., A.M. (Indiana Univ.), *Chemistry*
Clyde Firman Craig, A.B. (Univ. of Mich.), *Mathematics*
Louise Fargo Brown, A.B., *History*

UNIVERSITY UNDERGRADUATE SCHOLARSHIPS.

SOPHOMORE CLASS.

THE CORNELL SCHOLARSHIPS,

Eleanor Elizabeth Churchill, *Course in Arts*

Buffalo Central High School—Frederick A. Vogt, Principal.

Mather Francis Thurston, *Course in Arts*

Hamburg High School—Benjamin G. Estes, Ph.B., Principal.

THE H. B. LORD SCHOLARSHIPS,

Robert Eugene Samuels, *Course in Arts*

Boys' High School, Brooklyn—John Mickleborough, Ph.D., Principal.

Romeyn Yatman Thatcher, *Course in Arts*

Buffalo Central High School—Frederick A. Vogt, Principal.

THE MCGRAW SCHOLARSHIPS,

Mayne S Howard, *Course in Arts*

Ten Broeck Academy—Hamilton Terry, A.B., Principal.

Fayette Andrus Cook, *Course in Mechanical Engineering*

Ithaca High School—F. D. Boynton, M.A., Principal.

THE SAGE SCHOLARSHIPS,

Freda Zorn, *Course in Arts*

Girls' High School, Brooklyn—Wm. L. Felter, Ph.D., Principal.

Alice Laura Clark, *Course in Arts*

Northfield Seminary—Evelyn S. Hall, B.A., Principal.

THE SIBLEY SCHOLARSHIPS,

Donald Stewart, *Course in Mechanical Engineering*

Boys' High School, Brooklyn—John Mickleborough, D.D., Principal.

James Wallace Marshall, *Course in Mechanical Engineering*

Pittsburgh Academy—J. C. Armstrong, Principal.

THE PRESIDENT WHITE SCHOLARSHIPS,

George Paaswell, *Course in Civil Engineering*

De Witt Clinton High School—J. T. Buchanan, Principal.

Harry Ames Richards, *Course in Arts*

Batavia High School—E. A. Ladd, Ph.D., Principal.

THE HORACE GREELEY SCHOLARSHIPS,

Bruno Charles Lechler, *Course in Civil Engineering*

Brooklyn Eastern District High School—W. T. Vlymen, Ph.D., Principal.

Emma Florence Strang, *Course in Arts*

Waterloo High School—Harry B. Smith, A.B., Principal.

THE JOHN STANTON GOULD SCHOLARSHIPS,

David Theodore Smith, *Course in Law*

Brooklyn Eastern District High School—W. T. Vlymen, Ph.D., Principal.

Claire L. Southworth, *Course in Arts*

Holley High School—H. D. Bartlett, Principal.

THE STEWART L. WOODFORD SCHOLARSHIPS,

George Frederick Rogalsky, *Course in Arts*
North Tonawanda High School—E. A. Smith, M.A., Principal.

Ross Peter Anderson, *Course in Arts*
South Butler High School—L. J. Cross, Principal.

FRESHMAN CLASS.

THE CORNELL SCHOLARSHIPS,

Russell Vincent Banta, *Course in Civil Engineering*
Boys' High School, Brooklyn—John Mickleborough, Ph.D., Principal.

Mattie Charlotte Moffett, *Course in Arts*
Middletown High School—Wm. A. Wilson, A.B., Principal.

THE H. B. LORD SCHOLARSHIPS,

Frederick Adolph Rice, *Course in Arts*
Boys' High School, Brooklyn—John Mickleborough, Ph.D., Principal.

Edwin Charles Mayer, *Course in Arts*
Erasmus Hall High School—Walter Gunnison, Ph.D., Principal.

THE MCGRAW SCHOLARSHIPS,

William Alphonsus Shea, *Course in Arts*
Brockport Normal School—C. T. McFarlane, Principal.

David Tolins, *Course in Law*
Boys' High School, Brooklyn—John Mickleborough, Ph.D., Principal.

THE SAGE SCHOLARSHIPS,

Anna Belle Genung, *Course in Arts*
Ithaca High School—F. D. Boynton, D.Pd., Principal.

Alice Welles Benham, *Course in Arts*
Cortland Normal School—F. J. Cheney, Ph.D., Principal.

THE SIBLEY SCHOLARSHIPS,

George Gordon Dobson, *Course in Mechanical Engineering*
Passaic High School—A. D. Arnold, Principal.

Tom Bruce Hyde, *Course in Mechanical Engineering*
Ithaca High School—F. D. Boynton, D.Pd., Principal.

THE PRESIDENT WHITE SCHOLARSHIPS,

Everett Magnon York, *Course in Arts*
Flushing High School—John Holley Clark, A.M., Principal.

Helen Frances Dwyer, *Course in Arts*
Hartford High School, Conn.—E. H. Smiley, Principal.

THE HORACE GREELEY SCHOLARSHIPS,

Freda Kiso, *Course in Arts*
Eastern District High School, Brooklyn—Wm. S. Vlymen, Principal.

Loring DeLacy Jones, *Course in Arts*
Boys' High School, Brooklyn—John Mickleborough, Ph.D., Principal.

THE JOHN STANTON GOULD SCHOLARSHIPS,

Emil Adler, *Course in Mechanical Engineering*
Masten Park High School—F. S. Fosdick, M.A., Principal.

Peter Thomas Vanderwaart, *Course in Mechanical Engineering*
Norwich Free Academy—H. A. Tirrell, Principal.

THE STEWART L. WOODFORD SCHOLARSHIPS,

Fritz Fernow, *Course in Arts*

Ithaca High School—F. D. Boynton, D.Pd., Principal.

Charles Chadowitz, *Course in Arts*

Boys' High School, Brooklyn—John Mickleborough, Ph.D., Principal.

ASSOCIATE ALUMNAE SCHOLAR.

Charlotte Everest Shumway, *Course in Arts*

FRANK WILLIAM PADGHAM SCHOLAR.

William Kahl, *Course in Mechanical Engineering*

BOARDMAN SENIOR LAW PRIZE.

Arthur Brothers Weber, *Course in Law*

CATALOGUE OF STUDENTS.

GRADUATES.

Candidates for Advanced Degrees.

* *In absentia.* ** *Not in residence 1905-06.*
† *Not Candidates for Degrees.*

Adams, Joseph Quincy, Jr., A.B. (Wake Forest College), A.M. (same), *Charlotte, N. C.*
English, Italian. *Ph.D.*
[English Literature, Italian Literature, English Language.]

Albert, Calvin Dodge, M.E., 1902, *Ithaca*
Mechanical and Civil Engineering. *M.M.E.*
[Mechanical Engineering, Hydraulics.]

Albrech, Maximilian Claude, *Lowville*
Chemistry. *Ph.D.*
[Sanitary, Analytical and Agricultural Chemistry.]

Allen, Caroline Louise, A.B., 1904, *Buffalo*
Botany. *A.M.*
[Botany (Mycology), Plant Histology.]

Apgar, Clara Selkreg, A.B., 1905, *Ithaca*
Latin, English. *A.M.*

Aronovici, Charles, B.L. (Gymnasium of Roumania), 1898, B.S.A. (Cornell), 1905, *Ithaca*
Agriculture, History and Political Science. *Ph.D.*
[Rural Economy, Rural Sociology, Economics and Statistics.]

Austin, Blanche Tudor, B.S. (Wells), 1895, A.M. (Cornell Univ.), 1905, *Cincinnati, O.*
Vertebrate Zoology, Entomology. *Ph.D.*

Bader, William John, A.B. (Univ. of Ill.), 1902, *Quincy, Ill.*
Chemistry. *Ph.D.*
[Inorganic, Organic and Physical Chemistry.]

Bailey, Elmer James, Ph.B. (Univ. of Rochester), 1894, Ph.M. (same), 1897, A.M. (Hamilton Coll.), 1905, *Ithaca*
English, History and Political Science. *Ph.D.*
[English and American Literature, American History, English Language.]

Bailey, William Louis, A.M. (Queen's Coll.), 1904,
Gravenhurst, Canada
Philosophy. *Ph.D.*
[Logic and Metaphysics, Ethics, Psychology.]

**Betten, Cornelius, B.A. (Lake Forest Univ.), 1900, M.A. (same), 1901,
Lake Forest, Ill.
Entomology, Botany. *Ph.D.*
[Entomology (Systematic), Entomology (Ecology), Botany (Embryology).]

Black, John Alexander, A.B. (Univ. of Chicago), 1903, *Luna, O.*
Chemistry. *Ph.D.*
[Organic Chemistry, Physiological Chemistry, Analytical Chemistry.]

Boothroyd, Samuel Latimer, B.S. (Col. Agr. Coll.), 1893, M.S. (same), 1904, *Ithaca*
Civil Engineering, Mathematics. *M.C.E.*
[Geodesy and Astronomy, Differential Equations.]

Boyd, Paul Prentice, A.B. (Oberlin), 1898, A.M. (Park Coll.), 1900, A.M. (Cornell), 1905, *Siloam Springs, Ark.*
Mathematics, Physics. *Ph.D.*
[Pure and Applied Mathematics, Theoretical Physics.]

†Breckenridge, William Edwin, A.M. (Yale Coll.), 1893, A.M. (same), 1902, *New York City*
Mathematics.
[Advanced Differential Calculus, Projective Geometry.]

Brown, George Henry, B.L. (Dartmouth Coll.), 1894, *Lebanon, N.H.*
Romance Languages. *A.M.*
[French Literature, Advanced French.]

Brown, Louise Fargo, A.B., 1903, *Buffalo*
History, Geology. *Ph.D.*
[Modern European and Mediæval History, Physical Geography.]

Brown, Mortimer Jay, B.S. (Univ. of Neb.), 1905, *Tecumseh, Neb.*
Chemistry, Physics, Geology. *Ph.D.*
[Chemistry, Physics, Economic Geology.]

Burgoon, Charles Eli, M.E., 1905, *Estelle, Texas*
Mechanical and Electrical Engineering. *M.M.E.*
[Experimental and Electrical Engineering.]

Burnett, Samuel Howard, A.B., 1892, M.S., 1896, D.V.M., 1902,
Webster
Veterinary Medicine, Bacteriology, Histology. *Ph.D.*
[Pathology, Bacteriology, Histology.]

Butler, Bert S, A.B., 1905, *Wyoming*
Geology. *A.M.*
[Mineralogy, Physiography.]

Camp, Arthur Dutton, A.B., 1905, *Montclair, N. J.*
Chemistry, Geology. *Ph.D.*
[Analytical Chemistry, Inorganic Chemistry, Economic Geology.]

Carruth, William Massey, A.B., 1901, *Cleveland, O.*
Mathematics, Physics. *Ph.D.*
[Pure and Applied Mathematics, Physics.]

†Castle, Samuel Northrup, A.B. (Harvard), 1901, *Ithaca*
Mechanical Engineering.
[Steam Engineering, Electrical Engineering.]

Cates, Junius Sidney, B.Agr. (N. C. Coll. of A. and M.), 1902, M.Agr. (same), 1904, *Swepsonville, N. C.*
Agriculture. *Ph.D.*
[Agronomy, Animal Industry, Agricultural Chemistry.]

Cauthen, Edward Francis, B.S. (Univ. of Nashville), 1896, *Hamilton, Ala.*
Agriculture. *M.S. in Agr.*

†Cessna, John Randolph, M.E., 1893, *Ithaca*
Civil Engineering.

Chakravarty, Jatindra Nath, A.B. (Calcutta), 1902, *Calcutta, India*
Agriculture. *M.S. in Agr.*
[Agronomy, Dairy Industry.]

†Chase, Lee Arthur, B.S. in Agr., 1905, *Gloversville*
Agriculture.
[Soils, Agricultural Chemistry]

Clark, Charles Frederick, B.S. (Univ. of Vt.), 1897, *Glover, Vt.*
Agriculture, Botany. *M.S. in Agr.*
[Agronomy, Botany (Physiology).]

Clark, John Powell, *Norwood*
Mathematics, Physics. *A.M.*

Cobb, Charles Sherman, B.S. in Arch., 1905, *Albany*
Architecture. *M.S. in Arch.*
[Architectural Design, Freehand Drawing.]

Cochran, Jerome, B.S. in C.E. (A. & M. Coll. of Texas), 1904, C.E. (same), 1905, *Houston, Texas*
Civil Engineering. *M.C.E.*
[Structural and Sanitary Engineering,]

Cochrane, Harry Hamilton, B.S. (Trinity Coll., Hartford, Conn.), 1901, *Ithaca*
Electrical and Civil Engineering. *M.M.E.*
[Electrical Engineering, Hydraulic Engineering.]

Coffin, Joseph Herschel, B.S. (Penn. Coll.), 1902, A.M. (same), 1904, *Oskaloosa, Iowa*
Philosophy. *Ph.D.*
[Psychology, History of Philosophy, Ethics.]

Coit, John Eliot, B.S. in Agr. (North Carolina A. & M. Coll.), 1903, M.S. in Agr. (Cornell), 1905, *Ithaca*
Agriculture, Botany. *Ph.D.*

**Collier, Theodore Frelinghuysen, A.B. (Hamilton), 1894, A.M. (same), 1897, *Williamstown, Mass.*
History and Political Science. *Ph.D.*
[Modern European, Mediæval History, American History.]

Colpitts, Elmer Clifford, A.B. (Mount Allison Univ.), 1902, *Point de Bute, New Brunswick, Canada*
Mathematics, Physics. *Ph.D.*
[Pure Mathematics, Applied Mathematics, Physics.]

Conant, Goldsmith Hall, A.B. (Bates Coll.), 1898, A.B. (Harvard Univ.), 1903, *Littleton, Mass.*
Physics. *A.M.*
[Physics, Applied Electricity.]

Coppock, Emma Ethleen, A.B. (Earlham Coll.), 1904, *Union Springs*
German, French. *A.M.*

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, The Development of the English Novel.]

Craig, Clyde Firman, A.B. (Univ. of Mich.), 1904, *Des Moines, Iowa*
Mathematics, Physics. *Ph.D.*
[Mathematics (Pure and Applied), Physics.]

Crampton, Guy Chester, A.B. (Princeton), 1904, A.M. (Cornell), 1905, *Mobile, Ala.*
Entomology. *Ph.D.*
[Morphology of Insects, Economic Entomology.]

Crittenden, Eugene Casson, A.B., 1905, *Oswayo, Pa.*
Physics. *Ph.D.*
[Experimental and Theoretical Physics, Advanced Optics.]

Cunningham, Claude Carrol, B.S. in Agr. (Kans. State Agr. Coll.), 1903, *Manhattan, Kans.*
Agriculture, Botany. *M.S. in Agr.*
[Agronomy, Botany (Physiology).]

Cunningham, Gus Watts, A.M. (Furman Univ.), 1902,
Birmingham, Ala.
Philosophy, English. *Ph.D.*
[Logic and Metaphysics, Ethics, English.]

Curtis, Ralph Wright, B.S.A., 1901, M.S. in Agr., 1905, *Ithaca*
Agriculture, Botany. *Ph.D.*
[Agriculture (Nature Study), Horticulture, Systematic Botany.]

Daniels, Virgil Clayton, Ph.B. (Univ. of N. C.), 1904, A.M. (same), 1905, *Oriental, N. C.*
Chemistry, Physics. *Ph.D.*
[Inorganic Chemistry, Physical Chemistry, Physics.]

Davies, William Gomer, B.S. in C.E. (Univ. of Calif.), 1903,
Boise, Idaho
Civil Engineering, Electrical Engineering. *M.C.E.*
[Hydraulics, Electrical Engineering.]

Davis, Albert, A.B. (Columbia Univ.), 1903, A.M. (same), 1904,
Brooklyn
English, Philosophy. *Ph.D.*
[English Literature, English, Philosophy.]

Delbridge, Thomas G, A.B. (Union Coll.), 1903, *Batavia*
Chemistry. *Ph.D.*
[Organic Chemistry, Analytical Chemistry, Physiological Chemistry.]

DeMajumdar, Indu Bhushan, A.B. (Calcutta Univ.), 1902,
East Bengal, India
Agriculture. *M.S. in Agr.*
[Agronomy, Horticulture.]

Dennison, Boyd Coe, M.E., 1904, *Binghamton*
Mechanical Engineering. *M.M.E.*
[Experimental Engineering, Electrical Machinery.]

Dodds, Samuel Renwick, E.E. (Western Univ. of Penna.), 1903,
Beaver Falls, Pa.
Mechanical Engineering, Physics.
[Electrical Engineering, Electrophysics.]

*Dodge, Lawrence Green, A.B. (Harvard Univ.), 1904, B.S.A. (Cornell Univ,), 1905, *Wenham, Mass.*
Agriculture. *M.S. in Agr.*
[Farm Management, Live Stock.]

Dorsey, Herbert Grove, B.S. (Denison Univ.), 1897, M.S. (same), 1898, *Granville, O.*
Physics, Mathematics. *Ph.D.*
[Experimental and Theoretical Physics, Mathematics.]

Douglas, Gertrude Elizabeth, A.B. (Smith Coll.), 1904, *Gardner, Mass.*
Botany. *A.M.*
[Botany (Physiology), Botany (Comparative Histology of Plants.)]

Dutt, Hira Laul, A.B. (Calcutta), 1902, *Calcutta, India*
Agriculture. *M.S. in Agr.*
[Agronomy, Soils.]

Edgerton, Claude Wilbur, B.S. (Univ. of Nebraska), 1903, *Woodbine, Iowa*
Botany. *Ph.D.*
[Botany (Mycology), Botany (Physiology), Botany (Systematic).]

Edminster, Frank Custer, A.B., 1902, *Brooklyn*
Mathematics. *A.M.*
[Pure and Applied Mathematics.]

†Englert, Alfred, M.E., 1900, *Brooklyn*
Mathematics, German.

†English, Andrew, D.V.M., 1905, *Ithaca*
Veterinary.
[Anatomy (Comparative), Pathology.]

Evans, Emily Abigail, A.B. (Woman's Coll. of Baltimore), 1904, *Reisterstown, Md.*
Comparative Anatomy of the Brain, Vertebrate Zoology. *A.M.*

Fairbanks, Floyd Cooper, A.B. (Univ. of Rochester), 1901, *Williamson*
Physics. *Ph.D.*
[Experimental and Theoretical Physics, Advanced Optics.]

Felldin, Jennie Wilhelmina Sophie, A.B., 1900, *Auburn*
Latin, Greek. *A.M.*

Fenner, Robert Coyner, M.E., 1904, *Ithaca*
Physics. *A.M.*
[Experimental Physics, Theoretical Physics (Mechanical and Thermodynamics).]

**Ferguson, Alexander McGarven, B.S.H. (Agr. and Mech. Coll. of Texas), 1894, M.S. (same), 1896, *Austin, Texas*
Botany. *Ph.D.*
[Botany, (Physiology), Taxonomy of Angiosperms, Mycology.]

Fisher, Arthur William, Ph.B., 1898, A. M., 1899, *Pultneyville*
English, German. *Ph.D.*
[English Literature, German Philology, English Philology.]

Fisher, Willard James, A.B. (Amherst), 1892, *Woods Hole, Mass.*
Physics. *Ph.D.*
[Experimental Physics, Theoretical Physics, Mathematical Physics.]

Fletcher, Philena Belle, B.S.A., 1904, *Bainbridge*
Entomology, Botany. *Ph.D.*
[Entomology (Bees of Cayuga Fauna), Botany (Mycology), Pathological Histology of Plants.]

*Fletcher, William Franklin, B.S.A., 1904, *Bainbridge*
Horticulture. *M.S. in Agr.*
[Horticulture (Frost Injuries of Fruit Trees).]

**Foord, James Alfred, B.S. (New Hampshire Coll.), 1898, M.S. in Agr. (Cornell Univ.), 1902, *Newark, Del.*
Agriculture, Veterinary Medicine. *Ph.D.*
[Thremmatology, Dairy Husbandry, Agricultural Bacteriology.]

Foster, Herbert Hamilton, Ph.B., 1900, *Canandaigua*
Science and Art of Education, Philosophy. *Ph.D.*
[Education, Psychology, Philosophy.]

Frank, Joseph Julius, A.B. (Columbia Univ.), 1905, *New York City*
Chemistry, Physics. *A.M.*

Fraser, Samuel, (Cheshire Agr. and Hort. Coll., Eng.), 1898, M.S. in Agr. (Cornell), 1905, *Ithaca*
Agriculture. *Ph.D.*
[Timothy (Phleum pratense), The Improvement of Timothy by Selection (Phleum pratense), The Draft of Tillage Implements.]

Free, Edward Elway, *Du Bois, Pa.*
Chemistry, Geology. *A.M.*
[Physical Chemistry, Mineralogy.]

Freedlander, Abraham Abbey, A.B., 1905, *Buffalo*
History and Political Science. *Ph.D.*
[Politics, Modern European History, American History.]

Freeman, Henry Livingston, B.S. in E.E. (Ga. School of Technology), 1900, *Atlanta, Ga.*
Electrical Engineering, Mechanical Engineering. *M.M.E.*

Gaehr, Paul Frederick, A.B., 1902, A.M., 1905, *Ithaca*
Physics, Mathematics. *Ph.D.*
[Experimental and Theoretical Physics, Mathematics.]

Gage, Otis Amsden, Ph.B. (Univ. of Rochester), 1899, *Bellona*
Physics, Mathematics. *Ph.D.*
[Experimental and Theoretical Physics, Mathematics.]

Gallagher, Francis Edward, *Salamanca*
Chemistry. *A.M.*
[Physical Chemistry, Advanced Inorganic Chemistry.]

Gano, Laura, Ph.B. (Earlham Coll.), 1893, B.S. (Univ. of Chicago), 1898, *Richmond, Ind.*
Agriculture. *M.S. in Agr.*
[Agronomy, History of Agriculture.]

Gavett, George Irving, B.S. in C.E. (Univ. of Mich.), 1893, *Ithaca*
Mathematics, Civil Engineering. *A.M.*

Gehring, Herbert August, C.E., 1903, *Portland, Me.*
Civil Engineering. *M.C.E.*
[Hydraulics, Structural Engineering.]

Geissler, Ludwig Reinhold, B.L. (Univ. of Texas), 1905, *Ithaca*
Philosophy. *Ph.D.*
[Psychology, Logic and Metaphysics, Ethics.]

George, Sidney Gonzales, C.E., 1905, *Fredonia*
Civil Engineering. *M.C.E.*
[Mining Engineering, Applied Mechanics.]

Ghosh, Apurba Chandra, B.A. (Calcutta Univ.), 1901,
Dacca, Bengal, India
Agriculture. *M.S. in Agr.*
[Agronomy, Horticulture.]

Gibbs, Elbert Allan, B.S. in C.E. (Univ. of Calif.), 1905, *Ithaca*
Civil Engineering. *M.C.E.*
[Bridge Engineering, Advanced Mechanics.]

Giles, Irvin Kline, *Reading, Pa.*
Chemistry. *A.M.*
[Organic and Electro Chemistry.]

Gillett, Horace Wadsworth, *Penn Yan*
Chemistry. *A.M.*
[Physical and Organic Chemistry.]

Goldenweiser, Emanuel A., A.B. (Columbia Univ.), 1903, A.M. (Cornell), 1905, *Kiew, Russia*
History and Political Science. *Ph.D.*
[Economics and Statistics, Economics and Politics, American History.]

**Gordon, Arthur, A.B., 1904. *Caledonia*
Romance Languages. *A.M.*
[French, Spanish.]

Gray, William Dodge, A.B. (Univ. of Arkansas), 1900, A.M. (Cornell), 1903, *Little Rock, Ark.*
Latin, Greek, Ancient History. *Ph.D.*

Greenberg, Henry, *Brooklyn*
German, French. *A.M.*

†Guggenheim, Bernard, Ph.D. (Zurich Poly. Inst.), 1899, Chemical Eng. (Geneva), 1900, *Ithaca*
Chemistry.

Gullion, Omar Ray, A.B. (Univ. of Missouri), 1904, *Maywood, Mo.*
Physiology and Pharmacology, Physiological Chemistry, Bacteriology. *Ph.D.*

Harris, Clarence Owen, A.B., 1898, *Ithaca*
Greek, Latin, Comparative Philology. *Ph.D.*

Hawkins, Frank, A.B., 1905, *Hamden Junction, O.*
Chemistry. *A.M.*
[Organic Chemistry, Analytical Chemistry]

Hawley, Lee Fred, A.B., 1903, A.M., 1905, *East Randolph*
Chemistry, Geology. *Ph.D.*
[Inorganic Chemistry, Mineralogy, Physical Chemistry.]

Hayes, Samuel Perkins, A.B. (Amherst), 1896, B.D. (Union Theological Seminary), 1902, M.A. (Columbia), 1902, *Rochester*
Philosophy, History and Political Science. *Ph.D.*
[Psychology, Modern Philosophy, Economics and Politics.]

Hayhurst, Paul, A.B. (Missouri Univ.), 1904, *Dunkirk*
Entomology, Zoology. *Ph.D.*
[General Entomology, Economic Entomology, Vertebrate Zoology.]

Headlee, Thomas J, A.B. (Indiana Univ.), A. M. (same) 1903, *Yeoman, Ind.*
Entomology. *Ph.D.*
[General Entomology, Invertebrate Zoology, Systematic Entomology.]

Helwig, Orestes Herbert, A.B. (Ohio Wesleyan), 1901, A.M. (same), 1901, *Gnadenhütten, O.*
Latin, Greek, Ancient History. *Ph.D.*

Hodge, Percy, A.B. (Western Reserve Univ.), 1892, B.S. (Case School of Applied Science), 1894, *Hudson, O.*
Physics, Mathematics. *Ph.D.*
[Experimental and Theoretical Physics, Mathematics.]

Hogenson, James Christian, B.S. (Utah Agr. Coll.), 1899, *Newton, Utah*
Agriculture.
[Horticulture, Agronomy.]

Holcombe, Jobelle, B.A. (Univ. of Arkansas), 1898, *Springdale, Ark.*
English. *A.M.*
[English Literature, English Philology.]

Homer, William Harrison, B.S. (Utah Agr. Coll.), 1900, *Logan, Utah*
Agriculture, Botany. *M.S. in Agr.*
[Horticulture, Botany, (Histology.)]

Hopkins, Richard, B.C.E. (Iowa State Coll.), 1903, *Nevada, Ia.*
Civil Engineering. *M.C.E.*
[Municipal and Railway Engineering, Concrete Steel Construction.]

Hosford, George Wheeler, B.S.A., 1902, M.S. in Agr., 1905, *Mexico*
Agriculture. *Ph.D.*

Howitt, John Eaton, B.S.A. (Toronto Univ.), 1905,
Guelph, Ontario, Canada
Horticulture, Entomology. *M.S. in Agr.*

Hoxie, Robert Franklin, Ph.B. (Univ. of Chicago), 1893, *Ithaca*
History and Political Science. *Ph.D.*
[Economics, Political Science, Modern European History.]

Hunn, Myrta Eleanor, A.B., 1899, A.M., 1900, *Batavia*
Greek, Latin, Classical Archæology. *Ph.D.*

Huntington, Charles Clifford, B.S. (Antioch Coll.), 1896, Ph.B. (Ohio State Univ.), 1902, A.M. (same), 1903, *Springfield, O.*
History and Political Science, Geology. *Ph.D.*
[Economics and Finance, Physical Geography, Economics and Politics.]

Irons, Martin Joshua, B.C.E. in B.S. (Cornell Coll.), 1892,
Ft. Worth, Texas
Agriculture, Geology. *Ph.D.*
[Horticulture, Physiography, Soils.]

Isham, Helen, A.B., 1903, *Buffalo*
Chemistry, Physics. *Ph.D.*
[Inorganic Chemistry, Organic Chemistry, Physics.]

Jarvis, Chester Deacon, B.S.A. (Toronto Univ.), 1899,
Montreal, Canada
Agriculture, Entomology. *Ph.D.*
[Olericulture, Pomology, Entomology.]

*Jeffers, Henry Williams, B.S. in Agr., 1897, *Plainsboro, N. J.*
Agriculture. *M.S. in Agr.*
[Dairy Industry, Animal Industry.]

Jennings, Fred Huntington, A.B., 1902, *Moravia*
Chemistry, Geology. *Ph.D.*
[Inorganic Chemistry, Sanitary Chemistry, Economic Geology.]

**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.]

Jones, Raymond Watson, A.B., 1905, *Albany*
Modern and Romance Languages. *Ph.D.*
[German Language, German Literature, Romance Philology.]

**Kauffman, Calvin Henry, A.B. (Harvard,), 1896, *Lebanon, Pa.*
Botany, Chemistry. *Ph.D.*
[Botany (Plant Physiology, Mycology), Organic Chemistry.)

Kirchner, Anna Elsa, *Philadelphia, Pa.*
French, German. *A.M.*

**Knowlton, Daniel Chauncey, A.B., 1898, *Ithaca*
History and Political Science. *Ph.D.*
[Modern European History, Mediæval History, American History.]
Krauskopf, Francis Craig, A.B. (Indiana Univ.), 1904, *Maywood, Ill.*
Chemistry. *A.M.*
[Inorganic Chemistry, Sanitary Chemistry.]
Krecker, Frederick Hartzler, A.B. (Princeton), 1904,
East Orange, N. J.
Entomology. *A.M.*
[Insect Morphology, Economic Entomology.]
*Kunze, Edward J, B.S. (Cooper Union), 1899, M.E. (Cornell University), 1901, *New York City*
Mechanical Engineering. *M.M.E.*
[Mechanical Engineering, Machine Design, Thermodynamics.]
**deLaguna, Grace Andrus, A.B., 1903, *Tacoma, Wash.*
Philosophy, History and Political Science. *Ph.D.*
[Logic and Metaphysics, Ethics, Political Economy.]
Lewis, Burdette Gibson, A.B. (Univ. of Nebraska), 1904
Omaha, Neb.
History and Political Science. *Ph.D.*
[Economics and Politics, Economics and Finance, Modern European History.]
Lewis, Claude Isaac, B.S. (Mass. Agr. Coll.), 1902, B.S. (Boston Univ.), 1902, *Alfred*
Agriculture. *M.S. in Agr.*
[Horticulture, Landscape Gardening.]
Lichtenthaeler, Frank Edward, *Reading, Pa.*
Chemistry. *A.M.*
[Organic Chemistry, Analytical Chemistry.]
Lockhart, Oliver Cary, A.B. (Indiana Univ.), 1903, A.M. (same), 1905, *Albany, Ind.*
History and Political Science. *Ph.D.*
[Economics and Finance, Economics and Politics, Modern European History.]
McClain, Grace Darling, Ph.B. (Scio Coll.), 1900, *Cadiz, O.*
Mathematics. *A.M.*
McCourt, Walter Edward, A.B., 1904, A.M., 1905, *Brooklyn*
Geology. *Ph.D.*
[Economic Geology, Mineralogy and Petrography, Physical Geography.]
MacGill, Caroline Elizabeth, A.B., 1904, *Quebec, P. Q., Can.*
History and Political Science. *Ph.D.*
[American History, Economics and Statistics, Economics and Politics.]

†McNair, Frederick Henry, D.V.M., 1905, *Mt. Morris*
Materia Medica, Surgery.

McNitt, Robert J, A.B., 1902, M.E., 1904, *Ithaca*
Electrical Engineering. *M.M.E.*

McNown, William Coleman, B.S.C.E (Univ. of Wisconsin), 1903, *Manston, Wis.*
Civil Engineering. *M.C.E.*
[Reinforced Concrete Construction, Mechanics.]

Magnusson, John Peter, B.A. (Gustav Adolphus Coll.), 1898, M.A. (Univ. of Minn.), 1902, *St. Peter, Minn.*
Chemistry, Physics. *Ph.D.*
[Physical and Inorganic Chemistry, Physics.]

Mann, Albert Russell, B.S.A., 1904, *Pittsburg, Pa.*
Agriculture. *M.S. in Agr.*
[Rural Economy, Animal Breeding.]

Martin, Charles Knox, B.S. in E.E. (Univ. of Missouri), 1905, *Doniphan, Mo.*
Mechanical and Electrical Engineering. *M.M.E.*

Martin, Mattie Alexander, A.B., 1902, *Dublin, Va.*
Philosophy. *A.M.*
[Logic and Metaphysics, Ethics.]

Martin, William Franklin, B.S. (Univ. of Texas), 1903, C.E. (same), 1904, *Attoyac, Texas*
Civil Engineering, Mechanics. *M.C.E.*
[Hydraulics, Mechanics.]

Mathers, Frank Curry, A.B. (Indiana Univ.), 1903, A.M. (same), 1905, *Bloomington, Ind.*
Chemistry. *Ph.D.*
[Inorganic Chemistry, Physical Chemistry, Electro-Chemistry.]

Mehling, Mortimer Francis, A.B., 1905, *Cleveland, O.*
Chemistry. *Ph.D.*
[Organic Chemistry, Analytical Chemistry, Physical Chemistry.]

†Mills, Frederic Alden, A.B., 1904, *Ithaca*
Psychology, Greek, Mediæval History.

Mitchell, Frank Davis, A.B., 1904, *Ithaca*
Philosophy. *Ph.D.*
[Logic and Metaphysics, Ethics, Psychology.]

Mitchell, Lynn Boal, B.A. (Ohio State Univ.), 1903, A.M. (Cornell), 1904, *Piqua, O.*
Latin, Greek, Ancient History. *Ph.D.*

**Moffett, Edna Virginia, A.B. (Vassar), 1897, A.M. (Cornell Univ.),

1901, *Richmond, Va.*
History and Political Science. *Ph.D.*
[Mediæval History, Political Science, American History.]

Molby, Fred A, A.B., (Baker Univ.), 1904, *Baldwin, Kan.*
Physics, Mathematics. *Ph.D.*
[Experimental and Theoretical Physics, Mathematics.]

Molloy, Mary Aloysia, Ph.B. (Ohio State Univ.), 1903, A.M. (same), 1905, *Sandusky, O.*
English, History. *Ph.D.*
[English Philology, English History, English Literature.]

**Morris, Richard, B.S., (Rutgers), 1899, M.S. (same), 1902, *New Brunswick, N. J.*
Mathematics, Physics. *Ph.D.*
[Pure Mathematics, Applied Mathematics, Theoretical Physics.]

Murray, Elsie, A.B., 1904, *Athens, Pa.*
Philosophy, Physiology. *Ph.D.*
[Psychology, History of Philosophy, Physiology.]

†Nelson, James Allen, Ph.B. (Kenyon Coll.), 1898, Ph.D. (Univ. of Penn.), 1903, *Ithaca*
Honorary Fellow in Entomology.

Nutt, Harry Garfield, B.S. (Dartmouth Coll.), 1904, M.S. (same), 1905, *Worcester, Mass.*
History and Political Science. *Ph.D.*
[Economics and Statistics, Economics and Politics, Economics and Finance.]

Olmstead, Albert Ten Eyck, A.B., 1902, A.M., 1903, *Troy*
History and Political Science. *Ph.D.*
[Oriental History, Classical History, Mediæval History.]

Otis, Margaret, A.B., 1893, *Rochester*
Greek, Latin, Comparative Philology. *Ph.D.*

†Packard, Roscoe Milliken, A.B. (Adelbert Coll.), 1899, A.M. (same), 1900, *Washington, D. C.*
Civil Engineering.
[Hydraulics, Structures.]

Parrott, Percival John, A.B. (Kans. State Univ.), 1897, A.M. (same), 1899, *Geneva*
Entomology. *Ph.D.*
[Systematic Entomology, Economic Entomology.]

†Paull, Leslie Fairbanks, B.P. (Brown Univ.), 1897, A.M. (same), 1898, *Somerset, Mass.*
Agriculture, Botany.
[Horticulture, Agronomy, Soils, Botany.]

Pawling, Jesse Randolph, A.B., 1905, *Watertown*
Physiology, Histology. *A.M.*

Pierce, Clarence Albert, B.S. (Wesleyan Univ.), 1902, M.S. (same), 1904, *Roxbury, Conn.*
Physics. *Ph.D.*
[Experimental Physics, Theoretical Physics, Mathematical Physics.]

Poindexter, Charles Cardoza, B.S. in Agr. (Ohio State Univ.), 1903, *Parkersburg, W. Va.*
Agriculture. *M.S. in Agr.*
[Agronomy, Nature Study.]

Rather, Ethel Zivley, A.B. (Univ. of Texas), 1902, A.M. (same), 1903, *Gonzales, Texas*
History and Political Science, Romance Languages. *Ph.D.*
[American History, Mediæval History, Spanish,]

Ray, Burton Justice, A.B. (Wake Forest Coll.), 1904, *Raleigh, N. C.*
Chemistry. *Ph.D.*
[Organic Chemistry, Physiological Chemistry, Physical Chemistry.]

**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, Mediæval History.]

Read, Effie Alberta, A.B., 1903, *Haverhill, Mass.*
Histology and Embryology. Entomology. *A.M.*

Reade, John Moore, B.S.A. (Univ. of Toronto), 1900, *Toronto, Canada*
Botany, Entomology. *Ph.D.*
[Botany (Mycology), Botany (Taxonomy of Angiosperms), Entomology.]

Reddick, Donald, A.B. (Wabash Coll.), 1905, *Noblesville, Ind.*
Botany, Entomology. *Ph.D.*
[Botany (Mycology), Botany (Physiology), Entomology.]

Reinecke, Leopold, A.B. (Univ. of Cape of Good Hope), 1902, *Languedoc, Cape Colony*
Geology. *Ph.D.*
[Stratigraphical Geology, Paleontology, Mineralogy.]

Renner, Roland Borman, B.S (Purdue Univ.), 1902, M.E. (Cornell), 1904, *Nashville, Tenn.*
Mechanical Engineering. *M.M.E.*
[Experimental Engineering, Machine Design.]

Rice, George Whitmore, M.E., 1903, *Ithaca*
Mechanical Engineering. *M.M.E.*
[Mechanical and Experimental Engineering.]

†Richter, Martin Luther, Jr., B.S. in C.E. (Univ. of Ga.), 1904, *Madison, Ga.*
Electrical Engineering, Physics.

Riegel, Ross Milton, C.E., 1904, *Harrisburg, Pa.*
Civil and Mechanical Engineering. *M.C.E.*
[Applied Mechanics, Experimental Engineering.]

Robertson, George C, A.B., 1905, *Buffalo*
Chemistry, Agriculture. *A.M.*
[Sanitary Chemistry, Dairy Industry.]

Robinson, Louis Newton, A.B. (Swarthmore Coll.), 1905, *Vosburg, Pa.*
History and Political Science. *Ph.D.*
[Economics and Politics, Economics and Finance, Philosophy.]

Robinson, Samuel Egbert, B.S. in Agr. (State Coll. of Washington), 1905, *Walla Walla, Wash.*
Agriculture. *M.S. in Agr.*
[Agronomy, Horticulture.]

Rodgers, Ralph Chapman, M.E., 1905, *Binghamton*
Physics. *A.M.*
[Experimental Physics, Theory of Light, etc.]

Rogers, Clarence Arthur, B.S.A., 1904, *Bergen*
Agriculture. *M.S. in Agr.*
[Horticulture, Poultry.]

Rogers, William Woolard, A.B., 1905, *New York City*
History and Political Science. *A.M.*
[Ancient History, Modern European History.]

Sabine, George Holland, A.B., 1903, *Dayton, O.*
Philosophy. *Ph.D.*
[Logic and Metaphysics, Psychology, Ethics.]

Sawdon, Will M, B.S. in M.E. (Purdue Univ.), 1898, *Aurora, Ind.*
Mechanical Engineering. *M.M.E.*
[Mechanical Engineering of Power Plants, Steam Engines and other Prime Motors.]

†Sayward, Mary Edith, A.B. Smith Coll.), 1894, *Springvale, Me.*
Botany, Zoology, Physiology.

Schluederberg, Carl George, M.E., 1902, *Pittsburg, Pa.*
Chemistry, Physics. *Ph.D.*
[Electro-Chemistry, Physics, Inorganic Chemistry.]

Schmitz, Nicholas, B.S. in Agr.(Kansas State Agr. Coll.), 1904 *Sterling, Kan.*
Agriculture, Botany. *Ph.D.*
[Root Nodules of Legumes, Study in Cereals, Botany (Physiology.)]

Seaton, Sara, A.B. (Wellesley Coll.), 1896, *Cleveland, O.*
Botany. *A.M.*
[Botany (Morphology and Embryology, Mycology).]

Shanks, Lewis Edward Piaget, Ph.B., 1899, A.M. (Columbia Univ.), 1904, *Ithaca*
Romance Languages, History and Political Science. *Ph.D.*
[French, Italian, Mediæval History.]

Sharpe, Francis Robert, A.B., (Cambridge Univ.), 1892, *Ithaca*
Mathematics. *Ph.D.*
[Applied Mathematics, Pure Mathematics.]

†Sheldon, Helen Griswold, A.B. (Vassar Coll.), 1891, *Ithaca*
Entomology, Botany, Vertebrate Zoology.

Sheldon, Ralph Edward, A.B., 1904, A.M., 1905, *Ithaca*
Neurology, Histology, Comparative Anatomy. *Ph.D.*

Shipman, Robert Lee, B.E. (Univ. of Missouri), 1895, E.E. (same), 1896, M.E. (Cornell Univ.), 1899, M.M.E. (same), 1904, *Ithaca*
Physics, Mathematics, *Ph.D.*
[Applied and Theoretical Physics, Mathematics.]

Shreve, Richmond Harold, B.Arch., 1902, *Ithaca*
Architecture, Civil Engineering. *M.S. in Arch.*
[Steel-Concrete Beams, Foundations.]

Sil, Surendra Nath, A.B. (Calcutta Univ.), 1902, *Calcutta, India*
Agriculture. *M.S. in Agr.*
[Agronomy, Botany (Mycology).]

**Sisam, Charles Herschel, A.B., (Univ. of Mich.), 1902, A.M., (Cornell Univ.), 1903, *Sloan, Iowa*
Mathematics, Physics. *Ph.D.*
[Pure Mathematics, Applied Mathematics, Physics.]

*Smith, Gertrude, A.B. (Vassar Coll.), 1897, A.M. (same), *Portland, Me.*
Mathematics, Civil Engineering. *Ph.D.*
[Pure Mathematics, Applied Mathematics, Mechanics.]

Smith, Huron Herbert, B.S. (De Pauw Univ,), 1905, *Winchester, Ind.*
Botany, Physiology. *Ph.D.*
[Botany (Systematic), Pharmacology, Botany (Mycology).]

†Smith, Julius André, B.S. in Arch., 1902, M.S. in Arch., 1903, *New York City*
Fellow in Architecture.

Snowdon, Ralph Cuthbert, A.B., 1904, *Scranton, Pa.*
Chemistry. *A.M.*
[Electro Chemistry, Inorganic Chemistry.]

Spencer, George Lawton, M.E. (Brown Univ.), 1904, *Providence, R. I.*
Mechanical Engineering. *M.M.E.*
[Naval Architecture, Marine Engineering.]

†Stacy, Marvin Hendrix, Ph.B. (Univ. of N. C.), 1902, A.M. (same), 1904, *Waxhaw, N. C.*
Civil Engineering.

** Stewart, Fred Carlton, B.S. (Iowa Agr. Coll.), 1892, M.S. (same, 1894, *Geneva*
Botany. *Ph.D.*
[Botany (Mycology, Physiology, Histology.)]

Stone, Isabelle, A.B. (Wellesley Coll.), 1905, *Needham, Mass.*
[Greek, Comparative Philology.] *A.M.*

Swaine, James Malcolm, B.S. in Agr., 1905, *Truro, Nova Scotia*
[Economic Entomology, Systematic Vert. Zoology.] *M.S. in Agr.*

Tan, Tien Chih, B.S. (Tientsin Univ.), 1899, B.S. (Univ. of California), 1904, *Canton, China*
Agriculture. *M.S. in Agr.*
[Agricultural Chemistry, Agronomy.]

Taylor, Albert Davis, B.S. (Mass. Agr. Coll.), 1905, *Westford, Mass.*
Agriculture, Botany. *M.S. in Agr.*
[Horticulture, Botany (Systematic).]

Thoroughgood, Robert William, C.E. (Lehigh Univ.), 1902, *Georgetown, Del.*
[Municipal Engineering and Sewage Disposal, Mining or Masonry and Foundations.] *M.C.E.*

Tower, Charles Homer, B.S. (Worcester Poly. Inst.), 1905, *Dalton, Mass.*
Mechanical Engineering, Chemistry. *M.M.E.*
[Electrical Engineering, Electro Chemistry.]

Turrentine, John William, Ph.B. (Univ. of N. C.), 1901, M.S. (same), 1902, *Burlington, N. C.*
Chemistry. *Ph.D.*
[Inorganic Chemistry, Electro Chemistry, Organic Chemistry.]

Tuttle, Elbert B, B.S. in E.E. (Iowa State Coll), 1899, *Ames, Ia.*
Physics, Mathematics. *Ph.D.*
[Experimental Physics, Theoretical Physics, Mathematics.]

**Van Hook, James M, A.B. (Indiana Univ.), 1899, A.M. (same), 1900, *Borden, Ind.*
Botany. *Ph.D.*
[Botany (Mycology, Comparative Morphology and Embryology, Physiology.)]

†Vocke, Charles William, M.E., 1900, *Baltimore, Md.*
Industrial Chemistry.

Waggoner, Chauncey William, B.S. in E.E. (Ohio Univ.), 1904, A.M. 1905, *Sugar Grove, O.*
Physics. *Ph.D.*
[Experimental Physics, Theoretical Physics, Electricity and Magnetism.]

Walbridge, Mabel Harriet, A.B. (McGill Univ.), 1897, *Mystic, P. Q., Can.*
Physics, Mathematics. *A.M*

Walker, Charles Leopold, C.E., 1904, *North Evans*
Civil Engineering. *M.C.E.*
[Experimental Hydraulics, Sanitary Engineering.]

Watkins, George Pendleton, A.B., 1899, *King Ferry*
History and Political Science. *Ph.D.*
[Political Economy, Statistics, Politics.]

Watt, Homer Andrew, *Wilkes-Barre, Pa.*
English, German, History and Political Science. *Ph.D.*
[English, German, English History.]

Waugh, Robert Benjamin, A.B. (Hobart Coll.), 1902, *Phelps*
Philosophy. *Ph.D.*
[Metaphysics and Logic, Ethics, Greek Philosophy.]

Weed, Alfred Cleveland, A.B., 1905, *North Rose*
Systematic Vertebrate Zoology, Comparative Anatomy. *A.M.*

West, Mary Cheves, B.S. (Teachers' Coll.), 1902, *Farmville, Va.*
Philosophy. *Ph.D.*
[Philosophy, Psychology, Ethics.]

**Whetzel Herbert Hice, A.B. (Wabash College), 1902, *Arilla, Ind.*
Botany. *Ph.D.*
[Botany (Mycology), Botany (Systematic), Botany (Physiology).]

Wheeler, John, M.E., 1903, *Ithaca*
Mechanical Engineering, Experimental Engineering. *M.M.E.*

White, Paul J, A.B. (Southwest Kansas Coll.), 1900, A.M. (Univ. of Oklahoma), 1901, *Norman, Okla.*
Agriculture. *M.S. in Agr.*
[Agronomy, Horticulture.]

White, Gorrell Robert, A.B., 1905, *Auburn*
Chemistry. *A.M.*
[Electro Chemistry, Inorganic Chemistry.]

†Whiting, Rex Anthony, D.V.M., 1905, *Patchin*
Pathology, Veterinary Sanitary Science, Anatomy.

Whittlesey, Walter Lincoln, A.B. (Univ. of Oregon), 1901, *Portland, Ore.*
History and Political Science. *Ph.D.*
[Economics and Politics, Economics and Finance, Modern European History.]

Wick, Frances Gertrude, A.B., 1905, *Butler, Penn.*
Physics. *A.M.*
[Experimental Physics, Theoretical Physics.]

Wilson, Charles Scoon, A.B., 1904, M.S. in Agr., 1905, *Hall's Corners*
Agriculture. *Ph.D.*
[Horticulture, Agronomy.]

†Wilson, John Henry, B A. (S. Stephen's Coll.), 1896, M.A. (same), 1899, M.A. (S. Francis Xavier), 1898, M.A. (New York Univ.), 1898, *Brooklyn*
Chemistry, Physics, Mechanical Engineering.

Wold, Peter Irving, B.S. (Univ. of Oregon), 1901, E.E. (same), 1901, *Eugene, Ore.*
Physics. *A.M.*
[Experimental Physics, Theoretical Physics.]

Worthen, Edmund Louis, B.S. (Univ. of Illinois), 1904, *Warsaw, Ill.*
Agriculture. *M.S. in Agr.*
[Soils, Farm Crops.]

Wright, Albert Hazen, A.B., 1904, A.M., 1905, *Hilton*
Vertebrate Zoology, Comparative Anatomy, Histology. *Ph.D.*

Young, Helen L., A.B, 1900, *East Palmyra*
History and Political Science. *Ph.D.*
[American History, Political Economy and Politics, Modern European History.]

Zerns, Arthur Burtis, A.B., 1905, *Watertown*
History and Political Science. *Ph.D.*
[Economics and Politics, Economics and Statistics, American History.]

Graduate Students in Undergraduate Courses.

Abrahams, Morris Landa, B.S. in M.E. (A. & M. Coll. of Texas), 1903, *M.E.*

Aitken, John Winfield, Jr., C.E. (Penn. Mil. Coll.), 1904, *M.E.*

Aleman, Fernando, B.A. (National Agr. Coll.), 1898, *B.S.A.*

Ames, Harry Lee, A.B. (Randolph-Mason Coll.), 1901, *M.E.*

Balcke, Walter Henry, A.B. (Ill. Coll.), 1904, *M.E.*

Baldwin, Mark E, M.D. (Baltimore Med. Coll.), 1900, *Sp. M.D.*
Baltasar, Apolinario, B.S. (Manila), 1903, *C.E.*
Baron, James John, B.A. (Anatolia), 1895, B.D. (same), 1898, M.D. (Yale), 1903, *Sp. M.D.*
Barrows, Franklin William, A.B. (Amherst), 1885, A.M. (same), 1888, M.D. (Univ. of Buffalo), 1893, *Sp. M.D.*
Bautista, Mariano, B.A. (Ateneo de Manila), 1902, *B.Arch.*
Becker, Neal Dow, LL.B., 1905, *A.B.*
Beebe, Silas Palmer, B.S. (Harvard), 1900, *M.D.*
Berrini, Luiz Carlos, C.E. (Mackenzie Coll.), 1904, *M.E.*
Berry, Romeyn, A.B., 1904, *LL.B.*
Best, Herbert H, M.D. (New York Univ.), 1896, *Sp. M.D.*
Bishop, Ernest Simons, A.B. (Brown Univ.), 1899, *M.D.*
Bliss, George Ripley, B.A. (Bucknell Univ.), 1903, *M.E.*
Bostroem, August, Jr., B.S. (Coll. City of New York), 1903, *M.E.*
Boxmeyer, Charles Herbert, A.B. (Stanford Univ.), 1896, *M.D.*
Bradley, James Chester, A.B. (Phila. Cent. H. S.), 1903, *A.B.*
Brewrink, John Edward, Ph.B. (North Western Univ.), 1902, *M.E.*
Brown, Stanley Doty, A.B., 1905, *LL.B.*
Burnham, Enoch Lewis, A.B. (Harvard), 1904, *C.E.*
Butts, Mary Byrissa, B.A. (Grove City Coll.), 1902, *A.B.*
Cahill, Francis Joseph, A.B., 1903, *M.D.*
Caldwell, Isabel, A.B., 1904, *M.D.*
Canaga, Gordon Byron, B.A. (Scio Coll.), 1902, *C.E.*
Carlisle, Lenore Nelson, A.B. (New Windsor Coll.), 1896, *M.D.*
Carroll, William Gilbert, B.L. (Baylor Univ.), 1903, *M.E.*
Cassola, Filippo, M.D. (Univ. of Naples), 1899, *Sp. M.D.*
Chace, Archibald Eastwood, A.B., 1904, *M.D.*
Chamberlain, Frank Wilbut, B.S. (Univ. of Vt.), 1904, *D.V.M.*
Chapman, Arthur William, Ph.B. (Wesleyau Univ.), 1903, *M.D.*
Child, Frank Samuel, Jr., Ph.B. (Hamilton Coll.), 1903, *M.D.*
Chryssides, Stavros Stephen, A.B. (Robert Coll.), 1905, *M.E.*
Clark, Ellen Stout, B.P. (West Chester Nor.), 1903, *A.B.*
Clurman, Morris Joseph, A.B., 1905, *M.D.*
Cockrill, Emmet, B.M.E. (Univ. of Ark.), 1905, *M.E.*
Coffman, John Daniel, A.B. (Phila. High School), 1900, *A.B.*
Colletti, Ignatius, M.D. (Palermo Univ., Italy), 1903, *Sp. M.D.*
Collier, Lamar Sheffield, M.E. (Ga. Sch. of Tech.), 1905, *M.E.*
Cornell, Florence M, A.B. (New York City Nor. Coll.), 1905, *A.B.*
Craig, Ira Lynn, M.Di (Iowa Normal), 1905, *M.E.*
Craig, Samuel Daley, A.B. (Hampden Sidney Coll.), 1904, *B.Arch.*
Craighead, James Ray, B.A. (Williams Coll.), 1895, M.A. (same), 1898, *M.E.*

Crawford, Mary Merritt, A.B., 1904, *M.D.*
Cross, Ralph Adam, A.B., 1904, *LL.B.*
Cuddeback, Edgar Gordon, A.B., 1904, *M.D.*
Cunningham, Allan Rupert, A.B. (Dalhousie Univ.), 1900, M.D. (same), 1904, *Sp. M.D.*
Cutler, Charles Evlynn, A.B., 1904, *B.Arch.*
Davis, Charles Roy, A.B. (Ouachita Coll.), 1904, *M.D.*
Davis, Roy Bingham, A.B., 1904, *LL.B.*
Day, Rodney Dean, B.A. (Yale Univ.), 1903, *M.E.*
Delaney, William H, M.D. (Laval Coll., Quebec), 1898, *Sp.M.D.*
Denenholz, Aaron, M.D. (N. Y. Univ.), 1897, *Sp. M.D.*
Dennis, Nina A, A.B., 1904, *M.D.*
Dewey, Thomas Augustus, B.S. (Va. Mil. Inst.), 1903, *M.E.*
Dodson, Martha Ethel, B.E. (Bloomsburg State Nor.), 1903, *A.B.*
Donahue, William James Aloysius, A.B. (St. Peter's Coll.), 1904, *M.D.*
Dragoshinoff, Dragoshin George, A.B. (Robert Coll.), 1904, *B.S.A.*
Drake, William Allen, B.S. (Purdue Univ.), 1899, *M.E.*
Dryfuss, Barney Joachim, B.S. (Coll. City of N. Y.), 1899, M.D. (Univ. of Louisville), 1903, *M.D.*
Dubuis, John, B.A. (Presbyterian Coll. of S. C.), 1905, *C.E.*
Estill, George Castleman, A.B. (Kentucky Univ.), 1902, *M.E.*
Evans, Gordon Maynard, B.S. (Coll. City of New York), 1904, *M.E.*
Fabbri, Remo, Ph.G. (Phar. Inst. N. Y. City), 1904, *Sp.M.D.*
Fairlamb, Gertrude May, M.E. (West Chester Normal), 1898, *A.B.*
Farrior, James William, B.E. (N. C. Coll. of Agr. & Mech. Arts), 1904, *M.E.*
Felknor, James Minnis, A.B. (Maryville Coll.), 1905, *C.E.*
Fendrich, William, Jr., B.S. (Coll. City of New York), 1904, *M.E.*
Fenno, George Francis, B.S. (Coll. City of New York), 1903, *M.E.*
Fernow, Bernard Edward, Jr., A.B., 1904, *M.E.*
Fisher, Mary Jones, A.B. (Western Maryland Coll.), 1890, *A.B.*
Fleming, Bryant Percival, B.S. (Utah Agr. Coll.), 1900, *C.E.*
Fraser, Homer E, M.D. (Bellevue), 1891, *Sp. M.D.*
Fraser, Nora Blanding, A.B. (Mary Baldwin Sem.), 1901, *A.B.*
Frey, Harry Charles, A.B., 1904, *LL.B.*
Freyre, Leopoldo Estanislao, A.B. (Univ. of Havana), 1903, *C.E.*
Frost, Harry Barber, B.S. (Univ. of No. Car.), 1904, *M.E.*
Fryer, Harry Lee, B.S. (Oregon Agr. Coll.), 1905, *M.E.*
Gaby, Robert Edward, B.A. (Toronto Univ.), 1903, *M.D.*
Galadjikian, Alexander Sarkis, A.B. (Robert Coll.), 1904, *M.E.*
Garrow, Theodore Alexander, B.S. (Ore. Agr. Coll.), 1905, *M.E.*
Gaston, Edwards Pablo, A.B. (Univ. of Havana), 1900, *M.E.*

Gehr, Ray Stewart, Ph.B. (Adelbert Coll.), 1899, *M.E.*
Gelser, George Merrill, A.B. (Yale), 1904, *M.D.*
George, Emma Louise, Ped.B. (Albany Nor. Coll.), 1897, *Sp. A.B.*
Gilchrist, Jessie Lewis, M.P. (Bloomsburg Nor.), 1898, *A.B.*
Ginorio, Francisco Ricardo, A.B. (Inst. de Puerto Rico), 1899, *M.E.*
Gomez, José Antonio, Ph.B. (Vicente Rocafuerte Coll.), 1904, *C.E.*
Gooch, Verson Woodman, B.S. (Dartmouth Coll.), 1901, *D.V.M.*
Goodall, Edwin Baker, M.D. (Maryland Med. Coll.), 1905, *Sp. M.D.*
Graves, Gaylord Willis, A.B., 1905, *M.D.*
Greenberg, Max, A.B., 1905, *M.E.*
Gregg, Robert, B.S. in M.E. (Ga. Sch. of Technology), 1905, *M.E.*
Gregson, Edward Jesse, B.A. (Univ. of Sydney), 1903, *M.E.*
Grove, Elmer Emanuel, A.B. (Randolph-Macon Coll.), 1903, A.M. (same), 1904, *M.E.*
Haines, Charles Alvin, A.B. (Muhlenberg Coll.), 1904, *M.E.*
Harris, Eugene Augustus, A.B. (Southwestern Univ. of Tex.), 1888, M.D. (same), 1891, *Sp. M.D.*
Hart, Harold Leslie, A.B., 1903, *LL.B.*
Hartnett, Micheal Arnold, B.S. (So. Car. Mil. Acad.), 1904, *M.E.*
Hascall, Theodore Conrad, Ph.B. (Brown Univ.), 1905, *M.D.*
Hatfield, Hazel May, A.B., 1905, *M.D.*
Hocson, Felix, B.A. (Manila), 1902, *Sp. B.S.A.*
Horn, Stanley Granger, A.B., 1905, *M.D.*
Irvine, Pierpont Edward, A.B. (Kenyon Coll.), 1904, *M.E.*
Johnson, Howard White, B.S. (Northwestern Univ.), 1904, *M.E.*
Johnston, James Markham Ambler, B.S. (Va. Poly. Inst.), 1904, M.E. (same), 1905, *M.E.*
Jones, George Francis, A.B. (Biddle Univ.), 1901, *Sp. B.S.A.*
Joshi, Lemuel Lucas, B.Sc. (Univ. of Bombay), 1902, *M.D.*
Junger, Marcus, M.D. (Univ. of Cracow, Austria), 1899, *Sp. M.D.*
Kearns, Thomas Joseph, B.A. (Manhattan Coll.), 1902, *M.D.*
Kenajian, Hagop Getiguny, B.S. (Ohio Northern Univ.), 1904, C.E. (same), 1905, *Sp. C.E.*
Kernan, Nicholas Edward, A.B. (Georgetown), 1903, *LL.B.*
King, Alfred Faris, B.S. (Princeton), 1905, *M.E.*
Koehler, Charles George, Jr., A.B., 1904, *M.D.*
Krass, Ralph William, B.S. (Coll. City of N. Y.), 1903, *M.E.*
Kronberg, Sol, A.B. (Coll. City of N. Y.), 1903, *C.E.*
Laase, Christian F J, B.S. (Coll. City of N. Y.), 1899, M.D. (New York Univ.), 1894, *Sp. M.D.*
Laird, Ida Marie, A.B., 1904, *M.D.*
Legge, Robert Thomas, Ph.G. (Univ. of Calif.), 1891, M.D. (same), 1899, *Sp. M.D.*

Lewis, Ora Mabelle, A.B. (Smith Coll.), 1900, *M.D.*
Lodge, Richard Leslie, C.E. (Univ. of Ala.), 1904, *Sp.C.E.*
London, Julius, M.D., 1905, *Sp. M.D.*
Louis, Henry Charles Ernest, A.B. (Johns Hopkins), 1904, *M.E.*
Luke, Harry Cliff, Ph.G. (Univ. of Buffalo), 1897, *M.D.*
Lyon, Charles Albert, A.B. (Princeton), 1901, *M.E.*
McCollum, Eugene Lawrence, LL.B., 1905, *Sp.A.B.*
McCombs, Carl Esselstyn, A.B. (Union Coll.), 1904, *M.D.*
McGlone, John, A.B. (Johns Hopkins), 1904, *M.E.*
McIver, George Walter, B.S. (Clemson Coll.), 1904, *M.E.*
McKay, Florence Lurinda, A.B., 1905, *M.D.*
McKelvey, Joseph Vance, B.A. (Westminster Coll.), 1902, *A.B.*
Maloney, Edgar William, B.A. (St. Lawrence Univ.), 1905, *C.E.*
Mann, Charles Maitland, A.B., 1904, *M.D.*
Mannoccir, James Earle, B.A. (Spring Hill Coll.), 1904, *M.E.*
Mansfield, Edward Raymond, B.S. (Univ. of Me.), 1899, *M.D.*
Martin, Arthur Harold, A.B., 1904, *M.D.*
Martinez, Carlos, B.S. iu Nat. Sci. (Univ. of Arequipa, Peru), 1903, *M.E.*
Mason, William Henry, B.Sc. (Sydney Univ.), 1905, *M.E.*
Matthews, Hubert Willard, B.S. (Clemson Coll.), 1904, *M.E.*
Matty, Frank Joseph, C.E. (Penna. Mil. Coll.), 1905, *M.E.*
Mitchell, James Reid, Jr., A.B., 1905, *M.D.*
Mitchell, Walter R, M.E. (Md. Agr. Coll.), 1904, *M.E.*
Moore, Kingman Colquitt, B.S. (Mercer Univ.), 1897, *Sp.B.S.A.*
Moores, Merrill Bruce, B.S. (Ore. Agr. Coll.), 1905, *M.E.*
Moorman, Silas Mercer, A.B. (Georgetown Coll.), 1898, *M.D.*
Morgan, William Conant, B.S. (Amherst Coll.), 1903, *M.E.*
Morrow, Homer Nichols, A.B. (Southwestern Presbyterian Univ.), 1904, *M.E.*
Mortimer, Charles Ward, B.S. (Miss. College), 1902, *M.E.*
Mowat, John Frederic, A.B., 1904, *M.E.*
Muenz, Sigmund, B.S. (Coll. City of New York), 1901, *C.E.*
Nelbach, George Joseph, A.B., 1905, *LL.B.*
Newcomb, Robert Scott, B.S. (Univ. of Ga.), 1905, *M.E.*
Oberndorf, Clarence Paul, A.B., 1904, *M.D.*
Olds, Thomas Hartman, B.S. (A. & M. Coll. of Texas), 1902, *C.E.*
Oliver, Clifford Rylander, A.B. (Univ. of Ga.), 1904, *M.E.*
O'Neill, Charles Leo, A.B. (Seton Hall Coll.), 1904, *M.D.*
Orr, Chester Andrew, B.S. in M'n'g Eng. (Case School), 1905, *C.E.*
Parker, Esther Emily, A.B., 1905, *M.D.*
Patterson, Lucius Lamar, A.B. (Miss. Coll.), 1898, A.M. (same), 1899, *M.E.*

Patton, William Fearn, Jr., A.B., (Hampton-Sidney Coll.), 1903, *M.E.*
Payne, Charles Rockwell, A.B., 1902, *M.D.*
Payne, Edward Duggan, C.E. (Princeton), 1905, *M.E.*
Pease, George Norman, A.B., 1904, *M.D.*
Perry, Leslie Donald, A.B., 1905, *M.E.*
Petit, Charles Wesley, B.S. (Univ. of Calif.), 1903, *Sp.C.E.*
Phelan, James, A.B. (Princeton Univ.), 1905, *M.E.*
Pierce, Paul Leon, B.S. (Chattanooga Nor. Univ.), 1901, *C.E.*
Pierson, Farrand Baker, A.B. (Princeton), 1897, *Sp. M.D.*
Ponce de Leon, Felipe, A.B. (Habana Inst.), 1900, *C.E.*
Porter, Floyd John, B.S.A., 1905, *A.B.*
Porterie, Gaston Louis, B.S. (La. State Univ.), 1904, *C.E.*
Price, Daniel J, M.D. (Baltimore Med. Coll.), 1902, *Sp.M.D.*
Quarles, Tev Randolph, B.M.E. (Univ. of Ark.), 1904, *M.E.*
Quisumbing, Emilio, B.A., (Manila), 1900, *C.E.*
Ray, Anna Elizabeth, A.B. (Normal Coll. New York), 1899, A.M. (New York Univ.), 1902, *M.D.*
Reed, Lucy Carleton, A.B., 1904, *M.D.*
Reyes, José, A.B. (Ateneo de Manila), 1904, *B.Arch.*
Richardson, Frank Howard, A.B., 1904, *M.D.*
Richter, Martin Luther, Jr., B.S. in C.E. (Univ. of Ga.), 1904, *M.E.*
Robertson, Ralph Keuyon, A.B., 1904, *LL.B.*
Robinson, Charles Albert, Jr., A.B. (Johns Hopkins), 1903, *M.E.*
Roman, Julius Caesar, B.S. (West Inst. of Granada, Nicaragua), 1894, *M.D.*
Root, Mary Pauline, M.D. (Women's Med. of Penna.), 1883, *Sp. M.D.*
Rossman, Allen M, A.B., 1905, *M.E.*
Roudebush, Roy Everett, A.B. (Indiana Univ.), 1903, *M.E.*
Rud, William Victor, B.S. (Miss. Agr. and Mech. Coll.), 1903, *B.S.A.*
Rulison, Elbert Theodore, Jr., B.S. (Union Coll.), 1904, *M.D.*
Ryan, Walter J, A.B. (Oberlin), 1903, *C.E.*
Sackman, Gilbert Roy, B.S. (Coll. City of New York), 1905, *M.E.*
Sampaio, Vincente de Almeida, B.S. (Mackenzie Coll.), 1903, *M.E.*
Santee, Harold Elmore, A.B., 1904, *M.D.*
Saulsbury, Henry Wilson, A.B. (Western Md. Coll.), 1902, *M.E.*
Scales, Henry Jackson, B.S. in E.E. (Ga. Sch. of Tech.), 1904, B.S. in M.E. (same), 1905, *M.E.*
Scheidenhelm, Fred William, A.B., 1905, *C.E.*
Schmid, Robert Major, B.S. (Coll. City of New York), 1902, *M.E.*
Scholtz, Herman Fred, B.C.E. (Ky. State Coll.), 1905, *C.E.*
Schutz, Harry Herman, B.S. (New Mex. Coll. of Agr.), 1905, *B.S.A.*

Schwartz, Leo Samson, Ph.G. (New York Coll. of Pharmacy), 1901, *M.D.*
Schwartz, Samuel Robert, A.B. (Coll. City of New York), 1903, *M.E.*
Sebastian, John A, B.S. (Univ. of Louisville), 1899, M.D. (same), 1899, *Sp. M.D.*
Shane, Bernard, B.S. (Coll. City of New York), 1902. *C.E.*
Simonton, Ira Boyce, B.S. (Univ. of Fla.), 1903, *M.E.*
Smith, Jay Lewis, A.B., 1904, *M.E.*
Specht, William Henry, D.D.S. (New York C. D.), 1902, *M.D.*
Strehan, George Earnest, B.S. (Coll. City of New York), 1904, *M.E.*
Summer, Wilhelm Carl, A.B. (Clemson), 1902, *M.E.*
Sweet, Earl Vincent, A.B. (Colgate), 1901, *M.D.*
Swisher, Donald De Witt, A.B. (Univ. of Tenn.), 1903, *B.Arch.*
Tappan, Frank Girard, A.B. (Washington & Jeff.), 1904, *M.E.*
Tenney, Albert Seward, A.B., 1905, *M.D.*
Thorne, Victor Corse, Ph.B. (Yale), 1894, L.L.B. (Columbia), 1899, M.D. (Cornell), 1902, *Sp. M.D.*
Thro, William Crooks, B.S.A., 1900, A.M., 1901, *M.D.*
Tibbetts, Harland Bryant, A.B., 1904, *LL.B.*
Tiffany, Dean Stanley, B.S. (Keuka Coll.), 1905. *B.S.A.*
Tinkler, John, Jr., A.B., 1905, *M.D.*
Tully, John James, A.M. (Cooper Med. Coll.), 1882, M.D. (same) 1886, *Sp. M.D.*
Turner, William Joel, B.A. (Wash. & Lee Univ.), 1903, *C.E.*
Vaughn, Eva Gertrude, A.B. (Converse Coll.), 1905, *A.B.*
Vaughn, Leland Alexander, B.L. (Kenyon Coll.), 1904, *M.E.*
Veazey, John Armor, A.B. (Westminster Coll.), 1902, *A.B.*
Wade, Henry Albert, M.D. (New York Univ.), 1894, *Sp. M.D.*
Walker, William Joseph, A.B. (Coll. City of New York), 1904, *M.D.*
Wallower, Edgar Zollinger, C.E. (Princeton), 1905, *M.E.*
Wanless, Richard, D.O., (Am. Sch. of Osteopathy), 1900, *M.D.*
Waterhouse, Ernest Comston, A.B. (Princeton), M.D. (New York Coll. of Physicians and Surgeons), 1898, *Sp. M.D.*
Watkins, Warner Merriwether, B.S. (Va. Poly. Inst.), 1904, *M.E.*
Way, Cassius, B.Agr. (Conn. Agr. Coll.), 1899, *A.B.*
Weber, Florenz Pauline, M.E. (Clarion Normal), 1895, *A.B.*
Weber, Salo, A.B. (Coll. City of New York), 1904, *M.D.*
Welch, Stewart Henry, A.B. (Southern Univ.), 1902, *M.D.*
Welles, Edward Murray, A.B., 1905, *M.D.*
West, Ray Benedict, B.S. (Agr. Coll. of Utah), 1904, *C.E.*
Westgate, Mary Lauton, B.A. (Wesleyan Univ.), 1897, *B.Arch.*
Wetherill, John Larkin, C.E. (Pa. Mil. Coll.), 1905, *M.E.*

Wheeler, Earl, B.S. in E.E. (Kansas State Agr. Coll.), 1905, *Sp. M.E.*
White, Gersham Franklin, B.S. (Ohio Univ.), 1901, Ph.D. (Cornell), 1905, *M.D.*
Williams, Maurice William, B.S. (Colgate Univ.), 1903, *Sp. C.E.*
Wills, John Gordon, B.S.A. (Univ. of Vermont), 1903, *D.V.M.*
Wilson, David, A.B., 1905, *M.D.*
Winans, James Albert, A.B. (Hamilton), 1897, A.M. (same), 1900, *LL.B.*
Wing, Lucius Arthur, B.Sc. (Ohio State Univ.), 1903, *M.D.*
Winslow, Elizabeth Bishop, A.B., 1901, *M.D.*
Wise, Frank Lounsbury, B.A. (Coll, City of New York), 1904, *M.E.*
Wolheim, Louis Robert, B.S. (Coll. City of New York), 1903, *M.E.*
Wonderly, George Arthur, Ph.B. (Dickinson Coll.), 1905, *M.E.*
Wood, Edward Ainsley, C.E. (Univ. of the South), 1905, *C.E.*
Wood, Frank Travers, B.S. (Va. Mil. Inst.), 1904, *M.E.*
Woodhull, Stephen Curtis, D.O. (Am. Sch. of Osteopathy), 1900, *M.D.*
Wortman, Otto, B.S. (Coll. City of New York), 1903, *M.E.*
Wright, Thomas Temple, B.A. (Richmond Coll.), 1904, *C.E.*
Ycasiano-Roxas, Francisco, B.A. (Ateneo de Manila), 1903, *M.E.*
Yih, Koliang, A.B. (Chinese Univ.), 1902, *B.S.A.*

UNDERGRADUATES.

The figures 1, 2, 3, 4, directly preceding the course indicate Freshman, Sophomore, Junior, and Senior years, respectively, in the four year courses. In the three year course in Law, 1, Jr., and Sr. indicate 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.

The figures 1, 2, 3, 4, 5, etc., directly following the name indicate the number of terms which the student has registered in the course stated. Whereas registration in medicine in New York City is for entire year, one year's registration is assumed to be for two terms.

Abarca, Henry, (2)	*San Juan, Porto Rico,*	1 Mech. Eng.
Abbey, Samuel Hamill, (2)	*Smithtown Branch,*	1 Mech. Eng.
Abel, Edna May, (2)	*Trumansburg,*	1 Arts
Abrahams, Morris Landa, B.S. in M.E., (5)	*New Braunfels, Tex.,*	1 Mech. Eng.
Ackerman, Golden Alice, (4)	*Fayetteville,*	2 Arts
Acklin, James Montgomery, (8)	*Toledo, O.,*	4 Mech. Eng.
Acklin, William Collord, (2)	*Toledo, O.,*	1 Arts
Adair, Craig, (7)	*Wilmington, Del.,*	4 Mech. Eng.
Adams, Arthur Garfield, (6)	*Ithaca,*	Sr. Law
Adams, Frank Avery, (5)	*Coxsackie,*	Jr. Law
Adams, Francis Salisbury, (6)	*Durwood, Minn.,*	2 Mech. Eng.
Adams, Percy Hart, (2)	*Greenport,*	1 Arts
Adams, William Huntington, (1)	*Ithaca,*	1 Mech. Eng.
Adendorff, John, (6)	*Johannesburg, So. Africa,*	3 Mech. Eng.
Adler, Emil, (2)	*Buffalo,*	1 Mech. Eng.
Adler, George Herman, (4)	*New York City,*	2 Arts
Agcaoili, Francisco, (4)	*Ylocos Norte, P. I.,*	3 Arts
Agcaoili, Romarico, (4)	*Ylocos Norte, P. I.,*	2 Civil Eng.
Aguilar, John Edward, (4)	*Santiago, Cuba,*	2 Civil Eng.
Aitken, John Winfield, Jr., C.E., (3)	*Carbondale, Pa.,*	3 Mech. Eng.
Akin, Ransom Wallace, (6)	*Carlisle, Ind.,*	Sr. Law
Albrech, Maximilian Claude, (5)	*Lowville,*	4 Arts
Alcott, Arthur David, (6)	*Troy, North End,*	3 Mech. Eng.
Alderman, William Horace, (4)	*Albion,*	2 Agriculture
Aleman, Fernando, B.A., (4)	*Buenos Ayres, Arg. Rep.,*	3 Agr.
Allaben, Charles Moore, (2)	*Margaretville,*	1 Medicine

Allan, William Lyn, (2)	*Redlands, Calif.*,	Sp. Mech. Eng.
Allen, Anna, (2)	*Buffalo*,	1 Agriculture
Allen, Arthur Augustus, (4)	*Buffalo*,	2 Arts
Allen, Mary Lillian, (2)	*Ithaca*,	1 Arts
Allen, Margaret May, (8)	*Ithaca*,	4 Arts
Allen, William Daniel, (8)	*Buffalo*,	4 Mech. Eng.
Aller, Howard Lewis, (8)	*Richmond Hill*,	4 Mech. Eng.
Alliaume, Curtis Franklin, (6)	*Oriskany*,	Sr. Law
Allison, Raymond Vance, (2)	*Statesville, N. C.*,	1 Mech. Eng.
Almeida, Manuel Buarque, (2)	*Rio de Janeiro, Brazil*,	1 Civil Eng.
Almgren, Ebba Elizabeth, (8)	*Stockholm, Sweden*,	3 Med. (N.Y.C.)
Alonso, Jose Aurelio, (1)	*New York City*,	1 Civil Eng.
Altemose, Earl Stanley, (4)	*Scranton, Pa.*,	3 Mech. Eng.
Ambler, Letitia, (2)	*Philadelphia, Pa.*,	1 Arts
Ames, Harry Lee, A.B., (6)	*Painter, Va.*,	3 Mech. Eng.
Anderson, Egbert Butler, (4)	*Hopewell Junction*,	Sp. Agr.
Anderson, Elizabeth Anne, (2)	*Philadelphia, Pa.*,	1 Arts
Anderson, Eroy Henry, (4)	*Hilton*,	1 Agriculture
Anderson, Frank Gibbs, (9)	*Auburn*,	4 Mech. Eng.
Anderson, Jane Elizabeth, (2)	*Wilkinsburg, Pa.*,	1 Arts
Anderson, Ross Peter, (4)	*Savannah*,	2 Arts
Anderson, Victor William, (4)	*New York City*,	2 Med. (N.Y.C.)
Andrews, Benjamin Clark, (2)	*South Kortright*,	1 Med. (N.Y.C.)
Andrews, Clarence Raplee, (4)	*Penn Yan*,	2 Mech. Eng.
Andrews, George Greenwood, (2)	*Washington, D. C.*,	1 Civil Eng.
Andrews, Hewitt Roger, (2)	*Athens, Pa.*,	1 Mech. Eng.
Andrews, Joseph Church, (2)	*New Britain, Conn.*,	1 Arts
Andrews, Thomas Earl, (1)	*Owego*,	1 Agriculture
Andrews, Thomas Harvey Skinner, (2)	*Brooklyn*,	1 Mech. Eng.
Anthony, Clarence Douglas, (2)	*New York City*,	1 Civil Eng.
Appel, Harris Arkush, (4)	*Denver, Colo.*,	2 Civil Eng.
Appel, Willard Sands, (4)	*New York City*,	1 Mech. Eng.
Argetsinger, James Cameron, (4)	*Burdett*,	Jr. Law
Arms, John Heyl Raser, (2)	*Roselle, N. J.*,	1 Mech. Eng.
Armstrong, John Edwin, (2)	*Peoria, Ill.*,	2 Civil Eng.
Armstrong, Marion, (6)	*Pittsburg, Pa.*,	3 Arts
Armstrong, Perry Miller, (2)	*Rome*,	1 Law
Armstrong, Thomas Andrew, (6)	*Hamilton, Ont., Can.*,	3 Civil Eng.
Armstrong, Walter James, (3)	*Fair Hill, Md.*,	2 Mech. Eng.
Arnold, Carter Alston, (2)	*Elberton, Ga.*,	2 Civil Eng.
Arnold, Edward August, (4)	*New York City*,	2 Med. (N.Y.C.)
Arnold, Lawrence, (6)	*Brooklyn*,	Sr. Law

Arnold, Percy Linden, (6)	*Bergen*,	3 Mech. Eng.
Arnold, Turner Schuette, (3)	*Clarion, Pa.*,	1 Mech. Eng.
Arnold, Willian Henry, (2)	*Clyde*,	Sp. Agriculture
Aronovici, Louis Solomon, (2)	*Ithaca*,	Sp. Agriculture
Aronson, Henry, (8)	*Brooklyn*,	4 Med. (N. Y. C.)
Arosemena, Pablo Gaspar, (2)	*Panama, So. America*,	1 Mech. Eng.
Ashburner, Lesley, (8)	*Media, Pa.*,	4 Civil Eng.
Atwater, Henry, (8)	*East Orange, N. J.*,	4 Mech. Eng.
Atwater, Louise Harriette, (2)	*Clearview*,	1 Arts
Austin, Benjamin Hale, (4)	*Honolulu, H. T.*,	1 Mech. Eng.
Austin, Herbert Sidney, (6)	*Poughkeepsie*,	3 Civil Eng.
Avery, Christine Schermerhorn, (2)	*West Taghkanic*,	1 Arts
Avery, Earl William, (4)	*Ilion*,	2 Agriculture
Avery, Frederick, (2)	*Rochester*,	1 Mech. Eng.
Axtell, Clayton Morgan, (2)	*Barboursville*,	1 Medicine
Ayer, Lynn Francis, (6)	*Angola*,	1 Agriculture
Babb, Virginia Elizabeth, (1)	*Wichita, Kans.*,	3 Arts
Babcock, Hiram Howard, (4)	*Auburn*,	Jr. Law
Babcock, Langdon, (2)	*Rochester*,	1 Civil Eng.
Babcock, Richard Elmer, (6)	*Buffalo*,	Sr. Law
Baber, Charlotte, (3)	*New Rochelle*,	2 Arts
Babson, Rea Edwin, (8)	*South Orange, N. J.*,	4 Mech. Eng.
Bachman, Charles Franklin, (4)	*Wilkes-Barre, Pa.*,	2 Mech. Eng.
Backus, Lee Seldon, (6)	*Derby*,	3 Veterinary
Backus, Robert Erle, (8)	*Jamestown*,	4 Arch.
Baer, Clarence Eugene, (4)	*New Castle, Pa.*,	2 Arts
Baer, Ella Laura, (4)	*East Orange, N. J.*,	2 Arts
Bagg, Egbert, Jr., (7)	*Utica*,	3 Arch.
Baggerly, Herman Douglas, (8)	*Clifton Springs*,	4 Mech. Eng.
Baggs, Martha, (5)	*Fulton*,	2 Arts
Baggs, Ralph Leonard, (2)	*New York City*,	1 Arts
Bailey, Clarence Archie, (1)	*East Bloomfield*,	Sp. Agr.
Bailey, Frederick Eugene, (5)	*Ithaca*,	Sp. Agr.
Bailey, Edwin James, Jr., (1)	*Ellenville*,	1 Mech. Eng.
Bailey, Sara May, (2)	*Ithaca*,	1 Arts
Bailliere, Marion Valentine, (4)	*Ellicott City, Md.*,	1 Mech. Eng.
Baird, Warner Green, (4)	*Chicago, Ill.*,	2 Mech. Eng.
Baker, Augustus Lynn Landon, (4)	*Ledgewood, N. J.*,	1 Med. (N.Y.C.)
Baker, Clareuce Mulford, (4)	*La Moure, No. Dak.*,	1 Civil Eng.
Baker, Charles Schenck, (2)	*Elmira*,	1 Mech. Eng.
Baker, Davis, (2)	*North Granville*,	1 Medicine
Baker, Ernest Leroy, (2)	*Belfast*,	1 Agriculture

Baker, Horace Patton, (2)	*Philadelphia, Pa.*,	1 Mech. Eng.
Baker, James Harvey, (6)	*Philadelphia, Pa.*,	3 Mech. Eng.
Baker, Louis Munson, (4)	*Oneonta*,	Jr. Law
Baker, Ross Lee, (7)	*Greenwood*,	3 Mech. Eng.
Baker, Thomas Wallace, (4)	*Portland, Ore.*,	2 Mech. Eng.
Baker, Valentine Collamer, (2)	*Ballston, Spa.*,	1 Medicine
Balcke, Walter Henry, A.B., (4)	*Quincy, Ill.*,	3 Mech. Eng.
Baldwin, Charles Reuben, (6)	*Volney Center*,	2 Veterinary
Baldwin, Dane Lewis, (2)	*Groton*,	1 Arts
Baldwin, Edna Cameron, (4)	*Ithaca*,	2 Arts
Baldwin, Fraucis William, (6)	*New York City*,	3 Med. (N.Y.C.)
Baldwin, Harry Clark, (8)	*Ithaca*,	Sr. Law
Baldwin, Josiah Morris, (1)	*Montgomery, Ala.*,	1Mech. Eng.
Baldwin, Mabel Cornelia, (6)	*Fort Erie, Ont., Can.*,	3 Arts
Baldwin, Mark E, M.D., (1)	*Homestead, Pa.*,	Sp. Med.(N.Y.C.)
Baldwin, Roger Allan, (2)	*Burlington, Iowa*,	2 Arts
Baldwin, Thomas Abbott, (4)	*Mt. Washington, Md.*,	2 Arch.
Baldwin, Wesley Manning, (4)	*Brooklyn*,	3 Arts
Ball, Sylvia Ernestine, (7)	*Warren, Pa.*,	4 Arts
Ballance, Willis Henry, Jr., (6)	*Peoria, Ill.*,	4 Mech. Eng.
Ballard, John Carlos, (6)	*West Falls Church, Va.*,	3 Mech. Eng.
Ballou, Clarence Maturin, (6)	*No. Adams, Mass.*,	2 Mech. Eng.
Ballon, Edward John, (2)	*Gardenville*,	1 Medicine
Balmforth, Lillian Viola Hazel, (1)	*Holley*,	1 Arts
Baltasar, Apolinario, B.S., (4)	*Manila, P. I.*,	2 Civil Eng.
Bamberger, Clarence Greenwald, (4)	*Salt Lake City, Utah*,	2 Mech. Eng.
Bancel, Paul August, (2)	*New York City*,	1 Mech. Eng.
Banta, Russell Vincent, (2)	*Brooklyn*,	1 Civil Eng.
Bantel, Raymond Joseph Francis Xavier Aloysius, (4)	*Rochester*,	2 Arts
Barber, Dean Mounder, (2)	*Skaneateles*,	Sp. Agriculture
Barbour, Anna Violet, (7)	*Indianapolis, Ind.*,	4 Arts
Barclay, Wilbur Edward, (2)	*Aurora, Ill.*,	1 Mech. Eng.
Barker, Charles Rex, (2)	*Pittsburg, Pa.*,	Sp. Agriculture
Barkhorn, Henry Charles, (6)	*Newark, N. J.*,	3 Med. (N. Y. C.)
Barlow, Cone, (2)	*Oak Park, Ill.*,	1 Mech. Eng.
Barlow, Warren Stanley, (6)	*Syracuse*,	Sr. Law
Barnes, Harold Fairchild, (2)	*New York City*,	1 Medicine
Barnes, Sarah Louise, (2)	*Stockbridge, Mass.*,	1 Arts
Barnum, Charles Leslie, (2)	*Brooklyn*,	1 Mech. Eng.
Barnum, Eugene Everett, (2)	*Albion*,	1 Agriculture
Barnum, Victor Bayard, (4)	*Centreville*,	2 Mech. Eng.

Baron, James John, B.A., B.D., M.D.,	*Sivas, Turkey,*	Sp. Med. (N. Y. C.)
Barritt, Nelson, (2)	*West Pittston, Pa.,*	1 Civil Eng.
Barron, John Hall, (7)	*Nunda,*	1 Agriculture
Barrows, Franklin William, A.B., A.M., M.D., (2)	*Buffalo,*	Sp. Med. (N. Y. C.)
Barrows, Lee Earl, (6)	*Olean,*	Sp. Mech. Eng.
Barsky, Michael Halpern, (8)	*New York City,*	4 Med. (N. Y. C.)
Bartholomay, Herman, (6)	*Rochester,*	3 Mech. Eng.
Bartholomew, Walter Lee, (2)	*Cortland,*	1 Mech. Eng.
Barton, Robert Charles, (8)	*Seattle, Wash.,*	4 Mech. Eng.
Barton, William Hill, (4)	*Ashgrove, Mo.,*	2 Mech. Eng.
Barvian, Eugene John, (6)	*Cowlesville,*	Sr. Law
Barzaghi, Arthur Jerome, (2)	*New York City,*	1 Civil Eng.
Bassett, Donald Lewis, (2)	*Carbondale, Pa.,*	1 Civil Eng.
Bassett, Robert Van Rensselaer, (6)	*Owego,*	Sr. Law
Bassett, Wilmer Wilson, (4)	*Interlaken,*	Sp. Agriculture
Bateman, James Garfield, (4)	*Mt. Carmel, Pa.,*	2 Mech. Eng.
Bateman, Warner Mifflin, (4)	*Glendale, O.,*	2 Mech. Eng.
Bates, Clarence Townley, (3)	*Ithaca,*	1 Civil Eng.
Bates, Harry H, (8)	*Joliet, Ill.,*	4 Mech. Eng.
Battey, Fay Hemming, (2)	*Buffalo,*	1 Civil Eng.
Battle, Joel Allan, Jr., (4)	*Evanston, Ill.,*	1 Mech. Eng.
Baum, Robert Stanton, (2)	*Chicago, Ill.,*	1 Mech. Eng.
Baumgarten, Paul Jones, (2)	*New York City,*	1 Architecture
Baumhofer, Clyde Franklin, (2)	*Niagara Falls,*	1 Arts
Bautista, Mariano, B.A., (2)	*Manila, P.I.,*	1 Architecture
Baxter, Allan Hayden, (4)	*Buffalo,*	2 Mech. Eng.
Baxter, Milton Edwin, (4)	*Elizabeth, N. J.,*	2 Med. (N.Y.C.)
Baxter, Roland Gillie, (4)	*Tonawanda,*	Jr. Law
Bayer, Edward Irving, (2)	*Toledo, O.,*	Sp. Agriculture
Beadle, Lynn Constant, (4)	*Oxford,*	2 Mech. Eng.
Beam, John Vanderbeck, (1)	*Grand View,*	1 Mech. Eng.
Beaman, Charles Leicester, (4)	*Ithaca,*	2 Mech. Eng.
Beck, Walter W, (2)	*Columbiana, O.,*	Sp. Law
Becker, Caroline Fredericka, (2)	*Baltimore, Md.,*	1 Arts
Becker, Neal Dow, LL.B., (2)	*Ithaca,*	4 Arts
Becker, Otto Edward, (6)	*Buffalo,*	3 Arts
Beckmann, Harry Theodore, (2)	*Toledo, O.,*	1 Mech. Eng.
Beckwith, William, (1)	*Providence, R. I.,*	2 Mech. Eng.
Beddow, Thomas Eckley, (2)	*Nanticoke, Pa.*	Sp. Mech. Eng.
Beebe, Silas Palmer, B.S., (2)	*Flushing,*	1 Med. (N. Y. C.)
Beebee, Lewis, (8)	*Aurora,*	4 Mech. Eng.

Beeson, Emily May, (2)	*Nat. Soldier's Home, Va.*,	2 Arts
Bell, Albert Mortimer, (4)	*Glen Head*,	2 Med. (N.Y.C.)
Bell, Cecil Kenneth, (2)	*Ithaca*,	1 Arch.
Bell, Mary Amelia, (2)	*Eureka, Calif.*,	1 Arts
Bellows, Brian Chandler, (8)	*Richmond*,	4 Mech. Eng.
Beltz, Harry Rommel, (1)	*Brooklyn*,	1 Civil Eng.
Bemis, Harry Albert, (2)	*Charlemonte, Mass.*,	1 Law
Bender, Oswald Lewis, (6)	*Martinsburg, W. Va.*,	3 Mech. Eng.
Bendheim, Berthold Herbert, (6)	*Houston, Texas*,	3 Mech. Eng.
Benedict, Julius Thompson, (3)	*Chicago, Ill.*,	2 Arts
Benham, Alice Welles, (2)	*McLean*,	1 Arts
Benjamin, Jack Ansel, (2)	*Chicago, Ill.*,	1 Mech. Eng.
Benjamin, Marion, (10)	*Cleveland, O.*,	4 Architecture
Bennett, Cornelius Morris, (2)	*Ovid*,	Sp. Agriculture
Bennett, Lawrence Gale, (2)	*Ithaca*,	1 Arts
Bennett, Mabel Lillian, (2)	*Brooklyn Manor*,	1 Arts
Bennett, Ray, (8)	*Ithaca*,	4 Arts
Benny, James Edwin, (4)	*Bayonne, N. J.*,	Jr. Law
Benson, George Fred, (2)	*Syracuse*,	1 Mech. Eng.
Bentley, William Kimball, (4)	*Pulaski*,	Jr. Law
Bergen, Ruth Christine Lovell, (2)	*Ithaca*,	1 Arts
Bergen, Robert Robinson, (4)	*Ithaca*,	2 Arts
Berger, Edward, (2)	*New York City*,	1 Med. (N.Y.C.)
Berkeley, Landon Robinson, (6)	*Orange, Va.*,	3 Mech. Eng.
Berkowitz, Samuel Simpson, (6)	*Brooklyn*,	3 Arts
Bernadi, Walter Adam, (2)	*Pittsburg, Pa.*,	1 Architecture
Bernstein, Morris Jerome, (3)	*Brooklyn*,	1 Law
Bernstein, Siegbert, (2)	*New York City*,	1 Med. (N.Y.C.)
Berrini, Luiz Carlos, C.E., (2)	*Sao Paulo, Brazil*,	2 Mech. Eng.
Berry, Romeyn, A.B., (4)	*Hudson*,	Sr. Law
Berryman, Ashley Merle, (3)	*New York City*,	1 Civil Eng.
Berthier, Stella de Liancount, (1)	*London, England*,	1 Veterinary
Bessey, Mabelle Abbot, (8)	*Brooklyn*,	4 Arts
Best, Herbert H, M.D., (1)	*Pembroke, Me.*,	Sp. Med. (N.Y.C.)
Best, Ralph Emerson, (4)	*Pittsburg, Pa.*,	2 Mech. Eng.
Betts, Benjamin Harrison, (6)	*Tonawanda*,	3 Arts
Bevin, Sydney, (4)	*New York City*,	2 Mech. Eng.
Bidstrup, Daniel Mark, (4)	*Brooklyn*,	Sp. Agriculture
Biele, Frederick John, (2)	*Brooklyn*,	1 Civil Eng.
Bierma, Arthur Graham, (4)	*Buffalo*,	2 Mech. Eng.
Bigelow, Oromel Harry, (4)	*Palmyra, Wis.*,	3 Mech. Eng.
van Bijlevelt, Joannes Samuel, (4)	*The Hague, Holland*,	2 Mech. Eng.
Bilderbeck, George Leslie, (8)	*So. Hartwick*,	4 Civil Eng.

Bills, George Dudley, Jr., (4)	*Oak Park, Ill.*,	2 Arts
Billwiller, Charles James, Jr., (9)	*Brooklyn*,	4 Mech. Eng.
Billwiller, Ernest Oswald, (4)	*Brooklyn*,	1 Mech. Eng.
Bingham, Albert James, (2)	*Sherburne*,	Sp. Agriculture
Bintz, William Henry, Jr., (3)	*Salt Lake City, Utah*,	1 Arts
Birdsall, Winslow, (2)	*Croton Lake*,	1 Med. (N.Y.C.)
Birkhahn, Jacques, (2)	*New York City*,	2 Civil Eng.
Birmingham, Joseph Leo, (1)	*Elmira*,	1 Law
Bishop, Ernest Simons, A.B., (4)	*Providence, R. I.*,	2 Med. (N.Y.C.)
Bishop, Richard Evett, (2)	*Syracuse*,	1 Mech Eng.
Bishop, William Smart, (8)	*Savannah*,	4 Mech. Eng.
Black, Hampton, (8)	*Montgomery, Ala.*,	2 Mech. Eng.
Black, Roy Turnbull, (2)	*Brooklyn*,	1 Arts
Blade, Bessie May, (2)	*Hornellsville*,	1 Arts
Blaine, Carlton Allen, (2)	*Lyons*,	1 Mech. Eng.
Blake, Alfred DeGroot, (6)	*West New Brighton*,	3 Mech. Eng.
Blake, Helen Elizabeth, (4)	*North Adams, Mass.*,	2 Arts
Blake, Harold D, (2)	*Naples*,	1 Mech. Eng.
Blakeslee, Irvin, (8)	*Coal Glen, Pa.*,	2 Mech. Eng.
Bligh, Arthur Hemen, (2)	*Warsaw*,	1 Mech. Eng.
Bliss, George Ripley, B.A., (6)	*Washington, D. C.*,	4 Mech. Eng.
Bliss, Henry Worthington, (2)	*Indianapolis, Ind.*,	1 Mech. Eng.
Block, Alexander, (6)	*Brooklyn*,	3 Med. (N. Y. C.)
Blum, Charlotte, (8)	*New York City*,	4 Med. (N.Y.C.)
Blum, Samuel George, (2)	*Brooklyn*,	1 Med. (N.Y.C).
Blunt, Albert Church, Jr., (6)	*Fort Terry*,	3 Mech. Eng.
Blunt, Stanhope, Eccleston, (2)	*Fort Terry*,	1 Mech. Eng.
Boardman, Albert Jay, (4)	*Philadelphia, Pa.*,	2 Mech. Eng.
Bobb, Ralph Daniel, (2)	*Roaring Spring, Pa.*,	1 Mech. Eng.
Boegehold, Carl Winter, (8)	*Mt. Vernon*,	4 Mech. Eng.
Boegehold, Edwin Swart, (4)	*Mt. Vernon*,	2 Mech. Eng.
Boehler, Charles Ferdinand, (2)	*Camden*,	Sp. Agriculture
Boeker, Leopold, (4)	*Richmond Hill*,	2 Mech. Eng.
Bogardus, Thomas Lowe, (2)	*Mt. Vernon, O.*,	1 Law
Bogert, George Gleason, (8)	*Ithaca*,	4 Arts
Bohan, Francis James, (3)	*Auburn*,	2 Arts
Bohlen, August Carl, (2)	*Indianapolis, Ind.*,	1 Architecture
Bohrer, Walter, (6)	*Cincinnati, O.*,	4 Mech. Eng.
Bolger, Elizabeth May, (6)	*Philadelphia, Pa.*,	4 Arts
Booth, Elmir James, (4)	*Reed City, Mich.*,	2 Mech. Eng.
Boring, Edwin Garrigues, (4)	*Philadelphia, Pa.*,	2 Mech. Eng.
Bosler, Harlan Gibson, (6)	*Indianapolis, Ind.*,	Sr. Law

Bostroem, August, Jr., B.S., (4)	*New York City*,	4 Mech. Eng.
Botelho, Antonio Carlos, (3)	*Sao Paulo, Brazil*,	Sp. Agr.
Bouck, Ida Julia, (2)	*Schoharie*,	1 Arts
Bouldin, Wood, Jr., (4)	*Houston, Va.*,	4 Civil Eng.
Bousfield, Harold Walgrove, (4)	*Brooklyn*,	2 Architecture
Bowen, Willett Raynor, (1)	*Syracuse*,	1 Arts
Bower, Frank Albert, (2)	*Brooklyn*,	1 Mech. Eng.
Bower, Jacob, (2)	*New York City*,	1 Med. (N.Y.C.)
Bower, John Gosh, Jr., (8)	*Hagerstown, Md.*,	4 Arts
Bowes, Joseph, Jr., (2)	*Baltimore, Md.*,	2 Mech. Eng.
Bowman, Robert H, (2)	*Kansas City, Mo.*,	1 Law
Bowman, Ralph McLane, (4)	*Washington, D. C.*,	1 Civil Eng.
Bowman, Sadie Agatha, (4)	*Norwich, Conn.*,	2 Arts
Boxmeyer, Charles Herbert, A.B., (6)	*Holden, Mo.*,	4 Med.(N.Y.C.)
Boyajohn, Haig Milton, (4)	*New York City*,	2 Civil Eng.
Boyce, Benjamin Knowlton, (6)	*Salamanca*,	3 Mech. Eng.
Boyle, Thomas Frank, (2)	*Montour Falls*,	1 Law
Boynton, William Hutchens, (2)	*Melrose, Calif.*,	1 Veterinary
Bradley, Charles Leininger, (4)	*Cleveland, O.*,	2 Arts
Bradley, Elmer Percy, (4)	*Pemaquid, Me.*,	3 Mech. Eng.
Bradley, James Chester, A.B., (6)	*Parral, Mexico*,	4 Arts
Bradley, John Ruskin, (6)	*Brooklyn*,	3 Med. (N. Y. C.)
Bradley, Lee R, (4)	*Interlaken*,	2 Mech. Eng.
Bradley, Margaret, (2)	*Newark*,	1 Arts
Brady, Josephine, (2)	*Philadelphia, Pa.*,	1 Arts
Brahmer, Leland Frank, (4)	*Lowville*,	1 Mech. Eng.
Brainerd, Harold Affleck, (6)	*Westfield, N. J.*,	3 Civil Eng.
Braman, James Lloyd, (8)	*Plattsburg*,	Sr. Law
Brandow, Emory Elmer, (6)	*Catskill*,	3 Civil Eng.
Brandt, Otto, Jr., (4)	*Newark, N. J.*,	2 Arts
Brannon, Frank Small, (4)	*Owensboro, Ky.*,	2 Mech. Eng.
Brauner, Henry Arthur, (2)	*Ithaca*,	1 Architecture
Braunworth, Percy Lewis, (8)	*Brooklyn*,	4 Civil Eng.
Braymer, Daniel Harvey, (8)	*Hebron*,	4 Arts
Breen, Thomas Alfred, (6)	*Ithaca*,	2 Veterinary
Breger, Coppy Levinthal, (8)	*Brooklyn*,	4 Arts
Breglia, John Eugene, (2)	*New York City*,	1 Med. (N.Y.C.)
Brendler, Charles, (4)	*New York City*,	2 Med. (N.Y.C.)
Brennan, Russell Henry, (6)	*Utica*,	Sr. Law
Brewer, Ethel Angeline, (2)	*Cooperstown*,	2 Arts
Brewer, Florence Eunice, (2)	*Cooperstown*,	2 Arts
Brewrink, John Edward, Ph.B., (6)	*Pullman, Wash.*,	3 Mech. Eng.

Brewster, Leo Allie, (6)	*Wolcott*,	3 Arts
Brias-Roxas, Antonio, (2)	*Manila, P. I.*,	2 Civil Eng.
Brierley, Wilfrid Gordon, (6)	*Dover, N. H.*,	4 Agriculture
Brigham, John Chester, (4)	*Ossining*,	2 Civil Eng.
Briggs, Thomas Roland, (2)	*Flushing*,	1 Arts
Brinckerhoff, Horace Everett, (6)	*Mt. Vernon*,	4 Agriculture
Brink, Calvin Clark, (2)	*Hammondsport*,	1 Medicine
Brinton, Charles Chester, (2)	*Butte, Mont.*,	1 Mech. Eng.
Britten, Edwin Franklin, Jr., (6)	*Jersey City, N. J.*,	3 Mech. Eng.
Britton, Josephine, (6)	*Camden, N. J.*,	Sp. Arts
Britton, Karl Beckwith, (8)	*Glenville, O.*,	3 Mech. Eng.
Brockway, Leon McMurray, (4)	*Wolcott*,	2 Civil Eng.
Broguet, Fernando José, (2)	*Ithaca*,	1 Mech. Eng.
Bromley, John Hallock, (4)	*Plattsburgh*,	2 Mech. Eng.
Brookman, Horace Dwight, (2)	*Wellsville, O.*,	1 Mech. Eng.
Brower, Bert, (4)	*Palatine Bridge*,	2 Arts
Brown, Alice Fargo, (7)	*Buffalo*,	4 Arts
Brown, Aaron, (8)	*New York City*,	4 Med. (N. Y. C.)
Brown, Bernice Lucy, (2)	*Port Chester*,	1 Arts
Brown, Clyde Channing, (6)	*New Hampton, N. H.*,	Sr. Law
Brown, Charles Seamans, (2)	*Syracuse*,	1 Mech. Eng.
Brown, Cleo Wesley, (4)	*Bemus Point*,	2 Civil Eng.
Brown, Edmond Swain, (4)	*Ithaca*,	3 Arts
Brown, Franklin Reed, (4)	*Buffalo*,	1 Law
Brown, George Nelson, (4)	*Ogdensburg*,	2 Mech. Eng.
Brown, George Teall, (10)	*New York City*,	3 Mech. Eng.
Brown, George Tod, (1)	*New York City*,	1 Mech. Eng.
Brown, Grover Charles, (8)	*Ithaca*,	4 Civil Eng.
Brown, Harry Philip, (2)	*Herkimer*,	1 Arts
Brown, Harold William, (4)	*Jersey City, N. J.*,	2 Medicine
Brown, Louis Isaac, (1)	*Jackson, O.*,	1 Arts
Brown, Melville Gilfillan, (2)	*Brooklyn*,	1 Mech. Eng.
Brown, Robert Harry, (4)	*Detroit, Mich.*,	2 Mech. Eng.
Brown, Stanley Doty, A.B., (2)	*New York City*,	1 Law
Browne, Charles Lowman, (2)	*Aberdeen, So. Dak.*,	1 Arch.
Browne, Maurice Joseph, (2)	*Great Barrington, Mass.*,	1 Law
Browne, William Henry, Jr., (8)	*Great Barrington, Mass.*,	3 Mech. Eng.
Bruce, Oliver Standard, Jr., (4)	*Buffalo*,	2 Mech. Eng.
Brundage, Floyd Collins, (8)	*Andover*,	4 Mech. Eng.
Bruyn, Elizabeth A, (1)	*Brooklyn*,	Sp. Arts
Bryant, Frank Alva Mitchell, (6)	*New York City*,	3 Med. (N. Y. C.)

Bryde, Walter Stanley, (2)	*New York City*,	1 Mech. Eng.
Buchanan, James Dewar, (2)	*Youngstown, O.*,	1 Mech. Eng.
Buchwalter, Morris Lyon, Jr., (2)	*Cincinnati, O.*,	1 Arts
Buck, Frank Williams, (2)	*Ithaca*,	1 Mech. Eng.
Buckbee, Blanche, (8)	*French Mountain*,	4 Arts
Budd, Percy Hiram, (4)	*Pleasant Valley*,	2 Civil Eng.
Bües, Christian Rudolph August, (8)	*Achim, Germany*,	4 Agriculture
Buhlert, Frank Adolf, (2)	*Boston, Mass.*,	Sp. Agriculture
Bull, Harry Gifford, (4)	*Keeseville*,	2 Arts
Bullen, Stearns Samuel, (2)	*Au Sable Forks*,	1 Arts
Bullis, Charles Gardner, (2)	*Olean*,	1 Law
Bullis, Harold Edmund, (2)	*Oswego*,	1 Mech. Eng.
Bullis, Seth Madison, (4)	*Olean*,	2 Mech. Eng.
Burd, Harry Grover, (2)	*Trenton, N. J.*,	1 Mech. Eng.
Burkhart, John Conner, (4)	*Portland, Ore.*,	2 Mech. Eng.
Burlingame, Geoffrey Gorton, (6)	*Syracuse*,	3 Agriculture
Burnell, Eugene Dickinson, (8)	*Mobile, Ala.*,	4 Civil Eng.
Burnett, Russell, (6)	*Fort Plain*,	4 Arts
Burnham, Enoch Lewis, A.B., (4)	*Berwyn, Pa.*,	3 Civil Eng.
Burnham, Henry Gordon, (8)	*Glens Falls*,	4 Arts
Burnham, Trumbull Griswold, (4)	*Willimantic, Conn.*,	2 Mech. Eng.
Burns, Charles, (4)	*Brooklyn*,	2 Mech. Eng.
Burns, John Robert, (6)	*Ithaca*,	2 Veterinary
Burns, Robert, (6)	*Brooklyn*,	Jr. Law
Burns, Walter William, (8)	*Greenport*,	4 Mech. Eng.
Burr, Henry Frank, (4)	*Oakdale*,	1 Mech. Eng.
Burritt, Maurice Chase, (3)	*Hilton*,	Sp. Agr.
Burrows, Earle Nelson, (6)	*Deposit*,	3 Civil Eng.
Burwell, William Turnbull, Jr., (4)	*Ithaca*,	2 Mech. Eng.
Bush, John Locke, (4)	*Kennedy*,	2 Civil Eng.
Bushnell, Frank Harpham, (2)	*Watervliet*,	1 Arts
Bushnell, Theodore Kingsley, (2)	*Denver, Colo.*,	3 Arts
Butchman, Abraham, (6)	*New York City*,	2 Med. (N.Y.C.)
Buttery, Howard Routledge, (3)	*Westfield*,	1 Arts
Button, Harry Freeman, (8)	*Forest Home*,	4 Agriculture
Butts, Mary Byrissa, B.A., (2)	*Mansfield, Pa.*,	3 Arts
Cadogan, Lucy Sweetland, (2)	*Hornellsville*,	1 Arts
Cahill, Francis Joseph, A.B., (8)	*Hoosick Falls*,	4 Med. (N. Y. C.)
Caldwell, Franklin Woods, (4)	*Meadville, Pa.*,	Jr. Law
Caldwell, Isabel, A.B., (8)	*Brooklyn*,	4 Med. (N. Y. C.)
Caldwell, Mary Foster, (4)	*Brooklyn*,	2 Arts
Calhoun, Tracy Jennings, (3)	*Cleveland, O.*,	1 Mech. Eng.

Calkins, Albert Smith, (4)	*Palmyra, Wis.*,	2 Mech. Eng.
Callahan, John Francis, (2)	*Cortland*,	1 Law
Callahan, Leo Francis, (2)	*Chicago, Ill.*,	1 Law
Callis, Henry Arthur, (2)	*Binghamton*,	1 Arts
Cameron, James Richardson, (2)	*Manor, Pa.*,	1 Mech. Eng.
Cameron, Robert Daniel, (1)	*Morrisville*,	1 Civil Eng.
de Camp, Horace Silliman, (2)	*New York City*,	1 Civil Eng.
Campbell, Donald Argyll, (2)	*Brooklyn*,	1 Arts
Campbell, Mary Theresa, (4)	*Edmeston*,	2 Arts
Campion, Edward Stephen, (2)	*Utica*,	1 Arts
Campion, Edward Winslow, (8)	*Troy*,	4 Mech. Eng.
Canaga, Gordon Byron, B.A., (6)	*Scio; O.*,	3 Civil Eng.
Candee, Allan Harry, (8)	*Hinsdale, Ill.*,	4 Mech. Eng.
Canfield, George Howard, (1)	*Bridgeport, Conn.*,	1 Civil Eng.
Caplan, Isidor, (2)	*Brooklyn*,	1 Med. (N. Y. C.)
Capron, William Cargill, (2)	*Ithaca*,	Sp. Mech. Eng.
Carey, Herbert Wood, (2)	*Cleveland, O.*,	2 Mech. Eng.
Carhart, Emory, (4)	*Ann Arbor, Mich.*,	1 Mech. Eng.
Carley, Ralph Felix, (2)	*Quincy, Ill.*,	3 Mech. Eng.
Carlisle, Lenore Nelson, A.B., (2)	*Mt. Vernon*,	3 Med. (N. Y. C.)
Carlson, Clarence Dean, (4)	*Owego*,	2 Mech. Eng.
Carman, John Alexander, (4)	*Ithaca*,	1 Agriculture
Carman, Phillip Durkee, (4)	*Manila, P. I.*,	2 Arts
Carmichael, James J, (2)	*Linwood*,	1 Law
Carnes, Frederick, (4)	*Wilmington, Del.*,	2 Mech. Eng.
Carney, John James, (4)	*Antwerp*,	2 Arts
Carpender, Sydney Bleecker, (6)	*New Brunswick, N. J.*,	3 Mech. Eng.
Carpenter, Charles Ketchum, (6)	*Ithaca*,	3 Mech. Eng.
Carpenter, George, (6)	*Ithaca*,	4 Mech. Eng.
Carpenter, George Briggs, (2)	*Cedar Rapids, Ia.*,	4 Mech. Eng.
Carpenter, John Condict, (6)	*Washington, D. C.*,	3 Mech. Eng.
Carroll, William Gilbert, B.L., (2)	*Beaumont, Texas*,	2 Mech. Eng.
Carson, Charles Bancroft, (2)	*Rochester*,	1 Mech. Eng.
Carter, Charles Edward, (7)	*Geneva, O.*,	3 Mech. Eng.
Carver, Harry Eugene, (8)	*Skaneateles*,	4 Arts
Cary, Richard, (1)	*Niagara Falls*,	1 Law
Case, Leonard Newton, (2)	*Norwich, Conn.*,	1 Veterinary
Case, Lloyd Everett, (2)	*Norwich, Conn.*,	1 Veterinary
Cassola, Filippo, M.D., (1)	*New York City*,	Sp. Med. (N.Y.C.)
Casper, William Lee, (6)	*Brooklyn*,	3 Arts
Cautley, John Randolph, (6)	*Ithaca*,	4 Mech. Eng.
Centurion, Manuel Anastasio, (2)	*Habana, Cuba*,	1 Agriculture

Chace, Archibald Eastwood, A.B., (8)	*Rochester*,	4 Med. (N. Y. C.)
Chace, Ralph Tompkins, (2)	*Brooklyn*,	1 Mech. Eng.
Chadowitz, Charles, (2)	*Brooklyn*,	1 Arts
Chadwick, Albert Angel, (7)	*Port Jervis*,	3 Architecture
Chamberlain, Frank Wilbut, B.S., (4)	*Burlington, Vt.*,	2 Veterinary
Chamberlain, Robert Franklin, (4)	*Newark Valley*,	2 Mech. Eng.
Champaign, Leigh Marsh, (8)	*Ithaca*,	3 Civil Eng.
Chandler, George Walter, (2)	*Vineland, N. J.*,	1 Law
Chapin, Archer Louis, (4)	*Thompsonville, Conn.*,	2 Arts
Chapin, Lester Grover, (4)	*Brooklyn*,	2 Architecture
Chapman, Arthur William, Ph.B., (2)	*Crown Point*,	3 Med. (N.Y.C.)
Chapman, Charles Henry, (10)	*Washington, D.C.*,	Sp. Agriculture
Chapman, Elsie May, (2)	*Philadelphia, Pa.*,	1 Arts
Chapman, Frank Carey, (6)	*Ogdensburg*,	3 Mech. Eng.
Chapman, George Merwin, Jr., (2)	*Waterbury, Conn.*,	1 Civil Eng.
Chapman, Louis Ballantine, (6)	*Hartford, Conn.*,	3 Med. (N.Y.C.)
Charles, Benson Brush, (8)	*Salamanca*,	4 Arts
Chase, George Bancroft, (2)	*No. Adams, Mass.*,	1 Agriculture
Chase, George Rowley, (4)	*Warsaw*,	1 Veterinary
Chase, Herbert, (4)	*Brooklyn*,	2 Mech. Eng.
Chase, Lyle Glentworth, (4)	*King Ferry*,	1 Mech. Eng.
Chase, Nellie Louise, (4)	*Lyndon, Vt.*,	Sp. Arts
Chatfield, Clarence Edward, (4)	*Buffalo*,	2 Mech. Eng.
Cheney, Jane Button, (8)	*Franklinville*,	4 Arts
Child, Frank Samuel, Jr., Ph.B., (4)	*Fairfield, Conn.*,	2 Med. (N.Y.C.)
Childs, Hamilton Eugene, (2)	*Syracuse*,	1 Civil Eng.
Childs, Lysander D, (8)	*Columbia, S. C.*,	4 Mech. Eng.
Chormann, Irving Otto, (8)	*Niagara Falls*,	4 Arts
Christman, Milton Valentine, (2)	*Williamsport, Pa.*,	1 Civil Eng.
Christy, Grace, (6)	*Ford City, Pa.*,	3 Arts
Christy, Mary Agnes, (4)	*Ford City, Pa.*,	2 Arts
Chryssides, Stavros Stephen, A.B., (2)	*Constantinople, Turkey*,	1 Mech. Eng
Church, Frederic Corss, (2)	*Kingston, Pa.*,	1 Arts
Church, Leon Seth, (2)	*Yates*,	1 Law
Churchill, Eleanor Elizabeth, (4)	*Buffalo*,	2 Arts
Cisneros, Anibal, (2)	*New York City*,	2 Mech. Eng.
Clapp, Percy Edwin, (8)	*North Rush*,	1 Agriculture
Clark, Alice Laura, (4)	*Chester, Conn.*,	2 Arts
Clark, Charles, (2)	*Nichols*,	1 Civil Eng.
Clark, Clifford, (4)	*Belfast*,	2 Mech. Eng.
Clark, Edward Hermans, (2)	*Cortland*,	1 Mech. Eng.

Clark, Ellen Stout, B.P., (6)	*Easton Pa.*,	3 Arts
Clark, Ethan Macpherson, (2)	*Wellsville*,	1 Architecture
Clark, Harry De Witt, (2)	*Brooklyn*,	1 Mech. Eng.
Clark, James A, Jr., (2)	*Waverly*,	1 Law
Clark, John Powell, (7)	*Norwood*,	4 Arts
Clark, Joseph Stanley, (2)	*Cornwall Landing*,	Sp. Agri.
Clark, Kathleen Bell, (5)	*Davenport, Iowa*,	4 Arts
Clark, Robert William, (2)	*Prospect, Conn.*,	1 Civil Eng.
Clark, William Lowellyn, (4)	*Ithaca*,	2 Veterinary
Clark, Wilson Delano, (4)	*Newark, N. J.*,	2 Arts
Clark, William Van Alan, (2)	*Lakewood, N. J.*,	1 Mech. Eng.
Clarke, Alexander Harris, (2)	*New York City*,	2 Arts
Clarke, Van Allen Shields, (4)	*Washington, D. C.*,	2 Mech. Eng.
Cleary, John Kearney, (6)	*Medina*,	Sr. Law
Cleaver, Fred Everett, (4)	*Odessa*,	2 Veterinary
Cleeves, Edward Warren, (4)	*Salisbury Mills*,	3 Agriculture
de Clercq, Clarence Fred, (7)	*Lebanon*,	3 Civil Eng.
Cleveland, Fred Percy, (8)	*Holyoke, Mass.*,	4 Mech. Eng.
Cleveland, Lou Baker, (6)	*Watertown*,	3 Civil Eng.
Clinton, Charles DeWitt, (2)	*Greene*,	1 Arts
Clock, Fred Adam, (2)	*Clockville*,	1 Mech. Eng.
Close, Douglas Campbell, (2)	*Sydney, N. S. W., Australia*,	Sp. Agr.
Clurman, Morris Joseph, A.B., (4)	*New York City*,	2 Med. (N.Y.C.)
Coan, Raymond Church, (4)	*Hilo, H. T.*,	2 Architecture
Cobb, Ernest Barnard, (2)	*Ithaca*,	1 Arts
Cobb, Herbert Lawrence, (6)	*Ithaca*,	Jr. Law
Cobb, Richard Henry, (2)	*Cleveland, O.*,	1 Arts
Cochran, Samuel Adams, (4)	*Little Rock, Ark.*,	1 Mech. Eng.
Cockrill, Emmet, B.M.E., (2)	*Little Rock, Ark.*,	3 Mech. Eng.
Coe, Ralph Brewster, (7)	*Oxford*,	4 Civil Eng.
Coe, Robert Lewis, (4)	*Waterbury, Conn.*,	2 Arts
Coelho, Afrodisio Sampaio, (6)	*Sao Paulo, Brazil*,	3 Agriculture
Coffin, Ernest Linwood, (4)	*Ashland, Me.*,	2 Med. (N.Y.C.)
Coffin, Fielder Juilliard, (4)	*Geneseo*,	Sp. Mech. Eng.
Coffin, Harry Randolph, (4)	*Athens*,	2 Mech. Eng.
Coffin, Helen, (8)	*Albany*,	4 Arts
Coffin, Harold Palmer, (2)	*Cortland*,	1 Law
Coffin, John Dix, (8)	*Glens Falls*,	4 Arts
Coffman, John Daniel, A.B., (2)	*Ithaca*,	1 Arts
Cogswell, Walter Kingman, (4)	*Etna*,	2 Veterinary
Cohen, Harry, (6)	*New York City*,	3 Med. (N. Y. C.)
Cohen, Henry Julius, (4)	*New York City*,	2 Med. (N. Y. C.)

Cohen, Morton, (7)	*Brooklyn*,	2 Mech. Eng.
Cohen, Samuel, (2)	*Brooklyn*,	1 Civil Eng.
Cohn, Mark, (6)	*New York City*,	3 Med. (N. Y. C.)
Coit, Robert Howland, (8)	*Grand Rapids, Mich.*,	3 Arch.
Colcord, Walter Rich, (2)	*Brooklyn*,	1 Arts
Cole, Mary Browne, (1)	*Washington, D. C.*,	Sp. Arts
Colletti, Ignatius, M.D. (2)	*New York City*,	Sp. Med. (N.Y.C.)
Collier, George Dudley, (9)	*Rochester*,	3 Mech. Eng.
Collier, Lamar Sheffield, M.E., (2)	*Atlanta, Ga.*,	4 Mech. Eng.
Collin, Henry Beaumont, (6)	*Penn Yan*,	3 Arts
Collin, John Bernhard, (5)	*Altoona, Pa.*,	2 Mech. Eng.
Collin, Karl Wilhelm, (2)	*Ithaca*,	1 Civil Eng.
Collins, John Dempsey, (8)	*Ithaca*,	4 Arts
Collins, Lucy Jane, (8)	*Amsterdam*,	4 Arts
Coloney, Leslie Houghton, (2)	*Theresa*,	Sp. Law
Colpitts, James Vandever, (2)	*Mt. Pleasant, Del.*,	1 Mech. Eng.
Coltman, Robert, 3d, (8)	*Denver, Colo.*,	4 Civil Eng.
Colvin, George Reuben, (2)	*North Bennington, Vt.*,	1 Mech. Eng.
Comstock, Cora Pearl, (4)	*Gage*,	2 Arts
Comstock, Jay Floyd, (8)	*Oxford*,	4 Mech. Eng.
Conant, Ralph Waldo, (2)	*Littleton, Mass.*,	1 Mech. Eng.
Condon, John, Jr., (4)	*Philadelphia, Pa.*,	2 Civil Eng.
Conen, John Joseph, Jr., (6)	*Brooklyn*,	3 Mech. Eng.
Conger, George Perrigo, (6)	*Owego*,	3 Arts
Conger, Hiram Grant, (2)	*Newark, N. J.*,	1 Civil Eng.
Conger, Laurence Jerome, (6)	*Groton*,	3 Civil Eng.
Conkling, Roscoe Peter, (6)	*Brockport*,	2 Arts
Conover, Hugh Bedle, (4)	*Atlantic Highlands, N. J.*,	3 Mech. Eng.
Contessa, Lawrence, (2)	*New York City*,	1 Med. (N.Y.C.)
Conwell, Walter Lichtenthaeler, (2)	*Ithaca*,	1 Civil Eng.
Cook, Charles Ferguson, (8)	*Utica*,	4 Civil Eng.
Cook, Charles Reed, (4)	*Jefferson City, Mo.*,	3 Mech. Eng.
Cook, Fayette Andrus, (4)	*Ithaca*,	2 Mech. Eng.
Cook, George Tandy, (4)	*Canton, O.*,	2 Agriculture
Cook, Lee Briggs, (2)	*Panama*,	Sp. Agriculture
Cooley, James Allen, (4)	*Canandaigua*,	2 Medicine
Coons, Perry Townsend, (2)	*Montclair, N. J.*,	1 Mech. Eng.
Cooper, Gordon Dare, (4)	*Auburn*,	1 Agriculture
Cooper, Le Brun, (7)	*East Orange, N. J.*,	2 Civil Eng.
Cooper, Robert John, (3)	*Aurora, Ill.*,	1 Mech. Eng.
Coors, Adolph, Jr., (4)	*Golden, Colo.*,	1 Arts
Corbiere, Levan Smull, (1)	*New York City*,	1 Civil Eng.

Corman, Bruce Hall, (8)	*Tonawanda*,	4 Mech. Eng.
Cornell, Clara Garfield, (6)	*Bridgeport, Conn.*,	4 Arts
Cornell, Charles Walter, Jr., (4)	*Elgin, Ill.*,	1 Mech. Eng.
Cornell, Florence M, A.B., (2)	*New York City*,	4 Arts
Cornell, Rodman Munn, (2)	*New York City*,	1 Mech. Eng.
Cornell, William Bouck, (6)	*Ithaca*,	3 Mech. Eng.
Cornwall, Perry Hamlin, (2)	*Portland, Conn.*,	1 Civil Eng.
Correa, José Alvarez, (2)	*Barrauquilla, Columbia, So. Amer.*,	1 Med. (N. Y. C.)
Corvalan, Patricio, (1)	*Salta, Arg. Rep.*,	1 Agriculture
Corwin, Charles Dudley, (4)	*Cortland*,	2 Mech. Eng.
Corwin, Daniel Chauncey, (4)	*Riverhead*,	2 Civil Eng.
Cosgrove, James Joseph, (2)	*Braddock, Pa.*,	1 Arts
Cosgrove, Samuel Allison, (6)	*Jersey City, N. J.*,	3 Med. (N.Y.C.)
Cosgrove, Thomas, (3)	*Braddock, Pa.*,	1 Civil Eng.
Costello, James Harry, (7)	*Elmira*,	3 Mech. Eng.
Coston, Pitt E, (6)	*Greenwood*,	3 Arts
Cothran, John Cleveland, (4)	*Lockport*,	2 Arts
Cottle, Arthur Preston, (4)	*Boston, Mass.*,	2 Mech. Eng.
Couch, George James, (6)	*Ithaca*,	Sr. Law
Coughlin, James Martin, Jr., (4)	*Wilkes-Barre, Pa.*,	2 Mech. Eng.
Courtright, Frank, (6)	*Aurora, Ill.*,	3 Arts
Covert, Earl Blum, (5)	*Watervliet*,	Jr. Law
Cox, Christopher Paul, (4)	*Washington, D. C.*,	2 Mech. Eng.
Cox, James William, Jr., (2)	*Albany*,	1 Mech. Eng.
Coyle, Dickson Kearns, (2)	*Pittsburg, Pa.*,	1 Mech. Eng.
Craig, Ira Lynn, M.Di., (2)	*Ames, Iowa*,	1 Mech. Eng
Craig, Samuel Daley, A.B., (2)	*Craigsville, Va.*,	1 Architecture
Craig, Sam Nesbit, (8)	*Pittsburg, Pa.*,	1 Mech. Eng.
Craighead, James Ray, B.A., M.A., (2)	*Ithaca*,	3 Mech. Eng.
Crandall, Frank Byron, (6)	*Wellsville*,	4 Arts
Craver, Arthur William, (6)	*Ithaca*,	2 Arts
Crawford, Charlotte Holmes, (8)	*Nyack*,	4 Arts
Crawford, James Dale, (4)	*Pittsburg, Pa.*,	2 Mech. Eng.
Crawford, Mary Merritt, A.B., (8)	*Nyack*,	3 Med. (N. Y. C.)
Crawford, Willard John, Jr., (4)	*Cleveland, O.*,	2 Arts
Crawley, Hanna Fennell, (1)	*Adriance, Va.*,	Sp. Arts
Cresswell, Howell Scott, (8)	*Ottumwa, Ia.*,	4 Arts
Crew, Alfred, Jr., (2)	*Paterson, N. J.*,	2 Arts
Crocheron, Bertram Hanford, (4)	*Brooklyn*,	Sp. Agriculture
Croll, Edward Henry, (2)	*Buffalo*,	1 Mech. Eng.
Crosby, Mabel Elizabeth, (2)	*West Medford, Mass.*,	1 Agr.

Cross, Charles Norman, (8)	*Warsaw*,	4 Mech. Eng.
Cross, Lewis Josephus, (2)	*Eagle Bridge*,	1 Arts
Cross, Ralph Adam, A.B., (3)	*Neversink*,	Sr. Law
Crowell, Alice Maud, (4)	*South Yarmouth, Mass.*,	4 Arts
Crowley, Daniel, (2)	*Ithaca*,	1 Law
Cuddeback, Edgar Gordon, A.B., (8)	*Port Jervis*,	4 Med. (N. Y. C.)
Cudebec, Albert Bennett, (4)	*Ithaca*,	2 Civil Eng.
Cuervo, Manuel Victorino, (8)	*Havana, Cuba*,	4 Mech. Eng.
Culbertson, John, (1)	*Bellevue, Pa.*,	1 Civil Eng.
Cullen, Charles Raymond, (4)	*Brooklyn*,	2 Mech. Eng.
Cummin, Hart, (2)	*Dayton, O.*,	1 Civil Eng.
Cumpston, Edward Henry, Jr., (2)	*Washington, D. C.*,	1 Mech. Eng.
Cuneo, Frank Joseph, Jr., (1)	*Jersey City, N. J.*,	1 Law
Cunningham, Allan Rupert, A.B., M.D., (1)	*Dartmouth, Nova Scotia*,	Sp. Med. (N. Y. C.)
Cunningham, Roy Howard, (2)	*Johnstown, Pa.*,	1 Mech. Eng.
Cunningham, Thomas Percival, (2)	*Greenport*,	1 Mech. Eng.
Cuono, James John, (2)	*New York City*,	1 Med. (N.Y.C.)
Curley, William Henry, (2)	*Pittsfield, Mass.*,	1 Med. (N.Y.C.)
Curry, Henry Milo, (2)	*Pittsburg, Pa.*,	1 Mech. Eng.
Curry, Rowland Ashby, (6)	*Wooster, O.*,	3 Architecture
Curtis, Clarence Sylvester, (2)	*Northampton, Mass.*,	1 Mech. Eng.
Curtis, Florence Abbott, (4)	*Port Chester*,	2 Arts
Curtis, Harold Bartlett, (6)	*New Castle, Pa.*,	3 Arts
Curtis, Harry Leroy, (8)	*New York City*,	4 Mech. Eng.
Curtis, Margaret, (2)	*New Castle, Pa.*,	1 Arts
Curtiss, Charles Benjamin, Jr., (2)	*Bay City, Mich.*,	1 Mech. Eng.
Curtiss, Edwin Stair, (9)	*Cleveland, O.*,	4 Mech. Eng.
Cushman, Robert Asa, (8)	*Providence, R. I.*,	3 Agriculture
Custer, Lewis Bayard, (6)	*Glenolden, Pa.*,	3 Civil Eng.
Cuthbert, Mary Margaret Ross, (4)	*Dawson, Yukon Terr.*,	Sp. Painting
Cutler, Charles Evlynn, A.B., (4)	*Pembroke*,	4 Architecture
Cutter, Robert Delamere, (4)	*Bethlehem, Pa.*,	2 Mech. Eng.
Dahl, Harold Louis, (2)	*Chicago, Ill.*,	1 Law
Dahmen, Ernest Anton, (8)	*Ithaca*,	4 Civil Eng.
Daley, DeWitt Hayden, (8)	*Chatham*,	4 Civil Eng.
Daley, Francis Paul, (2)	*West New Brighton*,	1 Arts
Daley, Joseph, (2)	*Kingston*,	1 Arts
Damon, Frederick Henry, (4)	*Rochester*,	2 Mech. Eng.
Daniells, Morton Earl, (1)	*Perry*,	Sp. Agriculture
Danis, Benjamin George, (2)	*Dalton, Mass.*,	1 Civil Eng.

Dann, Alexander William, (6)	*Downsville*,	3 Civil Eng.
Dann, William James, (3)	*St. Louis, Mo.*,	2 Mech. Eng.
Darby, Clifford Torrey, (7)	*St. Louis, Mo.*,	4 Mech. Eng.
Darby, Robert Neil Gordon, (4)	*Fort Plain*,	2 Veterinary
Darling, Joshua Ferris, (6)	*Buffalo*,	3 Arts
Darling, Nelson Jarvie, (6)	*Schenectady*,	3 Mech. Eng.
Darlow, Alfred Miltenberger, (6)	*St. Louis, Mo.*,	4 Mech. Eng.
Darrow, Henry Dennison, Jr., (6)	*Kingston*,	3 Civil Eng.
Darrow, Warren Edwin, (6)	*Patchogue*,	3 Civil Eng.
Daudt, Ralph Bruere, (2)	*Toledo, O.*,	2 Arts
Daumont, Louis Burhaus, (2)	*Jersey City, N. J.*,	1 Mech. Eng.
Davey, Randall Vernon, (2)	*East Orange, N. J.*,	1 Arts
David, Lester Jesse, (6)	*Rochester*,	3 Arts
Davidson, Benjamin, (4)	*Brooklyn*,	2 Med. (N. Y. C.)
Davidson, James Edgar, (4)	*Hillburn*,	2 Arts
Davie, Leon Clifton, (4)	*Belmont*,	1 Veterinary
Davies, Edward Livingston, (7)	*New York City*,	2 Mech. Eng.
Davis, Alexander Maxwell, (3)	*Brooklyn*,	Jr. Law
Davis, Charles Roy, A.B., (4)	*Madison Ia.*,	2 Med. (N. Y. C.)
Davis, Cortland Woodbury, (6)	*Mexico*,	3 Mech. Eng.
Davis, Elbert Rice, (10)	*Rushford*,	4 Med. (N. Y. C.)
Davis, Ethel Louisa, (3)	*Buffalo*,	1 Arts
Davis, Henry Emerson, (5)	*Peabody, Mass.*,	1 Mech. Eng.
Davis, Henry Emerson, (2)	*Utica*,	1 Mech. Eng.
Davis, Ireland, (4)	*Washington, D. C.*,	1 Architecture
Davis, Joseph, (4)	*Le Raysville, Pa.*,	2 Agriculture
Davis, Max Warburton, (4)	*Torringford, Conn.*,	2 Mech. Eng.
Davis, Meyer, (4)	*New York City*,	2 Civil Eng.
Davis, Robert Menees, (6)	*Naalehu, H. T.*,	3 Civil Eng.
Davis, Roy Bingham, A.B., (4)	*Norwood*,	Sr. Law
Davis, Thomas George, (8)	*New York City*,	3 Med. (N. Y. C.)
Davis, Tracy Egbert, (5)	*Buffalo*,	3 Agriculture
Dawson, Charles Sumner, (2)	*Wenonah, N. J.*,	1 Mech. Eng.
Dawson, George Alexander, (2)	*Watertown*,	1 Arts
Dawson, Horace Lathrop, (6)	*Evanston, Ill.*,	3 Mech. Eng.
Day, George Edward, (2)	*Bayonne, N. J.*,	1 Mech. Eng.
Day, Henry Ralph, (2)	*Canandaigua*,	Sp. Agriculture
Day, Irvin Williams, (8)	*Utica*,	4 Mech. Eng.
Day, Ralph Burnett, (8)	*Vienna, Va.*,	4 Mech. Eng.
Day, Rodney Dean, B.A., (6)	*Catskill*,	4 Mech. Eng.
Dean, Clarence W, (2)	*Holland*,	1 Mech. Eng.
Dean, Elvira Dudley, (6)	*Ithaca*,	3 Arts

Dean, Jennie Archer, (4)	*Ithaca*,	2 Arts
Deane, Frank Putnam, (4)	*Fredonia*,	2 Civil Eng.
De Bard, Davis Meade, (4)	*McMinnville, Tenn.*,	2 Mech. Eng.
De Bell, Howard Sidney, (1)	*Ithaca*,	Sp. Agriculture
Decker, Asbury Clinton, (4)	*Prince Bay*,	2 Civil Eng.
Decker, Glennard Cecil, (2)	*Prince Bay*,	1 Mech. Eng.
Deeter, Edmund Mather, (2)	*Mechanicsburg, Pa.*,	1 Civil Eng.
Deffenbaugh, Homer Crow, (8)	*Mt. Pleasant, Pa.*,	4 Mech. Eng.
De Garmo, Robert Max, (4)	*Ithaca*,	1 Civil Eng.
Deitz, Karl Soden, (8)	*Gilbertsville*,	Sr. Law
De Laney, Wesley La Mont, (6)	*Sayre, Pa.*,	3 Mech. Eng.
Delaney, William H, M.D., (2)	*Quebec, Canada*,	Sp. Med. (N.Y.C.)
Delcasse, Georges, (5)	*Buenos Aires, Arg. Rep.*,	2 Agriculture
Demary, Jackson, (4)	*Charlestown, N. H.*,	Sp. Agr.
Dempsey, George Roger, (2)	*Millerton*,	1 Medicine
Denenholz, Aaron, M.D.,	*New York City*,	Sp. Med. (N. Y. C.)
Deniton, Anna Mae, (2)	*New York City*,	1 Arts
Deniton, George Edward, (2)	*New York City*,	Sp. Med. (N.Y.C.)
Dennett, Helen Mae, (8)	*Brooklyn*,	4 Arts
Dennett, William Alexander, (6)	*Kittery, Me.*,	3 Mech. Eng.
Dennis, Nina A, A.B., (8)	*Binghamton*,	4 Med. (N. Y. C.)
Denniston, Frank (2)	*New York City*,	1 Medicine
Denniston, Jesse Hempstead, (2)	*Cornwall*,	1 Civil Eng.
Denton, William, (4)	*Port Jervis*,	2 Medicine
Desbecker, Harold Clarence, (4)	*Buffalo*,	2 Mech. Eng.
Desbecker, John Warner, (8)	*Buffalo*,	4 Mech. Eng.
Deshon, John James, (6)	*Chenandega, Nicaragua, C. A.*,	1 Agri.
DeVed, Charles McClelion, (8)	*New Rochelle*,	4 Mech. Eng.
Dewar, Robert Critchlow, (2)	*East Orange, N. J.*,	1 Civil Eng.
Dewey, Thomas Augustus, B.S., (4)	*Goldsboro, N. C.*,	4 Mech. Eng.
DeWitt, Harry Alonzo, (2)	*Brooklyn*,	1 Mech. Eng.
De Wolf, Harold, (4)	*Bristol, R. I.*,	2 Med. (N. Y. C.)
Dexter, Bayard Putnam, (2)	*Orange, Mass.*,	1 Mech. Eng.
Diamant, Albert, (2)	*Westchester*,	1 Civil Eng.
Dibrell, Louis Nelson, (6)	*Danville, Va.*,	2 Mech. Eng.
Dickens, Wayland, (2)	*Alpine*,	1 Civil Eng.
Dickerman, John Alonzo, Jr., (4)	*Gardner, Mass.*,	4 Mech. Eng.
Dickson, Charles Chester Byron, (4)	*New Orleans, La.*,	2 Mech. Eng.
Dieckmann, Annetta Marie, (2)	*Buffalo*,	1 Arts
Diefendorf, Charles Wilson, (8)	*Troy*,	3 Civil Eng.
Diehl, Clifford Samuel, (6)	*Brooklyn*,	3 Mech. Eng.
Diment, Ellwood, (2)	*Oswego*,	1 Mech. Eng.
Dingens, Walter Joseph, (3)	*Buffalo*,	1 Civil Eng.

Dobson, George Gordon, (2)	*Passaic, N. J.*,	1 Mech. Eng.
Dodge, Roy Howard, (2)	*Dalton, Mass.*,	1 Civil Eng.
Dods, John Palliser, (2)	*Fredonia*,	1 Mech. Eng.
Dodson, Martha Ethel, B.E., (6)	*Berwick, Pa.*,	3 Arts
van der Does de Bye, Arnoud Jacob Joris, (2)	*The Hague, Holland*,	3 Mech. Eng.
Doetsch, William Jacob, (2)	*Gardenville*,	1 Law
Doig, John Robert, (4)	*Greenwich*,	2 Mech. Eng.
Donahue, William James Aloysius, A.B., (4)	*Newark, N. J.*,	1 Med. (N.Y.C.)
Donaldson, Alexander Grosvenor, (6)	*Detroit, Mich.*,	2 Arch.
Donaldson, Roderick Douglas, (4)	*New York City*,	2 Mech. Eng.
Donnan, Pearl, (6)	*Cygnet, O.*,	3 Arts
Donnellan, Mary Veronica, (5)	*Binghamton*,	3 Arts
Donnelly, Catherine Jessica, (4)	*Philadelphia, Pa.*,	1 Arts
Donoghue, James Patrick Kiernan, (2)	*Rochester*,	1 Medicine
Donovan, John Henry, (2)	*Joliet, Ill.*,	1 Civil Eng.
Dooley, John James, (2)	*Penn Yan*,	1 Veterinary
Doolittle, Harold Lukens, (6)	*Pasadena, Calif.*,	4 Mech. Eng.
D'Oronzio, Joseph Bonora, (4)	*New York City*,	2 Med. (N.Y.C.)
Douglas, James Robinson, (2)	*Westfield*,	1 Law
Douglas, Percy Gordon, (8)	*New York City*,	4 Civil Eng.
Douglass, Herbert McNair, (6)	*Clyde*,	2 Mech. Eng.
Doux, Jules Goodwin, (2)	*Utica*,	1 Arts
Dowdle, Edward, (2)	*Oswego*,	1 Medicine
Downes, Henry Hackett, (4)	*Denton, Md.*,	2 Mech. Eng.
Downs, Charles Lefever, (7)	*Williamsport, Md.*,	4 Arts
Downs, Leon Hamilton, (2)	*Monticello*,	1 Mech. Eng.
Dragoshinoff, Dragoshin George, A.B., (4)	*Hirevo, Sevlievo, Bulgaria*,	2 Agriculture
Drake, Archibald Edward, (6)	*Buffalo*,	2 Civil Eng.
Drake, Ralph Edmund, (1)	*Camillus*,	1 Civil Eng.
Drake, William Allen, B.S., (6)	*Portland, Ind.*,	4 Mech. Eng.
Drennen, Everett, (4)	*Martins Ferry, O.*,	3 Civil Eng.
Drew, John Bragg, (6)	*Ithaca*,	2 Veterinary
Droge, Anton William, (2)	*Brooklyn*,	1 Med. (N.Y.C.)
Droge, Harry William, (4)	*Brooklyn*,	Jr. Law
Drolshagen, Frank Fredinand, (2)	*Milwaukee, Wis.*,	Sp. Arch.
Drury, Alexander Getchell, (6)	*Cincinnati, O.*,	3 Mech. Eng.
Dryfuss, Barney Joachim, B.S., M.D., (2)	*New York City*,	4 Med. (N.Y.C.)
Dubar, Violet Agnes, (8)	*Titusville, Pa.*,	4 Arts

Du Bois, Arthur Wood, (5)	*Hallstead, Pa.*,	2 Arts
Du Bois, Henry Pastor, (8)	*Hallstead, Pa.*,	3 Mech. Eng.
Du Bois, Leo Charles, (4)	*Newburgh*,	2 Med. (N.Y.C.)
Du Bois, Phebe Lott, (4)	*Holmdel, N. J.*,	2 Medicine
Du Brenil, Alice Blanche, (6)	*Normandy Heights, Md.*,	4 Arts
Dubuis, John, B.A., (2)	*Clinton, S. C.*,	1 Civil Eng.
Duffy, Charles Lester, (4)	*New York City*,	2 Arts
Dugan, William John, (6)	*Pueblo, Colo.*,	3 Arts
Dukarevitz, Louis, (6)	*Brooklyn*,	3 Med. (N. Y. C.)
Dulaney, Stanley Joe, (4)	*Paris, Texas*,	2 Mech. Eng.
Dunbar, Jessie Ellen, (8)	*Ithaca*,	4 Arts
Dunn, Thomas Lyteland, (7)	*Petersburg, Va.*,	4 Mech. Eng.
Dunn, William Scribner, (1)	*Middleburgh*,	Sp. Agriculture
Dunning, Polly Hicks, (4)	*Webster*,	2 Arts
Durand, Albert Cyrus, (4)	*Oberlin, O.*,	4 Arts
Durk, Francis Lammerts, (4)	*Niagara Falls*,	Jr. Law
Durkan, Thomas Glenn, (4)	*Watertown*,	2 Arts
Durkan, William James, (8)	*Watertown*,	4 Civil Eng.
Durward, Alexander Adams David, (6)	*Claremont, N. H.*,	2 Agri.
Duryea, Howard, (6)	*Craigsville*,	3 Mech. Eng.
Duschak, Ernest Adolph, (8)	*Buffalo*,	4 Civil Eng.
Dutcher, Irene Whitney, (1)	*Nyack*,	1 Arts
Dwight, Francis Bartow, (2)	*Lake Forest, Ill.*,	1 Mech. Eng.
Dwyer, Helen Frances, (2)	*Hartford, Conn.*,	1 Arts
Dyer, Walter Cheney, (6)	*Chicago, Ill.*,	1 Mech. Eng.
Eagan, George Arthur, (8)	*Washington, D.C.*,	4 Mech. Eng.
Earle, Edwin, Jr., (4)	*Detroit, Mich.*,	2 Agriculture
Earle, Harold Asbury, (7)	*Brooklyn*,	3 Arts
Earle, Theodore, (4)	*Elizabeth, N. J.*,	2 Mech. Eng.
Eastman, D K, (4)	*Woodsville, N. H.*,	2 Veterinary
Eaton, Charles Otis, (1)	*Saratoga*,	1 Veterinary
Eaton, Fred Clair, (2)	*Scranton, Pa.*,	1 Mech. Eng.
Ebberts, Andrew Howard, (2)	*Pittsburg, Pa.*,	1 Mech. Eng.
Ebeling, Frederic Oliver, (2)	*Evanston, Ill.*,	1 Mech. Eng.
Eberhardt, Henry Ezra, (4)	*Newark, N. J.*,	2 Mech. Eng.
Eckel, Edward Jacob, (6)	*Syracuse*,	3 Med. (N.Y.C.)
Eckert, Samuel Baltz, (4)	*Devon, Pa.*,	2 Mech. Eng.
Edge, Alfred Joshua, (10)	*Darlington, Md.*,	4 Civil Eng.
Edlund, Roscoe Claudius, (2)	*Brooklyn*,	1 Arts
Edmonds, Alfred Benjamin, (2)	*Glen Cove*,	1 Veterinary
Edwards, Elmer, (4)	*Forest Home*,	1 Civil Eng.
Eells, Dan Parmelee, (4)	*Cleveland, O.*,	2 Arts

Efinger, Philip Charles, (3)	*Lancaster, Pa.*,	1 Civil Eng.
Egbert, James Byron, (6)	*Rosebank*,	3 Civil Eng.
Eggleston, Cary, (6)	*New York City*,	3 Med. (N.Y.C.)
Eggleston, William Seymour, (6)	*Ithaca*,	3 Veterinary
Ehrlich, Simon David, (6)	*New York City*,	3 Med. (N.Y.C.)
Eichel, Henry, (6)	*New York City*,	3 Med. (N.Y.C.)
Eisenberg, David, (6)	*Long Island City*,	2 Med. (N.Y.C.)
Eitel, Edmund Henry, (6)	*Indianapolis, Ind.*,	3 Mech. Eng.
Eldredge, Elmer Ellsworth, (2)	*Sharon Springs*,	Sp. Agriculture
Eldredge, Ralph Waldo, (5)	*Sharon Springs*,	3 Arts
Eliasberg, Bernard, (8)	*Brooklyn*,	4 Med. (N. Y. C.)
Ellenbogen, Sidney Arthur, (4)	*Paterson, N. J.*,	2 Mech. Eng.
Ellsworth, Goodwin Davis, Jr., (4)	*Washington, D. C.*,	1 Civil Eng.
Elwood, Frank Edwin, (8)	*Scranton, Pa.*,	4 Civil Eng.
Elwood, James Lawrence, (7)	*Rochester*,	2 Mech. Eng.
Elwood, Lewis Jasper, (4)	*Starkville*,	Sp. Agriculture
Elwood, Walter, (4)	*Amsterdam*,	1 Arts
Embury, David Augustus, (4)	*Morrisville*,	1 Arts
Emerson, Earl Arthur, (2)	*Cincinnati, O.*,	1 Mech. Eng.
Emerson, Filip Law, (8)	*Detroit, Mich.*,	4 Mech. Eng.
Emery, Eugene McCarthy, (2)	*Williamsport, Pa.*,	1 Arts
Engel, Arthur William, (2)	*Lyons*,	1 Civil Eng.
Engel, Gustave Philip, (2)	*New York City*,	1 Mech. Eng.
Engle, Clarence Frederick, (4)	*Montclair, N. J.*,	2 Mech. Eng.
Engel, Irving Harold, (8)	*New York City*,	4 Med. (N. Y. C.)
Engel, Joseph, (6)	*Newport, R. I.*,	3 Med. (N. Y. C.)
English, Clarence Arthur, (2)	*Evanston, Ill.*,	1 Architecture
English, George William, (3)	*New York City*,	1 Mech. Eng.
Eno, Charles Rudd, (4)	*Pine Plains*,	2 Veterinary
Entwisle, Edward Fussell, (8)	*Johnstown, Pa.*,	2 Mech. Eng.
Erway, Ellen Grace, (2)	*Trumansburg*,	1 Arts
Erwin, James Arad, (2)	*Chicago, Ill.*,	4 Mech. Eng.
Esmond, Nathan, (4)	*Valley Falls*,	2 Mech. Eng.
Essex, Harry, (6)	*Buffalo*,	3 Arts
Estill, George Castleman, A.B., (6)	*Lexington, Ky.*,	3 Mech. Eng.
Eustis, Truman William, Jr., (2)	*Hinsdale, Ill.*,	1 Mech. Eng.
Evans, Alice Catherine, (2)	*Le Raysville, Pa.*,	Sp. Agriculture
Evans, Edward Anthony, (8)	*Pittsburg, Pa.*,	4 Civil Eng.
Evans, Gordon Maynard, B.S., (4)	*New York City*,	4 Mech. Eng.
Evans, Louis Humphreys, (4)	*Granville*,	1 Civil Eng.
Evans, Leigh Rodenbough, (3)	*Easton, Pa.*,	3 Mech. Eng.
Evans, Morgan William, (8)	*Le Raysville, Pa.*,	4 Agriculture

Evans, Walter Griffith, (2)	*Rome*,	1 Arts
Evans, Walter Hubert, (4)	*Salt Lake City, Utah*,	4 Mech. Eng.
Fabbri, Remo, Ph.G., (2)	*New York City*,	Sp. Med. (N. Y. C.)
Fagundes, Adalberto Almada, (6)	*Sao Paulo, Brazil*,	3 Veterinary
Fagundes, Lupercio, (7)	*Sao Paulo, Brazil*,	3 Agriculture
Fagundes, Waldomiro, (7)	*Sao Paulo, Brazil*,	4 Agriculture
Faile, Edward Hall, (7)	*St. Paul, Minn.*,	4 Mech. Eng.
Failing, Brayton Earl, (6)	*Sherburne*,	3 Med. (N. Y. C.)
Failor, Newton Cowan, (8)	*New York City*,	4 Mech. Eng.
Fairbanks, Frank Latta, (1)	*Ithaca*,	1 Mech. Eng.
Fairlamb, Gertrude May, M.E., (4)	*Media, Pa.*,	1 Arts
Farkas, Morris, (4)	*New York City*,	2 Med. (N. Y. C.)
Farnell, Frederic James, (4)	*New York City*,	2 Med. (N.Y.C.)
Farr, Newton Camp, (2)	*Chicago, Ill.*,	1 Civil Eng.
Farrior, James William, B.E., (4)	*Kenansville, N. C.*,	3 Mech. Eng.
Fassett, Truman Edmund, (2)	*Elmira*,	1 Arts
Faucher, Cyril Adolphus, (2)	*Rochester*,	1 Civil Eng.
Faustman, William Frederick, (2)	*Auburn*,	3 Civil Eng.
Fawell, Joseph Edward, (1) 36	*Pittsburg, Pa.*,	1 Mech. Eng.
Fay, Edward Miller, (2)	*Malone*,	1 Mech. Eng.
Fay, Lawrence Bradshaw, (8)	*Washington, D. C.*,	4 Civil Eng.
Feder, Marcy, (2)	*Hoboken, N J.*,	1 Arts
Feely, James Kerwin, (6)	*Rochester*,	Sr. Law
Fehr, Louis White, (6)	*Rochester*,	3 Arts
Feinberg, Abraham Wilfred, (6)	*Lake Placid*,	Sr. Law
Feldman, George Joseph, (4)	*Buffalo*,	2 Arts
Feldman, Isidor, (8)	*New York City*,	4 Med. (N. Y. C.)
Feldstein, Bernard, (2)	*New York City*,	1 Med. (N. Y. C.)
Felknor, James Minnis, A.B., (2)	*Morristown, Tenn.*,	1 Civil Eng.
Fellman, Morris, (2)	*New York City*,	1 Civil Eng.
Fendrich, William, Jr., B.S., (4)	*New York City*,	4 Mech. Eng.
Fenger, Frederick Abildgaard, (7)	*Winnetka, Ill.*,	3 Mech. Eng.
Fennelly, Joseph Francis, (2)	*Brooklyn*,	1 Mech. Eng.
Fenno, George Francis, B.S., (4)	*New York City*,	4 Mech. Eng.
Ferguson, Henry Hall, (2)	*Cedar Rapids, Ia.*,	1 Mech. Eng.
Ferguson, John Alfred, (6)	*New York City*,	3 Mech. Eng.
Ferguson, Llewellyn Ray, (4)	*Buffalo*,	2 Arts
Fernow, Bernard Edward, Jr., A.B., (3)	*Ithaca*,	4 Mech. Eng.
Fernow, Fritz, (2)	*Ithaca*,	1 Arts
Ferris, Ralph, (6)	*Ithaca*,	3 Civil Eng.
Field, Allen Safford, (3)	*Watertown*,	1 Arts

Fielding, William Edgar, (2)	*So. Orange, N. J.*,	1 Civil Eng.
Figles, Harold Edward, (4)	*Ithaca*,	2 Mech. Eng.
Filkins, Barent Latham, (6)	*Buffalo*,	2 Mech. Eng.
Finch, Burtis J, (6)	*Conklin*,	3 Civil Eng.
Findley, Roger Sherman, (2)	*Pittsburg, Pa.*,	1 Mech. Eng.
Finkelstein, Max Jacob, (4)	*Elmira*,	Jr. Law
Fish, J Arthur, (2)	*Ithaca*,	1 Mech. Eng.
Fisher, Clarence Frazier, (2)	*Davenport*,	1 Civil Eng.
Fisher, George Farnsworth, (2)	*Chicago, Ill.*,	1 Civil Eng.
Fisher, James Powell, (7)	*Pittsburg, Pa.*,	4 Mech. Eng.
Fisher, Mary Jones, A.B., (4)	*Denton, Md.*,	4 Arts
Fisk, Marion Walter, (7)	*Portland, Ore.*,	3 Mech. Eng.
Fitch, Francis Ellery, Jr., (4)	*Elmira*,	2 Mech. Eng.
Fitzgerald, John Morris, (2)	*Fillmore*,	1 Civil Eng.
Fitzhugh, Hugh, (8)	*Washington, D. C.*,	2 Mech. Eng.
Fitzpatrick, Marion Aurelia, (6)	*Albany*,	3 Arts
Flagg, Paluel Joseph, (2)	*Yonkers*,	1 Med. (N. Y. C.)
Fleming, Burton Percival, B.S.,(4)	*Logan, Utah*,	4 Mech. Eng.
Flickinger, Walter Eugene, (4)	*Erie, Pa.*,	2 Mech. Eng.
Flinn, Rufus Hill, (2)	*Camden, N. J.*,	1 Mech. Eng.
Flint, Stanley Howard, (4)	*Wilkinsburg, Pa.*,	2 Civil Eng.
Flood, Henry, Jr., (2)	*Elmira*,	1 Mech. Eng.
Flynn, Edward James, (3)	*Johnstown*,	2 Arts
Foard, Arthur Virdin, (8)	*Baltimore, Md.*,	4 Civil Eng.
Focke, George Cleveland, (4)	*Galveston, Texas*,	2 Agriculture
Fogarty, Anna Winifred, (4)	*Watervliet*,	1 Arts
Folger, Paul, (8)	*Geneva*,	4 Arts
Folger, Roy Cooke, (2)	*Cape Vincent*,	1 Mech. Eng.
Folz, William Henry, (1)	*Tuckahoe*,	Sp. Agriculture
Foody, James Thomas, (6)	*Fultonville*,	Sr. Law
Foote, Edward Thaddeus, (8)	*Ithaca*,	4 Mech. Eng.
Foote, Allen Asa, (2)	*Trumansburg*,	1 Civil Eng.
Forbes, Forrest Le Bert, (1)	*Worcester, Mass.*,	1 Law
Forbes, William Henry, (7)	*Philadelphia, Pa.*,	4 Mech. Eng.
Ford, Edward Hyndman, (6)	*Marshwood, Pa.*,	2 Mech. Eng.
Ford, Everett Leander, (6)	*Brooklyn*,	3 Mech. Eng.
Ford, Robert Graham, (6)	*Bellewood, Pa.*,	3 Civil Eng.
Forgy, John Edmonds, (8)	*Dayton, O.*,	4 Mech. Eng.
Forrest, Gertrude Edith, (2)	*Great Neck*,	1 Medicine
Foster, Dwight Eliot, (6)	*South Orange, N. J.*,	Sr. Law
Foster, Frank Grove, (2)	*New Britain, Conn.*,	1 Civil Eng.
Foster, Franklin Luther, (6)	*Ithaca*,	3 Veterinary

Foster, Harry Purrington, (4)	*Dalton, Mass.*,	2 Mech. Eng.
Foster, Marcus Luculus, Jr., (3)	*Gadsden, Ala.*,	Sp. Mech. Eng.
Foster, Orrington Cyrenius, (4)	*Chicago, Ill.*,	4 Mech. Eng.
Foster, William Silliman, (2)	*Water Mill*,	1 Arts
Fowler, Fred DuMont, (6)	*Ithaca*,	3 Mech. Eng.
Fowler, Ray Forman, (2)	*Rochester*,	1 Law
Fowler, Royale Hamilton, (6)	*Brooklyn*,	3 Med. (N. Y. C.)
Fowler, William Dillon, (4)	*Salt Lake City, Utah*,	2 Mech. Eng.
Fowler, William Franklin, (2)	*Lynbrook*,	1 Law
Fox, Frank William, (4)	*Bayonne, N. J.*,	2 Med. (N. Y. C.)
Fox, George Leonard, (4)	*Bridgeport, Conn.*,	2 Civil Eng.
Fox, Harry Davenport, (4)	*Penn Yan*,	2 Mech. Eng.
Fox, Robert Lee, (2)	*Batavia*,	1 Civil Eng.
Fox, Seth William, Jr., (6)	*Brooklyn*,	3 Mech. Eng.
Frank, Jerome Adrian, (1)	*New York City*,	1 Arts
Frank, Leo Max, (8)	*Brooklyn*,	4 Mech. Eng.
Frank, Morris, (2)	*Elizabeth, N. J.*,	1 Med. (N.Y.C.)
Frankenheimer, Harold S, (2)	*New York City*,	1 Arts
Franklin, Albert Vergil, (4)	*Ithaca*,	2 Arts
Fraser, Homer E, M.D., (1)	*Brooklyn*,	Sp. Med. (N.Y.C.)
Fraser, Nora Blanding, A.B., (2)	*Staunton, Va.*,	3 Arts
Fraser, William Pollok, (2)	*New Glasgow, N. S., Canada*,	4 Arts
Frazee, Youle Townsend, (6)	*Montclair, N. J.*,	3 Mech. Eng.
Frear, Henry North, (3)	*Buffalo*,	2 Arts
Fredericks, John Eden, (2)	*Houston, Texas*,	1 Mech. Eng.
Frederickson, Agustus M, (4)	*Cornwall-on-Hudson*,	Jr. Law
Free, Edward Elway, (3)	*Du Bois, Pa.*,	4 Arts
Freeman, Henry Brewster, (2)	*Chicago, Ill.*,	1 Mech. Eng.
Freer, Arthur Thomas, (4)	*Gilbertsville*,	Jr. Law
French, Charles Martin, (2)	*Housatonic, Mass.*,	1 Mech. Eng.
French, Laurence Elwell, (1)	*Buffalo*,	3 Mech. Eng.
French, Vida Rachel, (2)	*Buffalo*,	3 Agriculture
Freudenheim, Elias, (2)	*Elmira*,	1 Arts
Frey, Harry Charles, A.B.,(4)	*Olean*,	Sr. Law
Freyre, Leopoldo Estanislao, A.B., (2)	*Habana, Cuba*,	1 Civil Eng.
Fried, Jake, (6)	*Vicksburg, Miss.*,	3 Mech. Eng.
Friedman, Edward Louis, (8)	*New York City*,	4 Med. (N. Y. C.)
Friedrich, John Emil, (6)	*Mount Vernon*,	2 Mech. Eng.
Friend, Robert Elias, (4)	*Milwaukee, Wis.*,	2 Mech. Eng.
Fringer, Samuel Hall Tagart, (7)	*Taneytown, Md.*,	2 Mech. Eng.
Frink, Walter E, (4)	*DeRuyter*,	2 Veterinary
Frisbie, Grandison Norton, (3)	*Middleburgh*,	1 Law

Fritz, Emanuel, (2)	*Baltimore, Md.*,	2 Mech. Eng.
Frizzell, Rex Russell, (4)	*Great Falls, Mont.*,	2 Arts
Frosch, Albert Ernest, (2)	*Pittsburg, Pa.*,	1 Civil Eng.
Frost, Arthur Lawrence, (2)	*Muskegon, Mich.*,	1 Mech. Eng.
Frost, Harry Barber, B.S., (4)	*Providence, R. I.*,	3 Mech. Eng.
Frost, Howard Brett, (4)	*Dairyland*,	2 Agriculture
Frost, James Nathan, (4)	*Buffalo*,	2 Veterinary
Fryer, Harry Lee, B.S., (2)	*Carlton, Ore.*,	3 Mech. Eng.
Fuchs, Herman Gustav Alfred, (2)	*Brooklyn*,	1 Arts
Fujioka, Keisuke, (2)	*Tokyo, Japan*,	1 Mech. Eng.
Fukami, Kushichi, (2)	*Fukuoka, Japan*,	1 Architecture
Fuller, Lucius B, (4)	*Telluride, Colo.*,	3 Mech. Eng.
Fulton, Creed Walsh, (2)	*Washington, D. C.*,	1 Mech. Eng.
Fung, Hing Kwai, (4)	*Canton, China*,	2 Agriculture
Furman, Fred John, (8)	*Rutland, Pa.*,	4 Arts
Gable, Lowell Boyer, (4)	*Altoona, Pa.*,	Sp. Agriculture
Gable, Ward Llewellyn, (2)	*Pittsburg, Pa.*,	1 Mech. Eng.
Gaby, Robert Edward, B.A., (4)	*Toronto, Canada*,	3 Med. (N. Y. C.)
Gache, Cæsar Thomas, (1)	*Buenos Aires, Agr. Rep.*,	1 Mech. Eng.
Gaensslen, Carl August, (8)	*Chicago, Ill.*,	4 Mech. Eng.
Gage, Victor Raymond, (8)	*Wilmette, Ill.*,	4 Mech. Eng.
Galadjikian, Alexander Sarkis, A.B., (4)	*Constantinople, Turkey*,	2 Mech. Eng.
Gallagher, Francis Edward, (7)	*Salamanca*,	4 Arts
Gallagher, Francis Leo, (6)	*Ithaca*,	3 Veterinary
Gallagher, John Sill, (4)	*Saginaw, Mich.*,	2 Arts
Gallagher, Joseph, (6)	*Myers*,	3 Civil Eng.
Gallagher, William Henry, Jr., (9)	*Saginaw, Mich.*,	4 Mech. Eng.
Gallagher, William Michael, (4)	*Cleveland*,	Jr. Law
Galland, Benjamin Strauss, (2)	*Wilkes-Barre, Pa.*,	1 Arts
Galland, Julius George, (4)	*Wilkes-Barre, Pa.*,	2 Arts
Gallego, Alejandro, (2)	*New York City*,	1 Mech. Eng.
Gallup, John Hiram, (2)	*Denver, Colo.*,	1 Mech. Eng.
Garabrant, Joseph Edwin, (8)	*Bloomfield, N. J.*,	4 Mech. Eng.
Garabrant, Willard Waldron, (2)	*Ralston, N. J.*,	1 Mech. Eng.
Garbat, Abraham Leon, (8)	*New York City*,	4 Med. (N. Y. C.)
Gardner, Fred Eugene, (2)	*Rochelle, Ill.*,	1 Arts
Gardner, Robert Eli, (5)	*Gulfport Miss.*,	2 Arts
Garretson, Paul Oliver, (4)	*Buffalo*,	2 Arts
Garrigan, Louis George, (4)	*Newark, N. J.*,	2 Mech. Eng.
Garrow, Theodore Alexander, B.S., (2)	*Corvallis, Ore.*,	3 Mech. Eng.
Gaskill, Selora Alice, (8)	*Wilson*,	4 Arts

Gaston, Edwards Pablo, A.B., (4)	*Habana, Cnba,*	3 Mech. Eng.
Gaston y Herrera, Luis, (5)	*Habana, Cuba,*	1 Civil Eng.
Gates, Grandon Dumars, (2)	*Ithaca,*	1 Mech. Eng.
Gates, Lewis Harold, (4)	*St. Paul, Minn.,*	2 Mech. Eng.
Gavett, Leonard Whitney, (4)	*Plainfield, N. J.,*	2 Mech. Eng.
Gehr, Ray Stewart, Ph.B., (6)	*Washington, D. C.,*	4 Mech. Eng.
Gehring, Victor Marshall, (6)	*Portland, Me.,*	4 Arts
Geis, Richard Authony, (2)	*New York City,*	1 Law
Gelien, Johanna, (4)	*Ithaca,*	2 Medicine
Gelineau, Victor, (2)	*Lowell, Mass.,*	1 Civil Eng.
Gelser, George Merrill, A.B., (4)	*Beaver Falls,*	3 Med. (N. Y. C.)
Genung, Anna Belle, (2)	*Ithaca,*	1 Arts
George, Emma Louise, Ped.B., (8)	*Flushing,*	4 Arts
Gerhardt, Reginald Bernard, (2)	*Lebanon, Pa.,*	2 Mech. Eng.
Germond, Russell Clarke, (2)	*New Britain, Conn.,*	1 Mech. Eng.
Gersoui, Louis Jacob, (6)	*Brooklyn,*	3 Mech. Eng.
Gibb, Walton, (2)	*Philadelphia, Pa.,*	1 Civil Eng.
Gibbs, Roswell Clifton, (6)	*Ithaca,*	4 Arts
Gibson, Edwin Fred, (2)	*Norwich,*	1 Arts
Gibson, Edwin Thomas, (4)	*Brooklyn,*	Jr. Law
Giele, Walter Scott, (6)	*Meadville, Pa.,*	4 Mech. Eng.
Giesecke, Fred Otto Leopold, (7)	*Buffalo,*	4 Mech. Eng.
Gifford, Orrin Philip, Jr., (2)	*Buffalo,*	1 Mech. Eng.
Gilbert, Allan H, (2)	*Rushford,*	1 Arts
Gilbert, Franklin Hamilton, (2)	*Plymouth, Mass.,*	1 Arts
Gilbert, Grace Russell, (6)	*Brooklyn,*	3 Arts
Gilbert, Huntley Harris, (6)	*Chicago, Ill.,*	3 Mech. Eng.
Gilbert, Walter Levi, (6)	*Durham,*	2 Veterinary
Gilchrist, Jessie Lewis, M.P., (8)	*Hazleton, Pa.,*	4 Arts
Gilchrist, Thomas Byron, (6)	*Glens Falls,*	Sr. Law
Gilcreast, Webster Farnham, (6)	*Hazleton, Pa.,*	3 Mech. Eng.
Gildner, Harry Holmes, (6)	*Newport News, Va.,*	3 Mech. Eng.
Gildner, Laura May, (6)	*Newport News, Va.,*	4 Arts
Giles, Irvin Kline, (5)	*Reading, Pa.,*	4 Arts
Giles, Isabel, (2)	*New York City,*	1 Law
Gilkey, Royal, (4)	*Watertown, Mass.,*	2 Agriculture
Gill, Harry Percival, (2)	*New York City,*	1 Veterinary
Gilleland, Pierre Hall, (3)	*Evanston, Ill.,*	1 Mech. Eng.
Gillespie, James Edward, (2)	*Ausable Forks,*	1 Arts
Gillet, Langdon, (2)	*New York City,*	1 Mech. Eng.
Gillett, Horace Wadsworth, (7)	*Penn Yan,*	4 Arts
Gillette, Arthur Taylor, (4)	*Cuba,*	2 Medicine

Gillette, Harold, (2)	*Syracuse*,	1 Civil Eng.
Gillette, William DeWitt, (6)	*Mt. Vernon*,	3 Mech. Eng.
Gillis, Hugh Lester, (7)	*Macedon*,	4 Arts
Gilman, Andrew Logan, (2)	*Groveland Sta.*,	1 Arts
Gilmore, Alvin Leroy, (4)	*Ithaca*,	2 Civil Eng.
Gilmore, Charles Thomas, (2)	*Jersey City, N. J.*,	1 Mech. Eng.
Giltner, Leigh, (6)	*Ithaca*,	3 Veterinary
Giltner, Ward, (6)	*Ithaca*,	3 Veterinary
Gilyard, Arthur Thomas, (4)	*Seymour, Conn.*,	2 Veterinary
Ginorio, Francisco Ricardo, A.B., (6)	*Arecibo, Porto Rico*,	3 Mech. Eng.
Ginsburg, Benjamin, (4)	*New York City*,	2 Med. (N.Y.C.)
Gleason, George Scott, (2)	*Glens Falls*,	1 Arts
Gleason, John Lawrence, (6)	*Union Springs*,	Sr. Law
Glennie, Robert Douglas, (4)	*Sanborn*,	2 Mech. Eng.
Gliss, Charles Edwin Clark, (1)	*Warsaw*,	1 Veterinary
Glugoski, Arthur, (3)	*New York City*,	2 Mech. Eng.
Godfrey, William Truitt, (6)	*City Island*,	3 Med. (N. Y. C.)
Godoy, Raul, (2)	*Buenos Aires, Arg. Rep.*,	1 Civil Eng.
Goepel, Frederick Narcis, (6)	*New York City*,	3 Civil Eng.
Goetter, Edward Baldwin, (8)	*New York City*,	2 Architecture
Goetz, Werner William, (2)	*Milwaukee, Wis.*,	1 Arts
Goldberg, Albert Samuel, (4)	*Brooklyn*,	Jr. Law
Goldblatt, Louis Leo, (4)	*New York City*,	1 Med. (N.Y.C.)
Goldhaar, John, (2)	*New York City*,	3 Agriculture
Golding, Harry Newport, (8)	*Paterson, N. J.*,	4 Med. (N. Y. C.)
Goldsmith, Walter Mayer, (2)	*New York City*,	1 Arts
Goldsmith, William Mosler, (2)	*Cincinnati, O.*,	1 Mech. Eng.
Goldstein, Isaac Montifor, (6)	*Milford, Ill.*,	3 Mech. Eng.
Goldstein, William, (2)	*Brooklyn*,	1 Med. (N. Y. C.)
Gomez, José Antonio, Ph.B., (2)	*Guayaquil, Ecuador, S. A.*,	1 C. E.
Gooch, Verson Woodman, B.S., (1)	*Alfred, Me.*,	1 Veterinary
Goodall, Edwin Baker, M.D., (2)	*Ossining*,	Sp. Med. (N.Y.C.)
Goodfried, Joseph, (4)	*New York City*,	1 Med. (N.Y.C.)
Goodier, Chester Jennings, (6)	*Utica*,	2 Mech. Eng.
Goodman, Arthur, (2)	*New York City*,	1 Med. (N.Y.C.)
Goodman, Timothy Seymour, (3)	*Hamilton, O.*,	1 Mech. Eng.
Goodrich, Clarence Llewellyn, (2)	*Owego*,	1 Civil Eng.
Goodrich, John Fish, (2)	*Keokuk, Ia.*,	1 Agriculture
Goodrich, Leroy Rosengren, (4)	*Buffalo*,	2 Arts
Goodspeed, Charles Barnett, (4)	*Columbus, O.*,	2 Mech. Eng.
Goodwillie, David Herrick, (4)	*Oak Park, Ill.*,	2 Mech. Eng.

Goodwin, Frank Perry, (8)	*Jamestown*,	4 Med. (N.Y.C.)
Goodwin, Melvin Biggs, (4)	*Ithaca*,	2 Arts
Goodwin, Philip James, (4)	*Kingston, Pa.*,	2 Mech. Eng.
Gootenberg, David, (4)	*New York City*,	2 Med. (N.Y.C.)
Gordon, Moses Burnes, (6)	*New York City*,	2 Med. (N.Y.C.)
Gordon, Thomas Croxton, B.S., (4)	*Richmond, Va.*,	4 Mech. Eng.
Gottesman, Sidney Maxim, (2)	*Brooklyn*,	1 Law
Gottschalk, Lionel John, (2)	*New Orleans, Ia.*,	2 Mech. Eng.
Gouinlock, Agnes Gilchrist, (4)	*Warsaw*,	2 Arts
Gouinlock, Jane, (4)	*Warsaw*,	2 Arts
Gould, Carl Alvord, (6)	*Battle Creek, Mich.*,	1 Civil Eng.
Gould, Clarence Allen, (6)	*Seneca Falls*,	2 Mech. Eng.
Gould, John Howard, (6)	*St. Marys, Ill.*,	4 Mech. Eng.
Gould, Lewis Arthur, (4)	*Interlaken*,	2 Medicine
Gowans, Ethel Bell, (2)	*Angola*,	Sp. Agriculture
Gracy, Leonard Rider, (4)	*Jamaica*,	1 Agriculture
Graham, John Cooper, (2)	*Brookton*,	1 Medicine
Graham, John Hersey, (6)	*Woodruff, Pa.*,	2 Architecture
Graham, Samuel Junkins, (1)	*Greenwich, Conn.*,	1 Arts
Grant, Floyd Marshall, (4)	*Brasher Falls*,	Jr. Law
Grant, James Denison, (2)	*Eaton, Colo.*,	1 Mech. Eng.
Graves, Gaylord Willis, A.B., (4)	*Ithaca*,	2 Medicine
Graves, Ralph Ireson, (4)	*Amesbury, Mass.*,	2 Mech. Eng.
Gray, Edwin Johnston, (2)	*Highland Park, Ill.*,	1 Civil Eng.
Green, Henry Edward, (8)	*Hoosac*,	4 Civil Eng.
Green, J Birchard, (2)	*Chicago, Ill.*,	1 Arts
Greenberg, Henry, (7)	*Brooklyn*,	4 Arts
Greenberg, Max, A.B., (2)	*New York City*,	4 Mech. Eng.
Greene, Albert Dygert, (2)	*Fort Plain*,	1 Medicine
Greene, Antoinette, (8)	*Forest Home*,	4 Arts
Greene, Mabelle Chamberlain, (2)	*Morris*,	1 Arts
Greenman, Charles Dwight, (4)	*Norwich, Conn.*,	1 Agriculture
Greer, Edward Russell, (2)	*Minneapolis, Minn.*,	2 Mech. Eng.
Gregg, Robert, B.S. in M.E., (2)	*Atlanta, Ga.*,	4 Mech. Eng.
Gregory, Maxwell Delos, (2)	*Unadilla*,	1 Mech. Eng.
Gregson, Edward Jesse, B.A., (6)	*Newcastle, N. S. W., Aust.*,	4 M. E.
Greig, Julie Troward, (3)	*Eldred*,	Sp. Arts
Gresham, Frank Spencer, (8)	*Galveston, Tex.*,	2 Civil Eng.
Gridley, Sidney Dias, (4)	*Elmira*,	2 Mech. Eng.
Gridley, William Grandison, (2)	*Elmira*,	1 Civil Eng.
Griffin, Bertha, (2)	*Philadelphia, Pa.*,	1 Arts
Griffin, Bessie May, (6)	*Binghamton*,	3 Arts

Griffin, Charles Alfred, Jr., (2)	*Utica*,	1 Arts
Grimley, John Goodwin Joseph, (6)	*New York City*,	2 Med. (N.Y.C.)
Griswold, Edna Dorothy, (2)	*Mayville*,	1 Arts
Griswold, Horace, (5)	*Binghamton*,	2 Civil Eng.
Grossman, Jacob, (2)	*New York City*,	1 Med. (N. Y. C.)
Grossman, Morris, (2)	*New York City*,	1 Med. (N. Y. C.)
Grove, Elmer Emanuel, A.B., A.M., (1)	*Luray, Va.*,	1 Mech. Eng.
Grubb, Howard Burliugham, (4)	*South Croydon, England*,	2 Agr.
Grubb, Norman Henry, (4)	*South Croydon, England*,	2 Agr.
Gruner, Clarence Elbert, (4)	*Brooklyn*,	2 Civil Eng.
Gruner, William Philip, (6)	*St. Louis, Mo.*,	3 Mech. Eng.
Guenther, Victor John, (6)	*Buffalo*,	3 Mech. Eng.
Gullion, Omar Ray, A.B., A.M., (1)	*Maynard, Mo.*,	1 Medicine
Gunnison, Marion, (6)	*Erie, Pa.*,	3 Agriculture
Gurley, Richard Hamilton, (2)	*Nantucket, Mass.*,	1 Mech. Eng.
Guss, Walter Granville, (8)	*Washington, D. C.*,	4 Civil Eng.
Gwillam, Clarence, (1)	*Gloversville*,	1 Arts
Gwinn, Charles Sumner, (6)	*West Shokan*,	3 Arts
Haas, Celia Frances, (4)	*Depauville*,	2 Arts
Hack, Earl Reside, (4)	*Baltimore, Md.*,	2 Mech. Eng.
Hackett, Holland Berkeley, (8)	*Easton, Pa.*,	4 Mech. Eng.
Hackney, Roscoe James, (2)	*Indianapolis, Ind.*,	1 Law
Hadley, Clarence George, (6)	*Mumford*,	3 Mech. Eng.
Haggart, Philip Woodward, (2)	*Ambridge, Pa.*,	1 Civil Eng.
Hahl, Edward Augustus, (2)	*Buffalo*,	Sp. Mech. Eng.
Haight, George Steiner, (4)	*Matteawan*,	2 Civil Eng.
Haight, Helena Harriet, (4)	*Watkins*,	2 Arts
Haight, Manlus Claude, (2)	*Waterloo*,	Sp. Agriculture
Haines, Charles Alvin, A.B., (4)	*Slatington, Pa.*,	2 Mech. Eng.
Haines, Charles Forman, (4)	*Ithaca*,	2 Mech. Eng.
Hale, Henry, Jr., (1)	*Orange, N. J.*,	1 Mech. Eng.
Hale, Rodgers, (5)	*Towanda, Pa.*,	1 Mech. Eng.
Hale, Winfield, (4)	*Los Angeles, Calif.*,	1 Agriculture
Hall, Donald Adair, (2)	*Portland, Ind.*,	1 Law
Hall, Edwin Sawyer, (2)	*East Dixfield, Me.*,	1 Law
Hall, Gilbert Phelps, (2)	*Brooklyn*,	1 Architecture
Hallberg, Lawrence Gustave, 2d., (2)	*Evanston, Ill.*,	1 Mech. Eng.
Halley, Erskine Burt, (1)	*Troy*,	4 Arts
Halliday, Morris Samuel, (7)	*Ithaca*,	Sr. Law
Hallock, Daniel Wells, (2)	*Rocky Point*,	1 Agriculture
Hallock, John David, (2)	*Riverhead*,	1 Law
Hallock, William Nowlen, (4)	*Bath*,	Jr. Law

Halloran, Harry Richmond, (4)
Townsville, Queensland, Australia, 4 Mech. Eng.
Hallstead, Frank Nathaniel, Jr., (2) *Scranton, Pa.*, 1 Mech. Eng.
Halpin, Edward, (2) *Odessa*, Sp. Agriculture
Halpin, Leo Aloysius, (8) *New York City*, 4 Med. (N. Y. C.)
Halsey, Hampton Howell, (6) *Ithaca*, Sr. Law
Halsey, Willard Ballentine, (2) *Summit, N. J.*, 1 Law
Halstead, John Preston, (4) *Rome*, 1 Mech. Eng.
Hamilton, Alexander Morton, (2) *Schenectady*, 1 Mech. Eng.
Hamilton, Ethel Sedden, (4) *Ben Avon, Pa.*, 1 Arts
Hammar, Alfredo Gottlieb, (6) *Ryd, Smaland, Sweden*, 1 Agriculture
Hammel, Victor Frank, (6) *Joliet, Ill.*, 3 Civil Eng.
Hammond, Frances Belle, (6) *Belfast*, 3 Arts
Hammond, Robert Bertine, (10) *Millbrook*, 3 Med. (N.Y.C.)
Hanauer, Girard, (4) *Ithaca*, Sp. Agriculture
Hand, Clarence Joseph, (2) *Plainfield, N. J.*, 1 Law
Haney, Albert Paul, (2) *Seneca Falls*, 1 Civil Eng.
Hanford, John William, (2) *Stanford*, 1 Mech. Eng.
Hanigan, Belle, (7) *Alplaus*, 4 Arts
Hanley, John Patrick, (8) *Stafford Springs, Conn.*, 4 Med. (N.Y.C.)
Hannan, David Edward, (4) *Chicago, Ill.*, 4 Civil Eng.
Hannon, William Weatherly, (6) *Montgomery, Ala.*, Sp. Architecture
Hanson, George Charles, (4) *Bridgeport, Conn.*, 2 Civil Eng.
Hanson, Ross Arnold, (2) *Owego*, 1 Civil Eng.
Hapgood, William, (4) *Warren, O.*, 2 Mech. Eng.
Harding, Claude Corydon, (4) *Wellsboro, Pa.*, 2 Agriculture
Hargreaves, Robert, (2) *Detroit, Mich.*, 1 Mech. Eng.
Harnden, Frank, (4) *Brooklyn*, 3 Med. (N. Y. C.)
Harries, William Edward, (4) *Buffalo*, 2 Agriculture
Harrington, Arthur William, (2) *Watertown*, 1 Civil Eng.
Harrington, Henry Nelson, (2) *Delta*, 1 Law
Harris, Eugene Augustus, A.B., M.D., (2)
Navasota, Texas, Sp. Med. (N. Y. C.)
Harris, George Rodney, (2) *Cohocton*, 1 Architecture
Harris, James Armstrong, Jr., (2) *Cleveland, O.*, 1 Mech. Eng.
Harris, Leon, (4) *Brooklyn*, 2 Med. (N. Y. C.)
Harris, Richard Green, (2) *Baltimore, Md.*, 2 Mech. Eng.
Harrison, Harry, (6) *Passaic, N. J.*, 3 Mech. Eng.
Harrison, Howard Griswold, (6) *Addison*, 2 Civil Eng.
Harrison, Ross Ray, (2) *Washington, D. C.*, 1 Mech. Eng.
Harrison, William Taylor, (6) *Buffalo*, 3 Mech. Eng.
Harsha, William Thomas, (2) *Chicago, Ill.*, Sp. Medicine

Hart, Carlos Dempster, (8)	*Turin*,	4 Mech. Eng.
Hart, Harold Leslie, A.B., (6)	*Ithaca*,	Sr. Law
Hart, Haynes Lloyd, (6)	*Auburn*,	3 Mech. Eng.
Hartigan, Irving Cress, (4)	*Manila, P. I.*,	2 Mech. Eng.
Hartigan, William Edward, (4)	*Norwich*,	2 Medicine
Hartman, Carrie Zoe, (2)	*Bozeman, Mont.*,	1 Arts
Hartman, Flora Madge, (2)	*Bozeman, Mont.*,	1 Arts
Hartnett, Michael Arnold, B.S., (2)	*Orangeburg, S. C.*,	2 Mech. Eng.
Hartung, Marion John, (4)	*Wyckoff, N. J.*,	2 Mech. Eng.
Hartwell, George Vail, (2)	*Saratoga Springs*,	1 Mech. Eng.
Hartzell, Donald Whiting, (4)	*Canton, O.*,	2 Mech. Eng.
Hascall, Theodore Conrad, Ph.B., (2)	*New York City*,	1 Med. (N. Y. C.)
Haskell, Clifton Roy, (4)	*Portland, Me.*,	1 Mech. Eng.
Haskell, Frank Edward, (8)	*Holyoke, Mass.*,	4 Mech. Eng.
Hassett, Thomas Joseph, (8)	*Fishkill-on-Hudson*,	Sr. Law
Hastings, Edwin Hamilton, Jr., (4)	*Homer*,	2 Arts
Hastings, Louise Parmalee, (8)	*Homer*,	4 Arts
Hatfield, Hazel May, A.B., (6)	*Newark, N. J.*,	3 Med. (N. Y. C.)
Hathaway, Henry Mona, (4)	*Seattle, Wash.*,	1 Civil Eng.
Haug, Frederick William, (4)	*New York City*,	2 Mech. Eng.
Haupt, Max, (8)	*Homestead, Pa.*,	4 Civil Eng.
Hawkins, Bronson Hiram, (4)	*Syracuse*,	Sp. Agriculture
Hayes, Edwin Hawley, (1)	*Buffalo*,	1 Medicine
Hayes, Herbert Edward, (2)	*Cohoes*,	1 Civil Eng.
Hayes, Raymond Felch, (1)	*Berwick, Me.*,	1 Medicine
Hays, Donald Symington, (6)	*Baltimore, Md.*,	4 Mech. Eng.
Heal, Ethel H, (2)	*Batavia*,	1 Arts
Heater, Nelson Raymond, (6)	*Waterbury, Conn.*,	Sr. Law
Hechheimer, Herbert, (8)	*Baltimore, Md.*,	4 Mech. Eng.
Hecht, Jerome Montefiore, (4)	*Rochester*,	2 Mech. Eng.
Heilman, Fred Lee, (2)	*Greenville, Pa.*,	1 Law
Heine, Henry Anton, (6)	*Washington, D. C.*,	3 Mech. Eng.
Heizmann, Charles Raymond, Jr., (2)	*Reading, Pa.*,	1 Arts
Heller, William Benjamin, (4)	*New York City*,	1 Arts
Helmer, Harry White, (2)	*Chicago, Ill.*,	1 Architecture
Hemberger, John Fred, (2)	*Dayton, O.*,	1 Mech. Eng.
Hemingway, Gertrude Louise, (6)	*Troy*,	3 Arts
Hemingway, Hughey Stewart, (2)	*Washington, D. C.*,	1 Mech. Eng.
Hemingway, John Carlisle, (8)	*Washington, D. C.*,	4 Mech. Eng.
Henderson, Mary Bulkley, (2)	*Port Chester*,	1 Arts
Henderson, Nellie Mae, (4)	*Norwich, Conn.*,	1 Arts

Henderson, Robert Moss, Jr., (4)	*Montgomery, Ala.*,	2 Arts
Henderson, Thomas Richard, (6)	*Philadelphia, Pa.*,	2 Civil Eng.
Hendrickson, Everett House, (8)	*Brooklyn*,	4 Mech. Eng.
Henion, Hudson Dodge, (2)	*Geneva*,	1 Mech. Eng.
Henning, Carl Bryant, (2)	*Milwaukee, Wis.*,	1 Mech. Eng.
Henriksen, Martha Kaspara, (4)	*Brooklyn*,	2 Arts
Henry, Lewis, (2)	*Elmira*,	1 Arts
Henry, Lucas Smith, (2)	*Canandaigua*,	1 Arts
Henry, William James, (3)	*Wayne, Pa.*,	1 Civil Eng.
Hequembourg, Louis Max, (4)	*Dunkirk*,	2 Civil Eng.
Herdman, William James, (9)	*Jerseyville, Ill.*,	1 Mech. Eng.
Herpel, Harry Conrad, (8)	*Reynoldsville, Pa.*,	1 Mech. Eng.
Herr, Benjamin Musser, (7)	*Lancaster, Pa.*,	4 Mech. Eng.
Herr, Frederick John, (6)	*Brooklyn*,	3 Civil Eng.
Herrick, Seymour Morton, (8)	*Matanzas, Cuba*,	4 Agriculture
Herriman, Victor Doraval, (4)	*Brooklyn*,	2 Mech. Eng.
Herron, Wallace Wood, (6)	*Westfield*,	3 Veterinary
Hess, Walter, (6)	*New York City*,	3 Med. (N. Y. C.)
Hewitt, Carl Thompson, (4)	*Gouverneur*,	2 Mech. Eng.
Hewitt, John Marshall, (6)	*Marianna, Ark.*,	4 Mech. Eng.
Hewitt, Maude Graham, (2)	*Margaretville*,	1 Arts
Heymsfeld, Nicholas Alexander, (4)	*New York City*,	Jr. Law
Hickman, Frances, (4)	*Buffalo*,	2 Arts
Hickstein, William Lux, (2)	*Auburn*,	2 Arts
Hiett, Ralph Waldo, (3)	*Toledo, O.*,	2 Mech. Eng.
Higgins, George Hendrick, (2)	*Cortland*,	1 Mech. Eng.
Higgins, Max Smith, (8)	*Cortland*,	4 Mech. Eng.
Hilborn, William Harrison, (3)	*Jasper*,	1 Civil Eng.
Hildebrant, Bertram Augustus, (8)	*Ithaca*,	4 Mech. Eng.
Hildreth, Norman Evans, (2)	*Flushing*,	1 Civil Eng.
Hill, Benjamin Mason, (6)	*Petersburg, Va.*,	3 Mech. Eng.
Hill, Lockwood, (2)	*St. Louis, Mo.*,	1 Mech. Eng.
Hillebrand, Harold Newcomb, (2)	*Washington, D. C.*,	1 Arts
Hillemeier, Arthur, (2)	*Mt. Vernon*,	1 Civil Eng.
Hillenbrand, Frederick Louis, (6)	*New York City*,	Sp. Med. (N.Y.C.)
Hillman, Sidney Maurice, (6)	*New York City*,	3 Mech. Eng.
Hills, Harry Clark, (3)	*Youngstown, O.*,	Jr. Law
Hills, John Vernon, (6)	*Vernon*,	3 Veterinary
Hilmer, Otto Ernst, (6)	*Brooklyn*,	3 Mech. Eng.
Hiltebrant, Oscar Raymond, (8)	*Kingston*,	3 Mech. Eng.
Hiltebrant, Stephen Delbert, (2)	*Rondout*,	1 Arts
Himmelstein, Urius, (2)	*New York City*,	1 Med. (N.Y.C.)

Hine, Dora Frances, (6)	*Bay City, Mich.*,	3 Arts
Hirsch, Herman David, (2)	*Brooklyn*,	1 Civil Eng.
Hirschfeld, David Bernhard, (2)	*New York City*,	1 Med. (N.Y.C.)
Hirsh, Pauline Eshner, (2)	*Philadelphia, Pa.*,	1 Arts
Hitchcock, Joseph Fithian, (6)	*Philadelphia, Pa.*,	3 Mech. Eng.
Hitt, Laurance Wilbur, (2)	*Indianapolis, Ind.*,	1 Architecture
Hoag, Arthur Edmond, (4)	*Millerton*,	2 Med. (N. Y. C.)
Hobart, Earle Tisdale, (4)	*Brookline, Mass.*,	2 Mech. Eng.
Hoch, George Francis, (6)	*Newark, N. J.*,	2 Med. (N. Y. C.)
Hocker, Mervyn J, (4)	*Highspire, Pa.*,	2 Mech. Eng.
Hocson, Felix, B.A., (3)	*Manila, P. I.*,	Sp. Agriculture
Hodge, Franklin Stuart, (2)	*Ithaca*,	1 Law
Hodge, James Thacher, (3)	*Cincinnati, O.*,	1 Civil Eng.
Hodge, Thomas Ditto, (4)	*Henderson, Ky.*,	1 Mech. Eng.
Hodges, Leonie Rose, (6)	*New York City*,	Sp. Agri.
Hodges, Norman Pond, (2)	*New York City*,	1 Law
Hoerner, John Hanna, (2)	*New Orleans, La.*,	2 Mech. Eng.
Hoffman, Florentine Milton, (4)	*New Brunswick, N. J.*,	1 Med. (N.Y.C.)
Hoffman, Frederick Louis, (2)	*Lyons*,	1 Mech. Eng.
Hoffmann, Richard, (6)	*New York City*,	2 Med. (N. Y. C.)
Hogan, Joseph Vincent, (4)	*Watertown*,	2 Civil Eng.
Hogan, William Edward, (9)	*Bridgeport, Conn.*,	4 Mech. Eng.
Hoge, Joseph Franklin Dix, (8)	*Baltimore, Md.*,	4 Mech. Eng.
Hoge, Philip Barlow, (2)	*Washington, D. C.*,	1 Arts
Hohner, Edwin, (8)	*Buffalo*,	4 Mech. Eng.
Holbert, Emma Alice, (4)	*Ellenville*,	2 Arts
Holla, William Andrew, (2)	*New York City*,	1 Med. (N.Y.C.)
Hollander, Samuel, (8)	*New York City*,	4 Med. (N.Y.C.)
Hollands, Stephen Charles, (3)	*Hornellsville*,	1 Mech. Eng.
Hollenbeck, Brua Arnot, (4)	*Ithaca*,	2 Mech. Eng.
Hollenbeck, Harry Bell, (7)	*Avon*,	4 Mech. Eng.
Hollenberger, Theodore James, (2)	*Chicago, Ill.*,	1 Mech. Eng.
Holloway, Arthur Power, (6)	*Montclair, N. J.*,	2 Civil Eng.
Holloway, Roger Tifft, (4)	*Montclair, N. J.*,	2 Civil Eng.
Holmes, Howard Abbott, (8)	*Ithaca*,	4 Mech. Eng.
Holmes, Iva May, (8)	*Gouverneur*,	4 Arts
Holmes, Webster Balkwill, (6)	*Cincinnati, O.*,	3 Mech. Eng.
Holt, John Washburn, (4)	*Cleveland, O.*,	2 Mech. Eng.
Holton, Edward Newton, (8)	*Montclair, N. J.*,	2 Agriculture
Holton, Walter Bounell, (2)	*Montclair, N. J.*,	1 Medicine
Holzheimer, Gerald Lee, (4)	*Elmira*,	2 Mech. Eng.

Hook, Warren Howard, (4)	*Ithaca*,	2 Mech. Eng.
Hooker, John Palmer, (2)	*Watertown*,	1 Civil Eng.
Hooker, Katharine Jane, (4)	*Ithaca*,	2 Arts
Hooper, Franklyn Dana, (6)	*Brooklyn*,	3 Mech. Eng.
Hoover, Loring Revere, (1)	*Evanston, Ill.*,	1 Law
Hopkins, Cecil Blaine, (2)	*Watsonville, Calif.*,	1 Civil Eng.
Hopkins, Richard Thomas, (4)	*Flushing*,	2 Med. (N. Y. C.)
Hopper, Elizabeth Gladys, (4)	*Ithaca*,	2 Arts
Hopper, Walter Everett, (4)	*Newark, N. J.*,	2 Arts
Hoppin, John Keene, (9)	*Buffalo*,	4 Mech. Eng.
Hopple, William Hanna, (6)	*Cincinnati, O.*,	4 Arts
Hord, Carey W, (1)	*Marion, O.*,	Sp. Arts
Horn, Arthur, (2)	*New York City*,	1 Med. (N.Y.C.)
Horn, Stanley Granger, A.B., (2)	*Brooklyn*,	1 Medicine
Hornthal, Samuel, (2)	*New York City*,	1 Mech. Eng.
Horstman, August George, (8)	*Brooklyn*,	4 Med. (N.Y.C.)
Horton, Harvey Starring, (8)	*Silver Creek*,	4 Architecture
Horton, Philip Zell, (2)	*Peoria, Ill.*,	1 Civil Eng.
Horton, Queenie Northrop, (2)	*Brewster*,	1 Arts
Horwitt, Solomon, (8)	*New York City*,	3 Med. (N. Y. C.)
Horwood, John Wesley, (6)	*Hoboken, N. J.*,	3 Arts
Hoschke, William Edward, (2)	*Brooklyn*,	2 Mech. Eng.
Howard, Dudley Russell, (5)	*Ogdensburg*,	Jr. Law
Howard, Mayne S, (4)	*Franklinville*,	2 Arts
Howard, Nelson Webster, (6)	*Ogdensburg*,	3 Mech. Eng.
Howard, Otis Woolworth, (4)	*Omaha, Nebr.*,	2 Mech. Eng.
Howorth, Harold Folsom, (2)	*Amesbury, Mass.*,	1 Mech. Eng.
Howe, Arthur John Perry, (6)	*Montclair, N. J.*,	2 Med. (N. Y. C.)
Howe, James McKechnie Lawrence, (4)	*Canandaigua*,	2 Mech. Eng.
Howe, Locy, (8)	*Memphis*,	4 Arts
Howe, Ralph Wilsou, (4)	*South Salem*,	2 Mech. Eng.
Howes, Alfred Pettis, Jr., (6)	*Utica*,	3 Arts
Howland, Clarence Otis, (8)	*Geneva*,	4 Mech Eng.
Howland, Sarah Maud De Valle, (6)	*Binghamton*,	4 Arts
Hoyt, Frank Watson, (4)	*Peckville, Pa.*,	2 Mech. Eng.
Hoyt, Herbert Butler, (2)	*Wellsville*,	1 Civil Eng.
Hoyt, William Glenn, (2)	*East Onondaga*,	1 Civil Eng.
Hubbell, Charles Wesley, (2)	*Pittston, Pa.*,	3 Mech. Eng.
Hull, Emmett Johnston, (4)	*Jackson, Miss.*,	Sp. Architecture
Hulquist, Raymond Guy, (2)	*Jamestown*,	1 Law
Humburch, Raymond Sage, (2)	*Rochester*,	1 Mech. Eng.
Humphrey, Charles Scranton, (4)	*West New Brighton*,	2 Arts

Humpstone, Harold Dunmore, (4)	*Brooklyn*,	2 Mech. Eng.
Hunn, Chester Jermain, (4)	*Ithaca*,	1 Agriculture
Hunt, Guy Hildebrand, (4)	*Washington, D. C.*,	2 Civil Eng.
Hunter, Richard Fenley, (2)	*Covington, Ky.*,	1 Law
Hupe, Henry Lloyd, (2)	*Buechel, Ky.*,	1 Mech. Eng.
Hurley, John Patrick, (6)	*Dublin, Ireland*,	3 Civil Eng.
Husted, Clifford Mackay, (4)	*Buffalo*,	2 Mech. Eng.
Hutchings, Eusebius Theodore, (2)	*Louisville, Ky.*,	1 Architecture
Hutchins, Carleton Brown, (4)	*Chicago, Ill.*,	Jr. Law
Hutchinson, Alfred Henry, (2)	*Chicago, Ill.*,	1 Mech. Eng.
Hutchinson, Harold John, (2)	*Dryden*,	1 Arts
Hutchinson, Raymond Arthur, (2)	*Watervliet*,	1 Arts
Hutchison, James Hervey, (9)	*Elkview, Pa.*,	4 Civil Eng.
Hutton, Clude Demarest, (8)	*Ridgewood, N. J.*,	3 Arts
Hyatt, Bradford, (5)	*Ithaca*,	3 Veterinary
Hyatt, Edward Kenneth, (2)	*Kirkwood, Mo.*,	1 Civil Eng.
Hyde, Roger Davies, (4)	*Ithaca*,	2 Veterinary
Hyde, Tom Bruce, (2)	*Ithaca*,	1 Mech. Eng.
Hynes, Francis Benedict, (2)	*Lyons Falls*,	1 Arts
Illmer, Gustav Adolphus Marius, (2)	*Baltimore, Md.*,	1 Mech. Eng.
Ingall, Oswald Drew, (6)	*Montclair, N. J.*,	3 Arts
Ingalls, John Conrad, (6)	*Phelps*,	1 Civil Eng.
Ingersoll, Edwin Stanley, (2)	*Rochester*,	1 Arts
Irish, Frederic Joseph, (10)	*Patterson*,	1 Mech. Eng.
Irvine, Pierpont Edward, A.B., (4)	*Wellsburg, W. Va.*,	2 Mech. Eng.
Itskovitz, John Henry, (2)	*New York City*,	1 Med. (N.Y.C.)
Jablons, Benjamin, (4)	*New York City*,	2 Med. (N.Y.C.)
Jack, Marvin, (4)	*Lewiston*,	2 Agriculture
Jackson, Eugene, (2)	*Brooklyn*,	1 Arts
Jackson, Eunice Willice, (2)	*Randolph*,	1 Arts
Jackson, Seward Baker, (2)	*Arlington*,	Sp. Agriculture
Jackson, Thomas Marshall, (4)	*Kennett Square, Pa.*,	1 Mech. Eng.
Jacobwitz, Adolph, (2)	*New York City*,	1 Med. (N. Y. C.)
Jacobs, Frederick Henry, Jr., (2)	*Woodhaven*,	1 Med. (N.Y.C.)
Jacoby, Hurlbut Smith, (4)	*Ithaca*,	2 Arts
Jacoby, John Vincent, (6)	*Ithaca*,	1 Agriculture
Jahn, Gustave Adolph, Jr., (4)	*Brooklyn*,	2 Mech. Eng.
James, Harry Richman, (2)	*Chicago, Ill.*,	1 Arts
Jamieson, James Herbert, (2)	*Evanston, Ill.*,	1 Civil Eng.
Janes, Edward Allyn, (6)	*Plainfield, N. J.*,	3 Arts
Jansen, Edward Walter, (6)	*New York City*,	3 Mech. Eng.
Jarrett, Ethel Lacey, (4)	*Brooklyn*,	2 Arts

Jenkins, Edna Mary, (2)	*Walton*,	1 Agriculture
Jenkins, Minnie, (6)	*Walton*,	3 Agriculture
Jennings, Henry, (5)	*Southold*,	Sp. Agriculture
Jenkinson, Richard Dale, (5)	*Bellevue, Pa.*,	4 Civil Eng.
Jenks, Laban Sheldon, (6)	*Portland*,	Sr. Law
Jesser, Edward Arthur, (4)	*Richmond Hill*,	2 Arts
Jessup, George Penney, (4)	*Quogue*,	1 Mech. Eng.
Jewell, Charles Gordon, (6)	*Seneca Falls*,	4 Mech. Eng.
Jewell, Marion Dusney, (4)	*Schenectady*,	2 Arts
Joachim, Laura, (2)	*Brooklyn*,	1 Arts
Joerger, William Pettus, (6)	*Brooklyn*,	3 Arts
Johnson, Bruce Smith, (4)	*McGraw*,	1 Civil Eng.
Johnson, Carlton Perry, (8)	*Brooklyn*,	4 Arts
Johnson, Chesley Heath, (6)	*Babylon*,	2 Mech. Eng.
Johnson, Edith Eugenie, (6)	*Palo Alto, Calif.*,	3 Med. (N.Y.C.)
Johnson, Elisha Martin, (8)	*Olean*,	4 Mech. Eng.
Johnson, George Friedman, (6)	*Albany*,	3 Mech. Eng.
Johnson, George Tewksbury, (7)	*Portsmouth, O.*,	4 Mech. Eng.
Johnson, Harvey Fletcher, (4)	*Ithaca*,	4 Mech. Eng.
Johnson, Henry Langley, (6)	*Boston, Mass.*,	3 Arts
Johnson, Howard White, B.S., (4)	*Chicago, Ill.*,	2 Mech. Eng.
Johnson, John Arthur, (6)	*North Gage*,	3 Veterinary
Johnson, John Thomas, Jr., (2)	*Akron, O.*,	1 Mech. Eng.
Johnson, Lindley Wilkeson, (6)	*Youngstown*,	4 Agriculture
Johnson, Marcus Rodney, (4)	*Erie, Pa.*,	2 Mech. Eng.
Johnson, Milton John, (8)	*Jamestown*,	4 Med. (N.Y.C.)
Johnson, Nathan Clarke, (8)	*Pittston, Pa.*,	4 Mech. Eng.
Johnson, Oliver Richard, (2)	*Jamestown*,	1 Architecture
Johnson, Orson Tracy, Jr., (2)	*Riverside, Calif.*,	1 Mech. Eng.
Johnson, Mrs. S Albert, (4)	*Mansfield, Pa.*,	3 Arts
Johnston, Charles Watkins, (6)	*Brooklyn*,	3 Mech. Eng.
Johnston, James Markham Ambler, B.S., M.E., (2)	*Salem, Va.*,	4 Mech. Eng.
Johnston, William Chester, (1)	*Rochester*,	1 Mech. Eng.
Jones, Arthur Locke, (8)	*Buffalo*,	4 Mech. Eng.
Jones, Bevan, (8)	*New York City*,	4 Civil Eng.
Jones, Charles Emerson, Jr., (4)	*Hartford, Conn.*,	2 Med. (N.Y.C.)
Jones, Elliot Penrose, (5)	*West Chester, Pa.*,	3 Civil Eng.
Jones, Ernest Wilbur, (6)	*Gainesville*,	4 Mech. Eng.
Jones, Frank Henry, (2)	*Memphis, Tenn.*,	Sp. Mech. Eng.
Jones, George Francis, A.B., (2)	*Montreal, Que.*, Can.,	1 Agr.
Jones, Henry Roger, Jr. (6)	*New Hartford, Conn.*,	Sr. Law

Jones, Howard Stanley, (4)	*Buffalo*,	Jr. Law
Jones, Ira Owen, (8)	*Chicago, Ill.*,	4 Mech. Eng.
Jones, Isaac Seeley, (6)	*Relay, Md.*,	4 Mech. Eng.
Jones, John Lucien, (8)	*Buffalo*,	4 Mech. Eng.
Jones, Loring DeLacy, (2)	*Brooklyn*,	1 Arts
Jones, Milton Pratt, (4)	*Deerfield*,	2 Agriculture
Jones, Reid, (2)	*St. Louis, Mo.*,	1 Mech. Eng.
Jones, Ruth Martin, (6)	*Williamsport, Pa.*,	3 Arts
Jones, Stanley Robert, (6)	*Ithaca*,	2 Civil Eng.
Joseph, David, (4)	*New York City*,	2 Med. (N.Y.C.)
Joseph, John Arthur, (4)	*Wilkes-Barre, Pa.*,	2 Mech. Eng.
Josephy, Alvin, (4)	*New York City*,	2 Mech. Eng.
Joshi, Lemuel Lucas, B.Sc., (6)	*Grant Road P.O., Bombay, India*,	3 Med. (N. Y. C.)
Joslyn, Royal Cuthbert, (8)	*Jersey City Heights, N. J.*,	4 Civil Eng.
Judd, Caroline Whallon, (8)	*Port Henry*,	4 Arts
Judson, David Henry, (6)	*Oswego*,	3 Civil Eng.
Junger, Marcus, M.D., (1)	*Bedford Station*,	Sp. Med. (N.Y.C.)
Justin, Joel DeWitt, (8)	*Rochester*,	4 Civil Eng.
Kahanowitz, Samuel, (6)	*Greensburg, Pa.*,	3 Mech. Eng.
Kahl, William, (7)	*Syracuse*,	4 Mech. Eng.
Kahn, Albert Milton, (2)	*Cincinnati, O.*,	1 Mech. Eng.
Kahn, Max, (2)	*New York City*,	1 Med. (N.Y.C.)
Kahn, Morris Hirsch, (2)	*New York City*,	1 Med. (N.Y.C.)
Kalberg, August, (2)	*New Britain, Conn.*,	1 Civil Eng.
Kampf, Louis, (2)	*Norwich, Conn.*,	1 Civil Eng.
Kanouse, George Edward, (6)	*Hackettstown, N. J.*,	2 Med. (N. Y. C.)
Karaline, Anna, (10)	*New York City*,	4 Arts
Kaufhold, Frank, (8)	*Newark, N. J.*,	4 Med. (N.Y.C.)
Kearns, Rose Pomeroy, (3)	*Forestville*,	Sp. Agriculture
Kearns, Thomas Joseph, B.A., (8)	*Manchester, N. H.*,	4 Med. (N.Y.C.)
Keeler, George Greene, (5)	*Chicago, Ill.*,	1 Mech. Eng.
Keeler, Ralph Whittlesey, (1)	*Detroit, Mich.*,	1 Mech. Eng.
Keenan, James Nicholas Joseph, (4)	*Brooklyn*,	2 Mech. Eng.
Keenan, Reta Elizabeth, (2)	*Philadelphia, Pa.*,	1 Arts
Keene, George Frederick, (1)	*Providence, R. I.*,	3 Mech. Eng.
Keenholts, Winfield Scott, Jr., (2)	*Altamont*,	1 Arts
Keet, Ernest Ellsworth, (6)	*Saranac Lake*,	3 Med. (N.Y.C.)
Kehoe, Harry, (4)	*Oswego*,	2 Civil Eng.
Kehrhahn, Charles John, (2)	*San Juan, Porto Rico*,	1 Civil Eng.
Keil, Frank Conrad, (6)	*New York City*,	3 Med. (N. Y. C.)
Keith, Arthur Raymond, (4)	*Oakland, Calif.*,	2 Veterinary

Kelker, Thomas Mahon, (2)	*Harrisburg, Pa.,*	1 Architecture
Keller, Arthur Emil, (4)	*Cleveland, O.,*	Sp. Arch.
Keller, George Meinhard, (2)	*Rochester,*	1 Mech. Eng.
Kelley, Charles Joseph, (2)	*Norwalk, Conn.,*	1 Law
Kelley, George Biddle, (2)	*Troy,*	3 Civil Eng.
Kellogg, George Davis, (6)	*Greenwood,*	1 Civil Eng.
Kellogg, James Gifford, (9)	*Chicago, Ill.,*	4 Mech. Eng.
Kellogg, Joseph Mitchell, (2)	*Emporia, Kansas,*	1 Architecture
Kelly, Ernest, (8)	*Washington, D. C.,*	Sp. Agr.
Kelly, Edward De Verne, (2)	*Oriskany,*	1 Civil Eng.
Kelly, Edward Joseph, (2)	*Scranton, Pa.,*	1 Arts
Kelly, James Lewis, (6)	*Porterville,*	Sr. Law
Kelly, John Francis, (7)	*Scranton, Pa.,*	4 Arts
Kelly, John Francis, Jr., (1)	*Jersey City, N. J.,*	Sp. Law
Kelsey, Dean Lewis, (4)	*No. Tonawanda,*	2 Arts
Kelsey, Joel Smith, Jr., (2)	*Flushing,*	1 Medicine
Kemp, Maurice, (6)	*Catasauqua, Pa.,*	3 Med. (N.Y.C.)
Kenajian, Hagop Getiguny, B.S., C.E., (2)	*Diarbehir, Turkey,*	Sp. Civil Eng.
Kendrick, William Dixon, (6)	*Montgomery, Ala.,*	1 Mech. Eng.
Kennedy, Alexander, Jr., (6)	*Pittsfield, Mass.,*	3 Mech. Eng.
Kennedy, Charles Morehouse, (2)	*Buffalo,*	1 Mech. Eng.
Kennedy, John Curtis, (6)	*Buffalo,*	3 Arts
Kennedy, Walter Critchlow, (6)	*New Brighton, Pa.,*	3 Mech. Eng.
Kenney, John Stanley, (2)	*Newark, N. J.,*	1 Med. (N.Y.C.)
Kent, Henry Thomas, Jr., (4)	*Clifton Heights, Pa.,*	2 Arts
Kenyon, Benjamin, (4)	*Scipio,*	Jr. Law
Kenyon, Jared Shotwell, (2)	*New York City,*	1 Mech. Eng.
Keough, Michael Joseph, (1)	*Upper Troy,*	Sp. Arts
Kernan, Nicholas Edward, A.B., (6)	*Utica,*	Sr. Law
Kerr, Edith, (8)	*Titusville, Pa.,*	4 Arts
Kerr, Eleanor, (6)	*Dougan Hills,*	2 Painting
Kerrigan, Ernest Chester, (1)	*London, Ont., Canada,*	Sp. Arch.
Kessler, Armin George, (4)	*Oswego,*	2 Mech. Eng.
Kettle, William Walter, (6)	*New York City,*	Sp. Med. (N.Y.C.)
Key, Benjamin Franklin, (2)	*Wilmerding, Pa.,*	1 Mech. Eng.
Keys, Millard, (2)	*Holley,*	1 Arts
Kice, Luther Holden, (6)	*Wharton, N. J.,*	2 Med. (N.Y.C.)
Kiendl, Adolph Cornelius, (6)	*Brooklyn,*	3 Arts
Kieselbach, Oswald, (3)	*Mendota, Ill.,*	Jr. Law
Kilburn, Edward Douglas, (4)	*Malone,*	3 Mech. Eng.
Kimball, Clarence, (6)	*Passaic, N. J.,*	3 Arts

Kimball, Victor Gage, (2)	*Fulton*,	1 Veterinary
King, Alfred Faris, B.S., (1)	*New York City*,	2 Mech. Eng.
King, Alvin Ward, (6)	*Washington, D. C.*,	3 Civil Eng.
King, Burt Morrow, (4)	*White Bear Lake, Minn.*,	Jr. Law
King, Florence Olive, (2)	*Unadilla*,	1 Arts
King, Harry Swayne, (8)	*Toledo, O.*,	4 Arts
King, Leon True, (2)	*Ilion*,	1 Civil Eng.
King, Tertullus Harrison, Jr., (6)	*Trumansburg*,	Sp. Agriculture
Kingsbury, Herbert Willard, (4)	*Scottsville*,	2 Arts
Kinnear, Eugene Carner, (6)	*Washington, D. C.*,	3 Civil Eng.
Kinney, Grace Eleanor, (4)	*Snowdon*,	2 Arts
Kinney, Price Witter, (8)	*Lyons*,	4 Mech. Eng.
Kipp, Ralph, (4)	*Lexington*,	1 Med. (N.Y.C.)
Kirchhofer, Melville Peter Lewis, (6)	*Massillon, O.*,	Sr. Law
Kirchner, Anna Elsa, (5)	*Philadelphia, Pa.*,	4 Arts
Kirk, William Andrew Anderson, (6)	*Gouverneur*,	3 Arts
Kirkendall, Lucy Lowry, (2)	*Ithaca*,	1 Arts
Kiso, Freda, (2)	*Brooklyn*,	1 Arts
Kissel, Jacob, (8)	*Brooklyn*,	4 Med. (N. Y. C.)
Kissick, Joseph, Jr., (8)	*New York City*,	2 Mech. Eng.
Kitchell, Stanley, (3)	*Milwaukee, Wis.*,	1 Mech. Eng.
Klaber, John James, (2)	*Carlstadt, N. J.*,	2 Architecture
Klein, John H, (5)	*Buffalo*,	Jr. Law
Kleniewska, Boza, (2)	*Lubelski, Russian Portland*,	2 Agriculture
Kleppisch, George Hugo Otto, (6)	*New York City*,	3 Mech. Eng.
Kline, Daniel Davold, (6)	*Williamsport, Pa.*,	Sr. Law
Kling, Herbert Allen, (9)	*Woodbine, Iowa*,	2 Mech. Eng.
Klock, Nellie Adah, (8)	*St. Johnsville*,	4 Arts
Knapp, Arthur, (6)	*Ardmore, Pa.*,	2 Mech. Eng.
Knapp, Walter Carver, (2)	*Fabius*,	Sp. Agriculture
Knemeyer, William Henry, (3)	*Brooklyn*,	1 Architecture
Knibloe, Laurence, (6)	*Buffalo*,	3 Arts
Knight, Ralph Floyd, (4)	*Machias*,	2 Veterinary
Knights, Arthur Holland, (2)	*Russia*,	Sp. Agriculture
Knowles, Paul, (4)	*Avon*,	2 Medicine
Knowlton, Orin Henry, (4)	*Perrysburg*,	Jr. Law
Knowlton, Robert Henry, (8)	*Buffalo*,	4 Civil Eng.
Koehler, Charles George, Jr., A.B., (8)	*Brooklyn*,	4 Med. (N.Y.C.)
Koeller, Clara Ottilia, (6)	*Hoboken, N. J.*,	3 Arts
Koenig, Louis, (6)	*Brooklyn*,	3 Med. (N.Y.C.)
Kohan, Joseph Henry, (6)	*Brooklyn*,	Jr. Law
Kohn, Arthur Hirsh, (8)	*Philadelphia, Pa.*,	4 Civil Eng.

Kohn, Benjamin, (6)	*Rockaway Beach*,	Sr. Law
Kohtz, John Lewis, (1)	*Chicago, Ill.*,	1 Agriculture
Kosminsky, Isaac Joseph, (6)	*Texarkana, Tex.*,	3 Mech. Eng.
Kothe, George, (6)	*Indianapolis, Ind.*,	1 Mech. Eng.
Kotinsky, Arthur, (1)	*Woodbine, N. J.*,	Sp. Agriculture
Kouyoumdjian, Haroutine, (8)	*Bagdad, Asiatic Turkey*,	4 Mech. Eng.
Kraemer, Milton, (4)	*Baltimore, Md.*,	3 Mech. Eng.
Kraft, Alvin Charles,	*Brooklyn*,	1 Arts
Kramer, Horace Walter, (2)	*Dayton, O.*,	1 Law
Krass, Ralph William, B.S., (4)	*New York City*,	4 Mech. Eng.
Krauter, Harold S, (8)	*Tobyhanna, Pa.*,	2 Mech. Eng.
Kreiner, Mariam Rosella, (2)	*New York City*,	1 Medicine
Kresky, Henry, (6)	*New York City*,	3 Med. (N. Y. C.)
Kretschmar, Magda, (2)	*Brooklyn*,	1 Arts
Kretzschmar, Bertha, (2)	*Gloversville*,	1 Arts
Kristal, Abraham Francis, (4)	*Newark, N. J.*,	2 Civil Eng.
Kronberg, Sol, A.B., (2)	*New York City*,	2 Civil Eng.
Kronenberg, Otto Fuchs, (2)	*Buffalo*,	1 Mech. Eng.
Krugler, Wallace, (4)	*Jersey City, N. J.*,	2 Med. (N.Y.C.)
Kruse, Otto Von, (2)	*Buffalo*,	1 Arts
Kruttschmitt, John, (2)	*Chicago, Ill.*,	1 Mech. Eng.
Kuan, Ching Hsin, (2)	*Hong Kong, China*,	4 Arts
Kuehns, Romeo Benvenuto, (4)	*Milwaukee, Wis.*,	2 Mech. Eng.
Kurtz, Ford, (6)	*E. Stroudsburg, Pa.*,	3 Civil Eng.
Kuschke, Arthur Wyndham, (4)	*Plymouth, Pa.*,	2 Civil Eng.
Kyser, Kathryn Belle, (6)	*Canastota*,	3 Arts
Laase, Christian F J, B.S., M. D., (2)	*New York City*,	Sp. Med. (N.Y.C.)
La Breque, Henry Francis, (6)	*Holyoke, Mass.*,	3 Civil Eng.
Ladd, Walter Manning, (6)	*Buffalo*,	4 Mech. Eng.
Laird, Ida Marie, A.B., (8)	*Auburn*,	4 Med. (N.Y.C.)
Lally, Ralph Richard, (4)	*Pittsburg, Pa.*,	2 Mech. Eng.
Lamb, Roy Dane, (8)	*Chicago, Ill.*,	1 Mech. Eng.
Lamberton, Albert Meredith, (4)	*Westfield, N. J.*,	2 Mech. Eng.
Lampert, Milton Albert, (4)	*Brooklyn*,	2 Med. (N.Y.C.)
Lance, Ruth Mitchell, (2)	*Kingston, Pa.*,	1 Medicine
Lance, William Lyman, (4)	*Kingston, Pa.*,	2 Civil Eng.
Landa, Francisco, (7)	*Habana, Cuba*,	4 Civil Eng.
Lande, Isaac, (6)	*Elmira*,	3 Arts
Lander, Ralph Clinton, (8)	*Naugatuck, Conn.*,	3 Arch.
Landesman, Harry, (4)	*New York City*,	2 Med. (N.Y.C.)

Landis, Harry L, (4)	*Waynesboro, Pa.*,	2 Mech. Eng.
Landis, Mark Homer, (2)	*Waynesboro, Pa.*,	1 Mech. Eng.
Landmesser, Charles Frederick, (8)	*Newark, N. J.*,	4 Arts
Langenberg, George Omar, (2)	*St. Louis, Mo.*,	1 Civil Eng.
Langfeld, Clarence Meyer, (8)	*Baltimore, Md.*,	4 Mech. Eng.
Langrock, Edwin George, (2)	*New York City*,	1 Med.(N.Y.C.)
Lapp, Grover William, (6)	*Rochester*,	3 Mech. Eng.
Larkin, John Kneisley, (5)	*Dayton, O.*,	2 Med. (N. Y. C.)
Larkin, Katherine Veronica, (3)	*Ithaca*,	1 Arts
Larrabure, Fernando, (1)	*Lima, Peru*,	1 Civil Eng.
Larrabure, German, (2)	*Lima, Peru*,	1 Mech. Eng.
Lasher, Herbert, (4)	*Griffin Corners*,	Jr. Law
Lathrop, Homer Newton, (2)	*Sherburne*,	Sp. Agriculture
Latimer, Homer H, (2)	*Wilmington, Del.*,	1 Mech. Eng.
Lattin, Benton, (6)	*Oneonta*,	3 Civil Eng.
Lattin, Berton, (6)	*Oneonta*,	3 Arts
Laurie, Thomas Forrest, (6)	*Auburn*,	3 Med.(N.Y.C.)
Lavine, Abraham, (2)	*Elmira*,	1 Arts
Law, Harry Comstock, (4)	*Collins*,	2 Civil Eng.
Lawrence, Frank Elmaker,(8)	*Albany*,	4 Civil Eng.
Lawrence, John Henry, 2d, (2)	*Albany*,	1 Mech. Eng.
Lawson, George, (8)	*New York City*,	4 Mech. Eng.
Lay, Robert Phinny, (6)	*Franklin, Pa.*,	3 Mech. Eng.
Layhe, Francis Bernard, (6)	*Fort Plain*,	3 Arts
Lazo, Antonio, Jr., (6)	*Gautemala City, C. A.*,	3 Civil Eng.
Leatherman, Marian, (6)	*Pittsburgh, Pa.*,	3 Arts
Leavitt, Arthur Harter, (4)	*Akron, O.*,	2 Mech. Eng.
Lechler, Bruno Charles, (4)	*Brooklyn*,	2 Civil Eng.
Lechman, Helena, (2)	*Yonkers*,	1 Arts
Lee, Cazenove Gardner, Jr., (7)	*Washington, D.C.*,	3 Mech. Eng.
Lee, Charles Avery, Jr., (6)	*Chicago, Ill.*,	3 Mech. Eng.
Lee, Myron A, (2)	*Auburn*,	1 Mech. Eng.
Lee, Maurice du Pont, (4)	*Washington, D. C.*,	3 Mech. Eng.
Lee, Ora, Jr., (8)	*Albion*,	4 Agriculture
Lee, William Forrest, (8)	*N. Tonawanda*,	4 Arts
Leeds, Livingston Allaire, (2)	*Pelham Manor*,	1 Civil Eng.
Lefens, Walter Conrad, (9)	*Chicago, Ill.*,	4 Mech. Eng.
Le Fevre, Cornelius Du Bois, (2)	*Highland*,	1 Mech. Eng.
Lefferts, Edwin Boughton, (6)	*Gloversville*,	3 Mech. Eng.
Leffler, Leo Julius, (6)	*Brooklyn*,	3 Mech. Eng.
Legge, Robert Thomas, Ph.G., M.D., (1)	*McCloud, Calif.*,	Sp. Med.(N.Y.C.)

Lehman, George Robert, (2)	*Cincinnati, O.*,	1 Mech. Eng.
Lehman, Max, (6)	*Brooklyn*,	3 Med. (N. Y. C.)
Leighton, Arthur, (6)	*Brooklyn*,	3 Arts
Leighton, Henry, (8)	*Canandaigua*,	4 Arts
Leland, Emmons William, (6)	*Ithaca*,	3 Agriculture
Lemon, Burton Judson, (4)	*Bethel*,	2 Arts
Leon, Ricardo, (9)	*Oaxaca, Mexico*,	4 Mech. Eng.
Leonard, Elizabeth, (2)	*Genoa*,	2 Arts
Leonard, Edward Philip, (2)	*Brooklyn*,	1 Civil Eng.
Leonard, Ralph Emerson, (2)	*Elmira*,	1 Mech. Eng.
Leschen, William Frederick, (4)	*St. Louis, Mo.*,	2 Civil Eng.
Lesh, Karl Richard, (2)	*Washington, D. C.*,	Sp. Arts
Lester, Helen Marion, (2)	*Waverly*,	1 Arts
Levin, Samuel, (8)	*New York City*,	4 Med. (N. Y. C.)
Levitt, Charles Howard, (2)	*Brooklyn*,	1 Law
Levkowich, Harry James, (4)	*Paterson, N. J.*,	Jr. Law
Levy, Elsa Esther, (5)	*Williamsport, Pa.*,	4 Arts
Levy, Gretchen Rich, (2)	*Williamsport, Pa.*,	1 Arts
Levy, Lilly Zerline, (5)	*Williamsport, Pa.*,	4 Arts
Levy, Marcel Samuel, (2)	*Chicago, Ill.*,	1 Arts
Lewis, Charles Henry, (4)	*Ossining*,	2 Mech. Eng.
Lewis, Emma Massey, (4)	*Ithaca*,	Sp. Agriculture
Lewis, George Francis, (4)	*Patchogue*,	Jr. Law
Lewis, George William, (4)	*Scranton, Pa.*,	1 Mech. Eng.
Lewis, John Moore, (4)	*Elkhorn, W. Va.*,	2 Civil Eng.
Lewis, Ora Mabelle, A.B., (6)	*Lancaster, Mass.*,	3 Med. (N. Y. C.)
Lewis, Philip, (2)	*Pittsburg, Pa.*,	1 Law
Lewis, Watson, (4)	*Ithaca*,	2 Veterinary
Lex, Charles Edwyn, Jr., (2)	*Philadelphia, Pa.*,	1 Mech. Eng.
Libby, Luther Isaac, (7)	*Worcester, Mass.*,	2 Agriculture
Lichtenstein, Perry Maurice, (2)	*New York City*,	1 Med. (N. Y. C.)
Lichtenthaeler, Frank Edward, (7)	*Reading, Pa.*,	4 Arts
Licurse, Frank Domenico, (2)	*Inwood*,	1 Arts
Liebling, Philip, (4)	*New York City*,	2 Med. (N. Y. C.)
Limjap, Mariano Nicasio, (2)	*Manila, P.I.*,	1 Architecture
Lindorff, Theodore Julius, (4)	*Flushing*,	1 Arts
Lindsay, Wallace Blume, (4)	*Amsterdam*,	2 Mech. Eng.
Lindsley, Adrian Van Sinderen, (2)	*Nashville, Tenn.*,	1 Mech. Eng.
Lines, William Harry, (2)	*Rochester*,	1 Mech. Eng.
Link, Elsie, (2)	*Philadelphia, Pa.*,	1 Arts
Linsley, Charles Wells, (6)	*Oswego*,	3 Civil Eng.
Linton, Orlando Hayward, (6)	*Truro, N. S., Can.*,	4 Civil Eng.

Lintz, William, (8)	*New York City*,	4 Med. (N.Y.C.)
Liphshitz, Mark, (4)	*Brooklyn*,	2 Med. (N.Y.C.)
Lippincott, Roy Alstan, (2)	*Santa Barbara, Calif.*,	1 Architecture
Litchka, Karl Jacob, (1)	*Tonawanda*,	1 Mech. Eng.
Little, Elbert Warfield, (6)	*Ithaca*,	3 Veterinary
Livermore, Kenneth Carter, (4)	*Watertown, Mass.*,	2 Agriculture
Lix-Klett, Ernesto, (5)	*Buenos Aires, Arg. Rep.*,	3 Mech. Eng.
Lloyd, Eugene MacDonald, (2)	*Baltimore, Md.*,	1 Mech. Eng.
Lloyd, John Thomas, (2)	*Cincinnati, O.*,	Sp. Agriculture
Lockard, James Pierce, (2)	*Plymouth, Pa.*,	1 Mech. Eng.
Lockerby, Robert Archibald, (6)	*Montreal, Canada*,	4 Civil Eng.
Lodge, Richard Leslie, C.E., (2)	*Tuscaloosa, Ala.*,	Sp. Civil Eng.
Loeb, Lucien Samuel, (4)	*Montgomery, Ala.*,	2 Arts
Loegler, Frank Charles, (2)	*Buffalo*,	3 Arts
Lombard, José Oswald, (2)	*Central Hormiguero, Cuba*,	2 Mech. Eng.
Lombardo, Pedro, (2)	*Teziutlan, Puebla, Mexico*,	1 Civil Eng.
London, Julius, M.D., (10)	*New York City*,	Sp. Med. (N.Y.C.)
Long, Olive May, (4)	*Oswego*,	2 Arts
Longbothum, George Thornton, (8)	*Fort Salonga*,	3 Med. (N.Y.C.)
Loomis, Leroy Howard, (7)	*Cleveland, O.*,	3 Mech. Eng.
Lopez, Carlos, (4)	*Jaro, Iloilo, P. I.*,	2 Civil Eng.
Loudon, Anna Louisa, (6)	*Upper Troy*,	3 Arts
Lough, George Whitwell, (2)	*Hartwick*,	Sp. Agr.
Loughridge, Howard Reid, (2)	*Pittsburg, Pa.*,	1 Mech. Eng.
Louis, Henry Charles Ernest, A.B., (4)	*Baltimore, Md.*,	4 Mech. Eng.
Lounsbury, Clarence, (4)	*Barton*,	2 Agriculture
Love, Albert Joy, (4)	*Aurora, Ill.*,	1 Civil Eng.
Lovejoy, William Henry, (4)	*Buffalo*,	2 Mech. Eng.
Loveland, Daniel Arthur, (6)	*Windsor*,	3 Mech. Eng.
Lowry, Arthur Thompson, (6)	*Berwick, Pa.*,	3 Mech. Eng.
Lowthian, Walter Edward, (6)	*New York City*,	3 Med. (N.Y.C.)
Lubin, Harry, (4)	*New York City*,	1 Agriculture
Lucker, Frederick Luther, (2)	*Brooklyn*,	1 Mech. Eng.
Lucker, Grover, (6)	*Brooklyn*,	4 Mech. Eng.
Lucker, Harry Adolph, (4)	*Brooklyn*,	Jr. Law
Luke, Harry Cliff, Ph.G., (5)	*Salamanca*,	2 Medicine
Lum, Paul Bentley, (6)	*Washington, D. C.*,	3 Civil Eng.
Luna, Rafael Sotomayor, (2)	*Guayaquil, Ecuador, So. America*,	1 Mech. Eng.
Luttrell, James Nathaniel, (2)	*Falls Church, Va.*,	1 Law
Lyford, Percy Lang, (6)	*Waverly*,	4 Agriculture
Lynch, George Michael, (4)	*Andover*,	2 Med. (N.Y.C.)

Lynch, John Andrew, (2)	*Buffalo*,	1 Law
Lyndon, Sophie Harriet, (6)	*Fairport*,	4 Arts
Lynn, Laurence King, (4)	*Pittsburg, Pa.*,	4 Mech. Eng.
Lyon, Charles Albert, A.B., (8)	*East Orange, N. J.*,	4 Mech. Eng.
Lyon, Harold Hine, (4)	*Ellenville*,	1 Architecture
Lyon, Moncure Nelson, (2)	*Mt. Wilson, P. O., Md.*,	1 Mech. Eng.
Lytton, Walter, (4)	*Chicago, Ill.*,	2 Mech. Eng.
Mabee, Cecil Watkins, (8)	*Ithaca*,	4 Arts
McArthur, Mildred Sherwood, (2)	*North Troy*,	1 Arts
McArthur, Warren, Jr., (4)	*Chicago, Ill.*,	1 Mech. Eng.
McAuslin, David, (1)	*Brooklyn*,	2 Veterinary
McBride, Hesser Gilford, (2)	*Newark, N. J.*,	1 Med. (N.Y.C.)
McBride, Lida, (2)	*Ludlow, Ky.*,	4 Arts
McCabe, John Joseph, (2)	*Washington, D. C.*,	2 Civil Eng.
McCabe, Mary Elizabeth, (6)	*Brooklyn*,	3 Arts
McCarthy, Ellen S. (6)	*Cortland*,	3 Arts
McCarthy, Francis John, (3)	*Ithaca*,	2 Veterinary
McCarthy, Julia Frances, (1)	*Troy*,	1 Arts
McCarthy, Thomas Alfred, (6)	*Ithaca*,	3 Veterinary
McCaughey, Vaughan, (4)	*Greenville, O.*,	2 Agriculture
McCaully, William Henry, (3)	*Washington, D. C.*,	1 Civil Eng.
McChesney, Frank William, (2)	*Everett, Wash.*,	1 Mech. Eng.
McChristie, Minor Everette, (2)	*Camden, O.*,	1 Civil Eng.
McClellan, Clarence Stewart, Jr., (1)	*Mt. Vernon*,	1 Arts
McCloskey, Ervin, (2)	*Hamburg*,	1 Agriculture
McColl, James Macpherson, (1)	*No. Tonawanda*,	1 Arts
McCollum, Eugene Lawrence, LL.B., (1)	*Lockport*,	Sp. Arts
McCollum, Joseph Grant, (2)	*Youngstown*,	1 Mech. Eng.
McCombs, Carl Esselstyn, A.B., (2)	*Frankfort*,	1 Medicine
McConnell, Benjamin Stuart, (4)	*St. Joseph, Mich.*,	2 Mech. Eng.
McConnell, Harold Mead, (6)	*St. Joseph, Mich.*,	3 Mech. Eng.
McCook, George Wythe, Jr., (2)	*Steubenville, O.*,	1 Mech. Eng.
McCormick, Jay Gould, (2)	*Monongahela, Pa.*,	1 Civil Eng.
McCormick, Julia Wright, (2)	*Ithaca*,	1 Arts
McCormick, Mary Gertrude, (8)	*Monticello*,	4 Arts
McCoy, Charles Everett, (6)	*Smethport, Pa.*,	4 Arts
McCoy, Myra Long, (2)	*No. Tonawanda*,	1 Arts
McCurdy, Alexander Dales, (6)	*Philadelphia, Pa.*,	3 Mech. Eng.
McCutcheon, James, 2d, (2)	*Pittsburg, Pa.*,	1 Civil Eng.
Macdonald, Harold Gould, (6)	*Manitoba, Canada*,	3 Civil Eng.
McDougall, Eric Walter, (8)	*Montclair, N. J.*,	2 Mech. Eng.
McEveety Charles, (2)	*New York City*,	1 Med. (N.Y.C.)

McFadden, Benjamin Curtis, (4) *Chicago, Ill.*, 1 Mech. Eng.
McFarlan, Edward, (4) *Brooklyn*, 1 Mech. Eng.
McGee, Walter Vaughan, (3) *Plainfield, N. J.*, 1 Law
McGinnis, Ralph, (7) *Friendship*, 3 Veterinary
McGlone, John, A.B., (4) *Baltimore, Md.*, 4 Mech. Eng.
McGrath, John Francis, (4) *Holyoke, Mass.*, 2 Med. (N.Y.C.)
McHenry, John Joseph, (3) *Granville*, Jr. Law
McIntosh, Mary Lucinda, (6) *Locke*, 3 Arts
McIver, George Walter, B.S., (4) *Charleston, S. C.*, 1 Mech. Eng.
McKay, Andrew William, (2) *Ithaca*, 1 Agriculture
McKay, Charles Watson, (8) *Brooklyn*, 4 Mech. Eng.
McKay, Florence Lucinda, A.B., *Webster*, 3 Med. (N. Y. C.)
McKelvey, Joseph Vance, B.A., (2) *New Wilmington, Pa.*, 4 Arts
MacKinlay, Edward Scofield, Jr., (8) *Steamboat Springs, Colo.*, 4 Mech. Eng.
Mackintosh, Blanchard Mitchell, (6) *Halifax, N. S., Canada*, 3 Arch.
Mackintosh, Donald Chase, (6) *Holyoke, Mass.*, 2 Mech. Eng.
McKown, Howard Purcell, (2) *Allegheny, Pa.*, 1 Civil Eng.
McKown, William Reid, (6) *Pittsburgh, Pa.*, 3 Mech. Eng.
McLaren, Walter Austin, (8) *Brooklyn*, 4 Med. (N.Y.C.)
McLeod, Donald Fraser, (4) *Westville, N. S., Canada*, 3 Civil Eng.
McLeod, Norman McCallum, (6) *Philadelphia, Pa.*, 3 Mech. Eng.
McMaster, Martha Louise, (2) *Perry*, 1 Arts
McMillan, Hugh Gurney, (6) *East Aurora*, 3 Mech. Eng.
McMillan, Robert Dudley, (2) *East Aurora*, 1 Mech. Eng.
McNamara, Helen Catherine, (8) *Binghamton*, 4 Arts
McNamara, Paul James, (3) *Binghamton*, 1 Law
McNeill, Walter Harold, Jr., (2) *Mt. Vernon*, 1 Med. (N.Y.C.)
McNevins, John Alphonsus, (8) *New York City*, 4 Med. (N.Y.C.)
McPherson, Kenneth Ward, (2) *LeRoy*, 1 Civil Eng.
Macpherson, Leslie Mitchell, (4) *Balranald, N. S. W., Australia*, 3 Mech. Eng.
MacRae, Tom, (6) *New York City*, 3 Med. (N.Y.C.)
McSweeney, Jerome Augustine, (2) *New York City*, 1 Med. (N.Y.C.)
McTammany, Frances Loretta, (1) *Troy*, 1 Arts
McWhorter, Hugh Brooks, (6) *Ithaca*, 3 Mech. Eng.
Macy, Charles Leo, (1) *Tadmor, O.*, Sp. Agriculture
Macy, George Earl, (6) *Chicago, Ill.*, 3 Mech. Eng.
Madden, Bert Long, (2) *Wilkes-Barre, Pa.*, 1 Mech. Eng.
Madden, John Henry, (5) *Buffalo*, 2 Mech. Eng.
Madigan, Francis William, (6) *Centre Village*, 3 Civil Eng.
Magna, Joseph Nicholas, (4) *Holyoke, Mass.*, 3 Mech. Eng.

Magoffin, Charles Frederick, (6)	*North Tonawanda*,	2 Mech. Eng.
Magoon, Helen Cornelia, (2)	*Jamestown*,	1 Arts
Maider, Martha, (6)	*Phœnix*,	4 Arts
Main, Eugene Adams, (6)	*Brooklyn*,	3 Mech. Eng.
Maine, Clarence, (2)	*Summit, N. J.*,	1 Arts
Major, Horace Fairchild, (2)	*Ithaca*,	2 Agriculture
Malby, Seth Grant, (2)	*Ogdensburg*,	1 Mech. Eng.
Mallery, Lewis E, (4)	*Olean*,	2 Mech. Eng.
Mallett, Carlie Merritt, (2)	*Middletown*,	2 Arts
Mallison, Charles Henry, (6)	*Medina*,	3 Civil Eng.
Maloney, Alfred Joseph, (6)	*Ithaca*,	3 Veterinary
Maloney, Edgar William, B.A., (2)	*Canton*,	2 Civil Eng.
Mambert, Stephen Babcock, (2)	*Kingston*,	1 Civil Eng.
Mann, Charles Maitland, A.B., (6)	*New York City*,	3 Med. (N.Y.C.)
Mann, Charles William, (4)	*Pittsburgh, Pa.*,	1 Agriculture
Mann, David Farquhar, (6)	*Washington, D. C.*,	1 Mech. Eng.
Mann, Harvey Blaine, (7)	*Lewistown, Pa.*,	4 Mech. Eng.
Mannoccir, James Earle, B.A., (4)	*Memphis, Tenn.*,	2 Mech. Eng.
Manrow, Grosvenor Carlton, (2)	*Port Byron*,	Sp. Agriculture
Mansfield, Edward Raymond, B.S., (6)	*Orono, Me.*,	3 Med. (N.Y.C.)
Mantel, Frank Alphonse, (7)	*Auburn*,	4 Arts
Manulkin, George, (6)	*Brooklyn*,	3 Med. (N. Y. C.)
Manville, William Willett, (10)	*Newport News, Va.*,	2 Mech. Eng.
Marca-Romero, Manuel Antonio, (2)	*Lima, Peru*,	4 Mech. Eng.
Marcellus, Roy Clark, (4)	*North Adams, Mass.*,	1 Mech. Eng.
Margerum, Briton Albert, (9)	*Philadelphia, Pa.*,	4 Mech. Eng.
Markel, Edwin Clark, (4)	*Waterloo*,	Jr. Law
Markey, Edward Bond, (8)	*Eaton, O.*,	4 Med. (N.Y.C.)
Marks, Hyman Sanford, (6)	*Troy*,	3 Mech. Eng.
Marquina, Raphael, (2)	*Lima, Peru, S. A.*,	1 Architecture
Marschark, Max, (4)	*New York City*,	2 Med. (N.Y.C.)
Marsh, Edward Harvey, (2)	*Brooklyn*,	1 Med.(N.Y.C.)
Marsh, Reginald Edward, (8)	*Glens Falls*,	4 Architecture
Marshall, Charles William, (2)	*Pratts*,	1 Veterinary
Marshall, James Wallace, (4)	*Wilmerding, Pa.*,	2 Mech. Eng.
Marshall, William, (2)	*Yonkers*,	1 Mech. Eng.
Marsland, Walter Stanley, (4)	*Franklin*,	2 Arts
Marston, Sylvanus Boardman, (6)	*Pasadena, Calif.*,	3 Architecture
Martin, Annie Belle, (2)	*Dublin, Va.*,	Sp. Arts
Martin, Arthur Chalmers, (6)	*Rockville Centre*,	3 Med. (N.Y.C.)
Martin, Arthur Harold, A.B., (8)	*Cooperstown*,	4 Med. (N.Y.C.)
Martin, Caldwell, (6)	*Denver, Colo.*,	Sr. Law

Martin, Charles Edward, (2) *Worcester*, Sp. Agriculture
Martin, Harry Wheeler, (8) *Worcester*, 4 Arts
Martin, James Joseph, (2) *Atlantic Highlands, N. J.*, 1 Med. (N.Y.C.)
Martin, Jennie Melissa, (6) *Binghamton*, 3 Arts
Martin, Joseph Sweet, (2) *Binghamton*, 1 Arts
Martin, Mabel Agnes, (4) *Binghamton*, 2 Arts
Martin, Paris, (4) *Idaho Falls, Idaho*, Jr. Law
Martin, Thomas, Jr., (4) *Belleville, N. J.*, 2 Civil Eng.
Martinez, Carlos, B.S. in Nat. Sci., (1)
Arequipa, Peru, S. A., 1 Mech. Eng.
Martinez, Christobal Antonio, (6) *Hornos, Coah, Mexico*, 3 Civil Eng.
Martinez y Martinez, Isaac Francisco, (7)
Mayagüez, Porto Rico, Sr. Law
Maslon, Morris, (2) *New York City*, 1 Med. (N.Y.C.)
Mason, Arthur John Jr., (1) *Chicago, Ill.*, 1 Arts
Mason, Harry Mills, Jr., (2) *Baltimore, Md.*, 2 Mech. Eng.
Mason, Low Ray, (1) *Idaho Falls, Idaho*, Sp. Mech. Eng.
Mason, Norman Clifford, (1) *Highland, Park, Ill.*, 1 Arts
Mason, William Henry, B.Sc., (2)
Sydney, N. S. W., Australia, 3 Mech. Eng.
Masterson, Wilmer Dallam, (6) *Galveston, Tex.*, 4 Mech. Eng.
Matheson, Robert, (2) *West River, N. S., Canada*, 3 Agriculture
Matthews, Hubert Willard, B.S., (4) *Blackville, S. C.*, 4 Mech. Eng.
Matthews, Robertson, (6) *Bolton, Ont., Can.*, 3 Mech. Eng.
Mattick, Walter Lester, (4) *Buffalo*, 2 Arts
Matty, Frank Joseph, C.E., (2) *Denver, Colo.*, 1 Mech. Eng.
Mauer, William John, (2) *Buffalo*, 1 Civil Eng.
Maughan, Allan, (4) *Neutral Bay, Sydney, Australia*, 4 Mech. Eng.
Maxwell, Donald Price, (6) *Georgetown, Colo.*, 3 Civil Eng.
Mayer, Edwin Charles, (2) *Brooklyn*, 1 Arts
Maynard, Henry Warner, (4) *Washington, D. C.*, 3 Civil Eng.
Mayo, Geoffrey Wainman, (6) *Smethport, Pa.*, 3 Civil Eng.
Mazer, Jacob, (5) *Allegheny, Pa.*, 1 Civil Eng.
Mead, Theodore Fletcher, (4) *Morrisville*, 2 Arts
Meeker, Robert Levern, (4) *McDonough*, Sp. Agriculture
Meichner, Frederick Henry, (2) *New York City*, 1 Med. (N.Y.C.)
Meinell, John Bradford, (2) *New York City*, 1 Mech. Eng.
Meissner, Scott Thadeus, (9) *Erie, Pa.*, 4 Mech. Eng.
Mellen, Stanley Henry, (4) *Windham*, 2 Arts
Mellon, Max Pattison, (1) *Pittsburg, Pa.*, 2 Civil Eng.
Mellor, Alfred Carlos, Jr., (2) *New York City*, 1 Civil Eng.
Mellowes, Alfred Witherman, (7) *Dayton, O.*, 4 Mech. Eng.

Melvin, Carroll Loomis, (9)	*Bradford, Pa.*,	1 Mech. Eng.
Mendalis, Morris, (4)	*Brooklyn*,	2 Med. (N. Y. C.)
Mennen, William Gerhard, (4)	*Newark, N. J.*,	2 Mech. Eng.
Menough, Paul Simpson, (4)	*Wellsville, O.*,	3 Mech. Eng.
Merrick, Edgar Hamilton, (4)	*Gouverneur*,	2 Mech. Eng.
Merrihew, Leland Alric Houghton, (2)	*Plattsburg*,	1 Mech. Eng.
Merrill, Edward Francis, (2)	*New Rochelle*,	1 Mech. Eng.
Merry, Albert Edmund, (6)	*Syracuse*,	3 Veterinary
Merry, Horatio Seymour, (2)	*Verona*,	Sp. Agriculture
Mertz, Edna Lenora, (4)	*Sedalia, Mo.*,	1 Arts
de Mesa, Hannibal, (1)	*New York City*,	1 Arts
Messersmith, Wesley Martin, (4)	*New York City*,	2 Med. (N.Y.C.)
Mettee, Carroll Russell, (2)	*Baltimore, Md.*,	2 Mech. Eng.
Metzger, Harold Nuhn, (6)	*Buffalo*,	2 Civil Eng.
Meyer, Henry Edward Berthold, (6)	*Brooklyn*,	3 Med. (N. Y. C.)
Michie, LeRoy Hewlings, (2)	*Chicago, Ill.*,	1 Civil Eng.
Middleditch, Lyman, (9)	*South Orange, N. J.*,	4 Mech. Eng.
Midwood, Henry Hazard, (4)	*Barrington R. I.*,	3 Arts
Miles, Hamilton Vincent, (4)	*Baltimore, Md.*,	1 Civil Eng.
Miles, John James, (2)	*Penn Yan*,	1 Mech. Eng.
Milford, Leslie Russell, (2)	*Skaneateles*,	1 Arts
Miller, Daniel, (2)	*Reading, Pa.*,	1 Arts
Miller, Emma Adams, (6)	*Shamokin, Pa.*,	3 Arts
Miller, George Harvey, (2)	*Buffalo*,	1 Agriculture
Miller, Henry Joseph, (6)	*Washington, D. C.*,	3 Mech. Eng.
Miller, John Fred, (6)	*Warsaw*,	3 Veterinary
Miller, Mary Belle, (4)	*Homer*,	2 Arts
Miller, Sereno Glassell, (4)	*Freeport*,	2 Mech. Eng.
Miller, William Henry, (1)	*Newark*,	Sp. Agriculture
Millott, Henry Christopher, (4)	*Sandusky, O.*,	Sp. Architecture
Mills, James Evan, (2)	*Waterloo*,	1 Mech. Eng.
Miltimore, Louise Salisbury, (2)	*Catskill*,	1 Arts
Minton, Ogden, (4)	*Brooklyn*,	2 Mech. Eng.
Mintz, Jay Jerome, (7)	*Ithaca*,	3 Mech. Eng.
Mitchell, Edwin Wells, (2)	*Cincinnati, O.*,	1 Agriculture
Mitchell, James Reid, Jr., A.B., (4)	*New York City*,	2 Medicine
Mitchell, Ray Verne, (4)	*Buffalo*,	Jr. Law
Mitchell, William Churchill, (2)	*Charlestown, W. Va.*,	Sp. Mech. Eng.
Mitchell, Walter R, M.E., (4)	*LaPlata, Md.*,	4 Mech. Eng.
Mitler, Herbert Ernest, (4)	*New York City*,	2 Mech. Eng.
Mix, Rhoda Grace, (2)	*Chenango Forks*,	1 Arts

Moeller, Henry Louis, (6)	*Hoboken, N. J.*,	3 Civil Eng.
Moffett, Mattie Charlotte, (2)	*Middletown*,	1 Arts
Monk, Percy Shelley, (2)	*Sloansville*,	1 Mech. Eng.
Monrad, Karen Elise, (6)	*New York City*,	3 Arts
Monrad, Karl Johan, (4)	*New York City*,	3 Arts
Monroe, Ralph Russell, (2)	*Sandy Hill*,	1 Law
Montague, Charles Eugene, (2)	*Syracuse*,	1 Mech. Eng.
Montgomery, Dudley, (8)	*New York City*,	4 Mech. Eng.
Montillon, Eugene David, (6)	*Buffalo*,	3 Architecture
Moody, George Harold, (2)	*Canton, Pa.*,	Sp. Agriculture
Mooers, John Hooker, (4)	*Plattsburgh*,	Jr. Law
Moore, Edna Florence, (2)	*Erie, Pa.*,	Sp. Arts
Moore, James Terence, (2)	*Elmira*,	1 Arts
Moore, Kingman Colquitt, B.S., (2)	*Macon, Ga.*,	Sp. Agriculture
Moore, William Alexander, (2)	*New York City*,	1 Mech. Eng.
Moores, Merrill Bruce, B.S., (2)	*Salem, Ore.*,	3 Mech. Eng.
Moorman, Silas Mercer, A.B., (4)	*Georgetown, Ky.*,	2 Medicine
Moorman, William Glass, (4)	*Buffalo*,	2 Mech. Eng.
Morehouse, David Page, Jr., (6)	*Oswego*,	Sr. Law
Morehouse, Walter Gould, (5)	*Briarcliffe Manor*,	2 Veterinary
Morgan, Anna Haven, (4)	*New London, Conn.*,	4 Arts
Morgan, Frank Millett, (2)	*New York City*,	1 Arts
Morgan, William Conant, B.S., (4)	*Plainfield, N. J.*,	4 Mech. Eng.
Morgans, Howard K, (6)	*Christopher, Pa.*,	3 Civil Eng.
Morgenstern, Morris, (6)	*McKeesport, Pa.*,	2 Mech. Eng.
Morgenstern, William Clarence, (2)	*Allegheny, Pa.*,	1 Mech. Eng.
Morrell, Robert Whiting, (2)	*Northport*,	1 Mech. Eng.
Morris, William Harley, (2)	*Brooklyn*,	1 Civil Eng.
Morrow, Homer Nicholas, A.B., (2)	*Clarksville, Tenn.*,	1 Mech. Eng.
Morse, Albert Withers, (4)	*New York City*,	2 Mech. Eng.
Morse, Hazen H, (2)	*New Rochelle*,	2 Arts
Morse, William Joseph, (6)	*Lowville*,	3 Agriculture
Mortimer, Charles Ward, B.S., (4)	*Winona, Miss.*,	3 Mech. Eng.
Mosher, Edna, (2)	*Kempt Shore, N. S., Canada*,	2 Agriculture
Mosher, George, (4)	*New York City*,	2 Med. (N.Y.C.)
Mosher, George Fred, (4)	*Kansas City, Mo.*,	4 Arts
Mosher, Guy Walter, (6)	*Cold Spring*,	3 Mech. Eng.
de la Motte, James Francis, (2)	*New York City*,	1 Med. (N.Y.C.)
Mounce, Robert Sydney, (2)	*Hornellsville*,	1 Mech. Eng.
Mowat, John Frederic, A.B., (3)	*Peoria, Ill.*,	4 Mech. Eng.
Mueller, Curt Berthold, (6)	*Cleveland, O.*,	4 Arts
Mueller, Fred Jacob, (8)	*Los Angeles, Calif.*,	3 Civil Eng.

Muenz, Sigmund, B.S., (3)	*New York City*,	4 Civil Eng.
Muenzenberger, Charles John, (4)	*Meadville, Pa.*,	2 Architecture
Mull, James Martin, (2)	*Jeannette, Pa.*,	1 Mech. Eng.
Muller, Henry Richard, (2)	*New York City*,	1 Arts
Mulligan, Charles Lawrence, (6)	*Brooklyn*,	3 Arts
Munden, Ralph, (4)	*Allegheny, Pa.*,	4 Mech. Eng.
Munschauer, Frederick Eugene, (6)	*Buffalo*,	3 Mech. Eng.
Munson, David Curtiss, (8)	*Medina*,	4 Arts
Munson, William Howes, (2)	*Medina*,	1 Law
Muramatsu, Toyokishi, (1)	*Tokyo, Japan*,	1 Architecture
Murchie, Percy, (8)	*Brooklyn*,	4 Arts
Murphy, James Douglas, (4)	*Girard, Pa.*,	Jr. Law
Murphy, John Harold, (6)	*Detroit, Mich.*,	3 Arts
Murphy, Leo Francis, (2)	*Detroit, Mich.*,	1 Mech. Eng.
Murray, Clare D, (6)	*De Ruyter*,	3 Civil Eng.
Murray, Genevieve Elizabeth, (2)	*Ithaca*,	1 Arts
Murray, Mathias Patrick, (2)	*Elmira*,	1 Mech. Eng.
Murray, Morrison Foster, (4)	*Brooklyn*,	2 Med. (N.Y.C.)
Murray, Nathaniel Allison, (2)	*Washington, D. C.*,	Sp. Agriculture
Mussi, Angelo Peter, (4)	*Auburn*,	2 Civil Eng.
Myer, George Warren, (2)	*Ovid Centre*,	Sp. Agriculture
Myers, Edmund, (2)	*Boston, Mass.*,	2 Med (N.Y.C.)
Myers, Harry William, (2)	*So. Livonia*,	Sp. Agriculture
Nadoolman, Max, (4)	*Brooklyn*,	2 Med. (N.Y.C.)
Nasmyth, George William, (6)	*Buffalo*,	4 Arts
Natanson, Walter Edward, (2)	*Holyoke, Mass.*,	1 Civil Eng.
Nauss, George Murray, (5)	*Harrisburg, Pa.*,	2 Mech. Eng.
Neale, Harry Taylor, (2)	*Harrisburg, Pa.*,	1 Mech Eng.
Neary, James Eugene, (8)	*Ithaca*,	4 Mech. Eng.
Nedham, Stanley Cromwell, (4)	*Perth Amboy, N. J.*,	1 Mech. Eng.
Neilson, George William, (8)	*Philadelphia, Pa.*,	4 Mech. Eng.
Neish, Leon Duncen, (1)	*Shavertown*,	Sp. Agriculture
Nelbach, George Joseph, A.B., (2)	*Utica*,	Jr. Law
Nelligan, Walter, (6)	*Ithaca*,	3 Veterinary
Nelson, Elbert James, (6)	*Delaware, O.*,	3 Civil Eng.
Nelson, Harry Merton, (4)	*East Ryegate, Vt.*,	2 Civil Eng.
Newcomb, Robert Cook, (8)	*Whitehall*,	4 Mech. Eng.
Newcomb, Robert Everett, (6)	*Holyoke, Mass.*,	3 Mech. Eng.
Newcomb, Robert Scott, B.S., (2)	*Savannah, Ga.*,	3 Mech. Eng.
Newhall, John, (4)	*Glencoe, Ill.*,	3 Agriculture
Newkirk, Clement Roy, (6)	*Brooklyn*,	3 Architecture

Newman, Abraham Jacob, (2)	*Tarrytown*,	1 Med. (N. Y. C.)
Newman, Leander Allison, (4)	*Penn Yan*,	2 Medicine
Newman, William Seymour, (5)	*Ithaca*,	2 Veterinary
Newton, James Quigg, (4)	*Denver, Colo.*,	Jr. Law
Neyhart, Lulu Ina, (2)	*Auburn*,	1 Arts
Nichols, Clayton Worthington, Jr., (8)	*Camden, N. J.*,	4 Mech. Eng.
Nichols, De Witt Lethbridge, (2)	*Aurora, Ill.*,	1 Civil Eng.
Nichols, Edson Hoyt, (4)	*Camden, N. J.*,	2 Arts
Nichols, Robert Preston, (8)	*Ithaca*,	4 Arts
Nichols, William Holmes, (6)	*Chicago, Ill.*,	3 Mech. Eng.
Nickerson, Charles Willis, (8)	*Stony Point*,	2 Mech. Eng.
Nickerson, Ralph Richard, (5)	*Holyoke, Mass.*,	2 Mech. Eng.
Nightingale, Lionel Grenelle, (6)	*Brooklyn, N. Y.*,	3 Mech. Eng.
Niles, William Nathanel, (2)	*W. Oneonta*,	1 Civil Eng.
Nill, Joseph Henry, (1)	*Philadelphia, Pa.*,	1 Medicine
Nitchie, Francis Raymond, (4)	*Evanston, Ill.*,	4 Arts
Nobis, Walter Scott, (4)	*New York City*,	2 Arts
Nobles, Jennie Bronson, (4)	*Swartwood*,	2 Arts
North, Harold Diodate, (6)	*Cleveland, O.*,	2 Mech. Eng.
Northrop, Mary Margaret, (2)	*Hannover, Germany*,	1 Arts
Northrup, Grace Irene, (6)	*Ellicottville*,	3 Arts
Norton, George Robinson, (4)	*Friendship*,	1 Mech. Eng.
Nourse, Edwin Griswold, (5)	*Downers Grove, Ill.*,	4 Arts
Novik, Peter Mathaus, (2)	*Christiania, Norway*,	Sp. Agriculture
Noyes, Nicholas Hartman, (8)	*Dansville*,	4 Arts
Nuese, Harry Lawrence, (6)	*Buffalo*,	Sr. Law
Nugent, Harold Arthur, (6)	*Kingston, Pa.*,	2 Mech. Eng.
Nussbaum, Fred Louis, (6)	*Apple Creek, O.*,	4 Arts
Oberly, Robert Shimer, (4)	*Easton, Pa.*,	2 Mech. Eng.
Oberndorf, Clarence Paul, A.B., (8)	*New York City*,	4 Med. (N.Y.C.)
Obert, Asa Joseph, (5)	*Lehighton, Pa.*,	1 Civil Eng.
O'Brien, John Joseph, (6)	*Buffalo*,	2 Mech. Eng.
O'Brien, Julia Theresa, (2)	*Utica*,	1 Arts
O'Brien, Paul, (4)	*Pittsburg, Pa.*,	2 Medicine
Ochs, Alfred Long, (2)	*Allentown, Pa.*,	1 Civil Eng.
Odend'hal, Charles Joseph, (4)	*Baltimore, Md.*,	3 Mech. Eng.
Oderkirk, Charles Clayton, (4)	*Batavia*,	1 Veterinary
Ogden, Horace Sansbury, (6)	*Washington, D. C.*,	4 Arts
Ogier, George Rufus, (6)	*Baltimore, Md.*,	1 Civil Eng.
Ogle, Harold Robert, (2)	*Washington, D. C.*,	Sp. Agri.
O'Hara, William Leo, (2)	*Binghamton*,	1 Arts
Olds, Thomas Hartman, B.S., (2)	*Purcell, Ind. Terr.*,	2 Civil Eng.

Olitsky, Peter Kosciusko, (2)	*New York City*,	1 Med. (N.Y.C.)
Oliver, Clifford Rylander, A.B., (4)	*Plains, Ga.*,	2 Mech. Eng.
O'Neil, Fred Ernest, (2)	*Malone*,	1 Mech. Eng.
O'Neill, Charles Leo, A.B., (4)	*Newark, N. J.*,	2 Med. (N.Y.C.)
Orahood, George Hurlbut, (2)	*Denver, Colo.*,	1 Architecture
Orcutt, Daniel Paul, (2)	*Granville, O.*,	2 Mech. Eng.
O'Reilly, Francis Sheridan, (2)	*Utica*,	1 Civil Eng.
O'Rouke, Bernard John, (2)	*Syracuse*,	1 Civil Eng.
Orr, Chester Andrew, B.S. in M'n'g Eng , (1)	*Willoughby, O.*,	3 Civil Eng.
Orsburn, Roy, (2)	*Sebree, Ky.*,	4 Arts
Orth, Rudolph Daniel, (2)	*Blauvelt*,	1 Med. (N. Y. C.)
Ortiz de Zevallos, Emilio, (6)	*Lima, Peru, S. A.*,	4 Agriculture
Ortiz de Zevallos, Fernando, (2)	*Lima, Peru, S. A.*,	Sp. Agr.
Orvis, Warner Dayton, (8)	*New York City*,	4 Mech. Eng.
Osborn, William Miller, (2)	*New Hartford*,	Sp. Agriculture
Osburn, Clarence De Witt, (2)	*Ithaca*,	1 Civil Eng.
Osgood, Albert Kendrick, (3)	*Herkimer*,	1 Mech. Eng.
Osmun, Leland Stanford, (2)	*Delaware, N. J.*,	1 Law
Ostby, Raymond Engelhart, (8)	*Providence, R. I.*,	3 Mech. Eng.
Ostos, José Antonio, (6)	*Ozuluama, Vera Cruz, Mexico*,	1 Mech. Eng.
Otto, Henry Stuart, (6)	*Montclair, N. J.*,	2 Mech. Eng.
Ourand, William Ralph, (2)	*Washington, D. C.*,	1 Civil Eng.
Overbaugh, Ethel May, (4)	*Amsterdam*,	2 Arts
Owen, Charles Hundley, (4)	*Denniston, Va.*,	3 Mech. Eng.
Owen, Frank Gilchrist, (2)	*Eau Claire, Wis.*,	1 Law
Owens, Robert Stuart, (4)	*Brooklyn*,	2 Arts
Owens, Wallace Ladd, (2)	*Utica*,	1 Civil Eng.
Paaswell, George, (4)	*New York City*,	2 Civil Eng.
Pabst, Charles Frederick, (2)	*New York City*,	1 Med. (N.Y.C.)
Paddock, Ormond Howland, (6)	*Toledo, O.*,	2 Mech. Eng.
Page, Kenneth Andrew, (4)	*Athens, Pa.*,	2 Mech. Eng.
Page, Raymond Esek, (2)	*Hornellsville*,	1 Arts
Page, Thomas Newton, (4)	*Norfolk, Va.*,	Jr. Law
Page, Wilson Kingman, (2)	*Olean*,	1 Mech. Eng.
Pagliery, Joseph Juaquin Cecilio, (2)	*New York City*,	2 Agriculture
Paine, Henry Ellsworth, (7)	*Cleveland, O.*,	4 Mech. Eng.
Palma, Tomas Estrada, (5)	*Havana, Cuba*,	2 Civil Eng.
Palmer, Charles Warner, (6)	*Media, Pa.*,	4 Arts
Palmer, Everett Arthur, (2)	*El Dorado, Kansas*,	1 Mech. Eng.
Palmer, Everett Charles, (2)	*Hornellsville*,	2 Civil Eng.
Palmer, George Hollis, (6)	*Brooklyn*,	3 Med. (N. Y. C.)

Palmer, Henry Oliver, (6)	*Geneva*,	3 Mech. Eng.
Palmer, Lawrence Achel, (4)	*South Hamilton*,	2 Veterinary
Palmer, T Raymond, (6)	*Ithaca*,	3 Civil Eng.
Pangborn, Robert Garrett, (2)	*Baltimore, Md.*,	2 Mech. Eng.
Parce, Donald Higbie, (2)	*Fairport*,	2 Mech. Eng.
Park, David William, (6)	*New York City*,	2 Med. (N.Y.C.)
Parker, Carl William, (4)	*Glens Falls*,	2 Arts
Parker, Esther Emily, A.B., (6)	*New York City*,	3 Med. (N.Y.C.)
Parker, George Milford Calvin, (4)	*Moscow*,	Jr. Law
Parker, James Wentworth, (4)	*Louisville, Ky.*,	2 Mech. Eng.
Parker, John Robert, (4)	*Aqueduct*,	Jr. Law
Parmley, Harry Mark, (6)	*Mahanoy City, Pa.*,	3 Mech. Eng.
Parrish, Justin E, Jr., (2)	*Scranton, Pa.*,	1 Agriculture
Paskett, Winifred Llewellyn, (6)	*Palmyra*,	3 Arts
Patterson, Charles Judson, (6)	*Parma*,	3 Civil Eng.
Patten, Harry Allen, (6)	*Cheyenne, Wyo.*,	3 Civil Eng.
Patterson, Gus Harold, (6)	*Mansfield, O.*,	2 Mech. Eng.
Patterson, Lucius Lamar, A.B., A.M., (6)	*Hebron, Miss.*,	4 Mech. Eng.
Patterson, Willson Howell, (2)	*Devon, Pa.*,	1 Arts
Patton, William Fearn, Jr., A.B., (6)	*Danville, Va.*,	4 Mech. Eng.
Paulus, Roy, (4)	*New York City*,	2 Civil Eng.
Payne, Charles Rockwell, A.B., (8)	*Wadhams Mills*,	4 Med. (N.Y.C.)
Payne, Edward Duggan, C.E., (2)	*Athens, Pa.*,	3 Mech. Eng.
Pearce, Charles Darius, (2)	*Pawling*,	1 Veterinary
Pearce, Frederick Kingsley, (4)	*Brooklyn*,	2 Mech. Eng.
Pearce, George Clifford, (2)	*Chicago, Ill.*,	1 Mech. Eng.
Pease, George Norman, A.B., (6)	*Portland, Ore.*,	3 Med. (N.Y.C.)
Pease, Harry Windsor, (2)	*Cortland*,	1 Mech. Eng.
Peavey, Harris Booge, (6)	*New York City*,	3 Mech. Eng.
Peck, Fred Eldred, (7)	*Wolfville, N. S., Can.*,	1 Agriculture
Peck, Howard, (7)	*East Orange, N. J.*,	4 Arts
Peck, Percival Starr, (4)	*Yonkers*,	1 Mech. Eng.
Peek, Frederic Albert, (4)	*Orchard Park*,	3 Arts
Peer, Samuel Sherman, (8)	*Ithaca*,	Sr. Law
Peirce, Clarence Andrew, (4)	*Ithaca*,	3 Arts
Peirson, Jessie Burnham, (6)	*Ithaca*,	4 Arts
Pennell, Amos Gartside, (3)	*Chester, Pa.*,	1 Arts
Pennell, Hannah Sharpless, (6)	*Wawa, Pa.*,	4 Arts
Perkins, Charles Taber, (4)	*Cazenovia*,	Sp. Agriculture
Perky, Scott Hancock, (8)	*Ithaca*,	4 Agriculture
Perrine, Henry Ivey, (6)	*Brooklyn*,	3 Arts
Perrine, Irving, (6)	*Wallkill*,	3 Arts

Perry, Leslie Donald, A.B., (2)	*Brookline, Mass.*,	3 Mech. Eng.
Persons, James White, (7)	*East Aurora*,	Sr. Law
Petear, Freida Helene, (2)	*Brooklyn*,	Sp. Med. (N.Y.C.)
Peters, Frederic Hallock, (8)	*Binghamton*,	4 Arts
Peterson, Amos Gale, (2)	*Lodi*,	1 Mech. Eng.
Peterson, Charles Gilbert, (8)	*Lockport*,	1 Mech. Eng.
Peterson, John Bogart, (3)	*Lodi*,	1 Civil Eng.
Petit, Charles Wesley, B.S., (2)	*Oxnard, Calif.*,	Sp. Civil Eng.
Petrie, Samuel Leys, (2)	*North Tonawanda*,	1 Arts
Pew, Joseph Newton, (4)	*Pittsburg, Pa.*,	2 Mech. Eng.
Peyton, Gilbert Small, Jr., (1)	*Philadelphia, Pa.*,	1 Civil Eng.
Phelan, James, A.B., (2)	*Washington, D. C.*,	1 Mech. Eng.
Phelps, Harry Perry, (2)	*Oswego*,	1 Mech. Eng.
Philbrick, Frank Herbert, (6)	*Waterville, Me.*,	3 Mech. Eng.
Philips, Joseph Bond, (8)	*Kennett Square, Pa.*,	2 Mech. Eng.
Phillips, Henry Ormsby, (6)	*Pittsburg, Pa.*,	2 Mech. Eng.
Phillips, John Morgan, (2)	*Anacostia, D. C.*,	Sp. Agriculture
Phipps, Maurice Bowman, (1)	*Chelsea, Mass.*,	1 Law
Phipps, William Giles, (2)	*Mount Vernon*,	1 Medicine
Pierce, George Curtis, (2)	*Chattanooga, Tenn.*,	1 Civil Eng.
Pierce, Howard Castner, (2)	*Worcester, Mass.*,	1 Agriculture
Pierce, Homer Jay, (2)	*Rock Rapids, Iowa*,	3 Arts
Pierce, Harold Spalding, (4)	*Syracuse*,	2 Arts
Pierce, Paul Leon, B.S., (8)	*Chattanooga, Tenn.*,	4 Civil Eng.
Pierce, William Edward, (10)	*Newburyport, Mass.*,	4 Mech. Eng.
Pierson, Farrand Baker, A.B., (3)	*Brooklyn*,	Sp. Med. (N.Y.C.)
Pinckney, Harry Milton, (2)	*Arlington*,	Sp. Agriculture
Pinner, Seymour William, (4)	*New York City*,	2 Mech. Eng.
Piollet, Thomson Wierman, (2)	*Wysox, Pa.*,	1 Civil Eng.
Piper, John Stryker, (2)	*Catawba*,	1 Mech. Eng.
Pitkin, William, Jr., (2)	*Rochester*,	Sp. Agriculture
Pitzman, Harold Wislizenus, (9)	*St. Louis, Mo.*,	4 Civil Eng.
Placek, Louis Joseph, (8)	*New York City*,	4 Med. (N.Y.C.)
Plumb, Maurice William, (2)	*Malone*,	1 Mech. Eng.
Poate, Ernest Marsh, (10)	*Rushford*,	4 Med. (N.Y.C.)
Pochet, Henri Pierre, (4)	*Verneuil sur Avre, France*,	Sp. Agriculture
Poetzsch, Alexander James, (4)	*New York City*,	1 Civil Eng.
Polk, Leroy Vanderpool, (4)	*Poughkeepsie*,	2 Veterinary
Pollak, Julian Albert, (6)	*Cincinnati, O.*,	3 Arts
Ponce de Leon, Felipe, A.B., (2)	*Habana, Cuba*,	1 Civil Eng.
Pons, Francisco, (2)	*San Juan, Porto Rico*,	1 Civil Eng.
Pooley, Thomas Rickett, Jr., (6)	*New York City*,	3 Med. (N.Y.C.)
Popplewell, Laura Augusta, (6)	*Ithaca*,	3 Arts

Porter, Floyd John, B.S.A., (1)	*Ithaca*,	4 Arts
Porter, Percy Waterman, (6)	*West Hartford, Conn.*,	3 Civil Eng.
Porterie, Gaston Louis, B.S., (1)	*Mansura, La.*,	3 Civil Eng.
Postel, Fritz Andrew, (4)	*Davenport, Ia.*,	2 Mech. Eng.
Potts, Abbie Findlay, (8)	*Troy*,	4 Arts
Powell, Franklin Guiteau, (4)	*Holland Patent*,	Sp. Agriculture
Powell, Milton Charles, (5)	*Canisteo*,	Jr. Law
Powers, Ray Rivington, (4)	*Atlanta, Ga.*,	3 Arts
Pradez, Luiz, (1)	*Rio Janeiro, Brazil*,	1 Mech. Eng.
Pratt, Avery Judson, (2)	*Springville*,	1 Civil Eng.
Pratt, David Shepard, (4)	*Towanda, Pa.*,	2 Arts
Pratt, James Gibbs, (2)	*Sherman*,	1 Arts
Pratt, Reginald, (2)	*Valley Falls*,	1 Mech. Eng.
Preston, Mary Reynolds, (2)	*Amenia*,	1 Arts
Preston, Neil DeForest,(4)	*Brooklyn*,	2 Mech. Eng.
Preston, Sylvester Cosgrave, (8)	*Pittsburg, Pa.*,	4 Mech. Eng.
Previn, Charles, (2)	*New York City*,	1 Arts
Preyer, Albert Paul, (4)	*Cincinnati, O.*,	2 Arts
Price, Adelbert J, (8)	*Dundee*,	4 Med. (N.Y.C.)
Price, Daniel Bertsch, (1)	*Hazleton, Pa.*,	1 Civil Eng.
Price, Daniel J, M.D., (2)	*Newark, O.*,	Sp. Med. (N.Y.C.)
Price, Dorr C, (2)	*Batavia*,	1 Arts
Price, Philip M, (6)	*Johnstown, Pa.*,	2 Mech. Eng.
Price, William Tudor, (6)	*Buffalo*,	Sp. Mech. Eng.
Prince, Alice Louise, (8)	*Vineland, N. J.*,	4 Arts
Prince, Horace Free, (6)	*Bloomington, Ill.*,	3 Agriculture
Prince, Howard Love, (7)	*Byron*,	3 Med. (N.Y.C.)
Pritchett, Eliza Esther, (4)	*Walbrook, Md.*,	2 Arts
Proctor, Kate Pamelia, (2)	*Rushford*,	1 Arts
Prophet, John Mayhew, Jr., (2)	*Mt. Morris*,	1 Arts
Provost, Sara Davis, (2)	*Port Chester*,	1 Arts
Prucha, Joseph Vit, (4)	*Cleveland, O.*,	2 Veterinary
Prussing, Harry Frederick, (2)	*Chicago, Ill.*,	1 Mech. Eng.
Pullin, Arthur Ward, (2)	*Newark, N. J.*,	Sp. Agriculture
Putnam, Henry Sibley, (2)	*Chicago, Ill.*,	3 Arts
Quarles, Tev Randolph, B.M.E., (2)	*Portland, Ore.*,	4 Mech. Eng.
Queen, Hallie Elvera, (4)	*Washington, D. C.*,	1 Agriculture
Quinn, Patrick John, (5)	*Oswego*,	2 Medicine
Quirin, Ethel Blanche, (2)	*Olean*,	1 Arts
Quisumbing, Emilio, B.A., (4)	*Washington, D. C.*,	2 Civil Eng.
Rabinowitz, Harold Max, (4)	*Brooklyn*,	2 Med. (N.Y.C.)
Rabinowitz, Meyer Alfred, (6)	*Brooklyn*,	3 Med. (N.Y.C.)

Radley, Hermon Clinton, (6)	*Lowville*,	2 Arts
Radley, Walter Leeworthy, (4)	*Albion*,	2 Mech. Eng.
Ramage, William Colin Haig, (2)	*Mt. Carmel, Pa.*,	1 Civil Eng.
Rand, Elsie Fidelia, (6)	*Brooklyn*,	3 Arts
Rand, Marie Gertrude, (4)	*Brooklyn*,	2 Arts
Rand, Walter Edwards, (4)	*Brooklyn*,	2 Veterinary
Rankin, George Atwater, (6)	*Ithaca*,	3 Arts
Ransom, Pearl Euphema, (2)	*Ithaca*,	1 Arts
Rapley, William Batchelor, (4)	*Washington, D. C.*,	2 Mech. Eng.
Rapuzzi, John, (3)	*Ithaca*,	1 Civil Eng.
Rasmason, H Lewis, (2)	*Provo, Utah*,	Sp. Mech. Eng.
Rassbach, Erich Carl, (6)	*Milwaukee, Wis.*,	4 Mech. Eng.
Rathbun, Roy Edgar, (1)	*Cincinnatus*,	Sp. Agriculture
Rathbun, Sherrill Slade, (2)	*Oneonta*,	1 Arts
Rathgeber, Charles Frederick, (4)	*Newark, N. J.*,	1 Med. (N.Y.C.)
Ratnoff, Hyman Leon, (8)	*New York City*,	4 Med. (N.Y.C.)
Ray, Anna Elizabeth, A.B., A.M., (8)	*New York City*,	4 Med. (N.Y.C.)
Raynor, Francis Ketcham, (6)	*Sag Harbor*,	3 Arts
Rawson, Forrest Henry, (3)	*Glens Falls*,	2 Civil Eng.
Rea, John Lowra, (5)	*Plattsburg*,	3 Arts
Rector, Mark Davis, (2)	*Chicago, Ill.*,	1 Mech. Eng.
Redding, Charles Joseph Vincent, (4)	*Owego*,	2 Med. (N.Y.C.)
Redmond, Nicholas Gregory, (6)	*Syracuse*,	3 Arts
Reece, William Asher, (9)	*Christchurch, New Zealand*,	4 Mech. Eng.
Reed, Eleanor Victoria Homer, (4)	*Hoboken, N. J.*,	2 Arts
Reed, George Arthur, (1)	*Blue Bell P. O., Pa.*,	1 Law
Reed, Harry Clifford, (2)	*Ithaca*,	1 Mech. Eng.
Reed, Harrison Pierce, (2)	*Milwaukee, Wis.*	1 Mech. Eng.
Reed, James Erwin, (8)	*Schenectady*,	4 Med. (N.Y.C.)
Reed, Lucy Carleton, A.B., (4)	*Southbridge, Mass.*,	3 Med. (N.Y.C.)
Reed, Mildred, (2)	*Newark*,	1 Arts
Reeve, Harry Huntting, (2)	*Greenport*,	1 Arts
Rehr, Louis, (2)	*New York City*,	1 Mech. Eng.
Reiber, Harry Paul, (4)	*Pittsburg, Pa.*,	1 Mech. Eng.
Reiber, John Louis, (4)	*Pittsburg, Pa.*,	Jr. Law
Reichle, Mary Crescentia, (2)	*Newark, N. J.*,	Sp. Med. (N.Y.C.)
Reid, Eva Charlotte, (6)	*New York City*,	3 Med. (N.Y.C.)
Reid, George Taylor, (4)	*Tennent, N. J.*,	Sp. Agriculture
Reid, Hermon Camp, (4)	*Brookton*,	2 Mech. Eng.
Reid, John Irvin, (2)	*Schenectady*,	1 Medicine
Reid, John Simpson, Jr., (2)	*Ithaca*,	1 Mech. Eng.
Reid, Walker, (8)	*Greenwich*,	4 Arts

Reid, Walter Lincoln, (1)	*Mt. Vernon*,	1 Mech. Eng.
Reidy, Margaret Mary, (4)	*Ithaca*,	Sp. Arts
Reidy, Thomas Joseph, (4)	*Ithaca*,	Jr. Law
Reighart, Horace Robert, (4)	*Johnstown, Pa.*,	2 Mech. Eng.
Reilly, Daniel Robert, (6)	*Cortland*,	3 Med. (N.Y.C.)
Reissman, Isidor Irving, (2)	*New York City*,	1 Med. (N.Y.C.)
Reiter, Arthur Pennoyer, (2)	*East Orange, N. J.*,	1 Civil Eng.
Rekate, George Herman, (6)	*Lancaster*,	3 Civil Eng.
Remsen, Theodore Gerow, (4)	*New City*,	2 Mech. Eng.
Reno, John Linford, (2)	*Swissvale, Pa.*,	1 Mech. Eng.
Rentsch, William Daniel, (2)	*Allegheny, Pa.*,	Sp. Architecture
Renwick, Allyn King, (4)	*Avon, Pa.*,	3 Mech. Eng.
Requardt, Gustav Jaeger, (2)	*Baltimore, Md.*,	1 Civil Eng.
Reyes, Jose, A.B., (2)	*Manila, P. I.*,	1 Architecture
Reynell, Carleton, (5)	*New York City*,	2 Civil Eng.
Reynolds, William Warwick, (8)	*Washington, D. C.*,	3 Civil Eng.
Rhame, Frank Phipps, (2)	*Wantagh*,	1 Mech. Eng.
Rhodes, Amy Teagle, (6)	*Brooklyn*,	1 Arts
Rhodes, Oscar Lynn, (4)	*Baltimore, Md.*,	2 Civil Eng.
Rice, Frederick Adolph, (2)	*Brooklyn*,	1 Arts
Rice, Frederic Clinton, (6)	*Augusta, Ga.*,	3 Mech. Eng.
Rice, John Henry, (6)	*North Adams, Mass.*,	3 Civil Eng.
Rice, Laurence Joseph, Jr., (6)	*Elmira*,	2 Civil Eng.
Rice, Willis Ballance, (6)	*Peoria, Ill.*,	3 Mech. Eng.
Rich, John Lyon, (5)	*Hobart*,	4 Arts
Richards, Harry Ames, (4)	*Alexander*,	2 Arts
Richards, Mabel Edna, (6)	*Little Falls*,	3 Arts
Richardson, Frank Howard, A.B., (8)	*Brooklyn*,	4 Med. (N. Y. C.)
Richmond, Vance Lawton, (2)	*Brooklyn*,	1 Agriculture
Richter, Martin Luther, Jr., B.S. in C.E., (2)	*Madison, Ga.*,	4 M. E.
Rick, Charles Maderia, (10)	*Reading, Pa.*,	4 Mech. Eng.
Rickard, Le Ray Sidney, (8)	*Cobleskill*,	4 Civil Eng.
Ricketsou, William Elbridge, (6)	*Plattsburg*,	2 Mech. Eng.
Ridenour, John Schell, (3)	*Bedford, Pa.*,	1 Mech. Eng.
Rider, Charles Alden, (3)	*Rochester*,	2 Mech. Eng.
Rider, Florence Albertson, (1)	*Washington, D. C.*,	Sp. Agriculture
Rider, Hiel Gilbert, (2)	*Rochester*,	1 Law
Riegle, Carrie Naomi, (2)	*Harrisburg, Pa.*,	1 Arts
Riley, John Henry Traver, (2)	*Cohoes*,	1 Civil Eng.
Rindsfoos, Charles Siesel, (8)	*Circleville, O.*,	3 Civil Eng.
Ritchie, Norman Edgar, (1)	*Beaver, Pa.*,	1 Civil Eng.
Rittenhouse, Charles Edwin, (4)	*Washington, D. C.*,	2 Mech. Eng.

Ritter, Frederick William, (2)	*Woodside*,	1 Art
Roadhouse, Chester Linwood, (6)	*Berkeley, Calif.*,	3 Veterinary
Roat, Grover Cleveland, (8)	*Rushville*,	4 Mech. Eng.
Roats, Oley De Wayne, (6)	*Three Mile Bay*,	Sr. Law
Robartes, Leigh, (2)	*Brooklyn*,	1 Civil Eng.
Robbins, John Loring, (6)	*Great Barrington, Mass.*,	2 Mech. Eng.
Robbins, William Marion, (2)	*Mobile Ala.*,	1 Mech. Eng.
Robert, LeRoy Clinton, (6)	*Ordway, Colo.*,	4 Mech. Eng.
Roberto, Romeo, (2)	*New York City*,	1 Med. (N.Y.C.)
Roberts, Alfred Moss, (2)	*Buffalo*,	1 Mech. Eng.
Roberts, Floy Howell, (4)	*Ithaca*,	2 Arts
Roberts, James Louis, (6)	*Hempstead*,	1 Agriculture
Roberts, Kenneth Lewis, (4)	*Malden, Mass.*,	2 Arts
Robertson, James Lenox, (2)	*Buffalo*,	1 Law
Robertson, Ralph Kenyon, A.B., (4)	*Buffalo*,	Sr. Law
Robinson, Charles Albert, Jr., A.B., (4)	*Baltimore, Md.*,	4 Mech. Eng.
Robinson, Edward Weeks, (2)	*Ithaca*,	1 Arts
Robinson, Horace Brady, Jr., (1)	*Oil City, Pa.*,	1 Civil Eng.
Robinson, James Richards, (1)	*Citronville, Ala.*,	Sp. Agriculture
Robinson, James Richards, Jr., (2)	*Ithaca*,	1 Law
Robinson, Mary Huntting, (8)	*Ithaca*,	4 Med. (N. Y. C.)
Robinson, Ralph, (8)	*Ithaca*,	4 Med. (N. Y. C.)
Robinson, William Alexander, (8)	*Sterling, Ill.*,	4 Mech. Eng.
Robitzer, John Michael, (6)	*Pittsburg, Pa.*,	Sp. Agriculture
Rocap, Charles Clarence, (6)	*Plainfield, N. J.*,	2 Mech. Eng.
Rockwell, Archie Gordon, (2)	*Chicago, Ill.*,	2 Mech. Eng.
Rockwell, Theodore Griffin, (2)	*Chicago, Ill.*,	1 Law
Rockwood, Harold Arthur, (2)	*Buffalo*,	1 Mech. Eng.
Rockwood, Harry Langdon, (7)	*Olean*,	3 Med.(N.Y.C.)
Roddewig, George Washington, (8)	*Davenport, Ia.*,	4 Mech. Eng.
Roe, Ralph Burt, (6)	*Ithaca*,	3 Arts
Roeder, Arthur, (6)	*Orange, N. J.*,	2 Civil Eng.
Roesch, George William, (6)	*Brooklyn*,	3 Arts
Roessel, Louis Carl Herman, (4)	*Brooklyn*,	2 Mech. Eng.
Rogalsky, George Frederick, (4)	*No. Tonawanda*,	2 Arts
Rogers, Allan Baldwin, (2)	*Denver, Colo.*,	1 Mech. Eng.
Rogers, Henry Pliny, Jr., (8)	*Salamanca*,	4 Architecture
Rogers, Herman Leon, (4)	*Stony Brook*,	2 Mech. Eng.
Rogers, Howard Maxwell, (6)	*Riverton, N. J.*,	2 Mech. Eng.
Rogers, John Clifford, (2)	*Ithaca*,	1 Civil Eng.
Rogers, Job Robert, (11)	*New York City*,	4 Civil Eng.
Rogers, Will Andrews, (1)	*Interlaken*,	Sp. Mech. Eng.

Rogers, William Haywood, (1)	*Camden, N. J.*,	1 Mech. Eng.
Rohn, John Philip, Jr., (4)	*Newark, N. J.*,	2 Med. (N.Y.C.)
Roig, Harold Joseph, (6)	*Poughkeepsie*,	3 Arts
Roland, Cornelius Ferdinand, (2)	*Reading, Pa.*,	1 Arts
Rollins, Mabel, (4)	*New York City*,	2 Arts
Rollow, Thomas Pearson, Jr., (2)	*Wynnewood, I. T.*,	1 Civil Eng.
Rolph, Samuel Smith, (2)	*Fredonia*,	1 Arts
Rolph, Thomas Willett, (6)	*Fredonia*,	3 Mech. Eng.
Roman, Julius Caesar, B. S., (2)	*Managua, Nicaragua*,	1 Med. (N.Y.C.)
Ronsheim, Joshua, (6)	*Brooklyn*,	3 Med. (N.Y.C.)
Rood, Vaughn Wesley, (4)	*Etna*,	2 Veterinary
Root, John Wellborn, (2)	*Chicago, Ill.*,	1 Architecture
Root, Louis Denman, (2)	*Syracuse*,	1 Mech. Eng.
Root, Lula May, (4)	*Hoosick Falls*,	4 Arts
Root, Mary Pauline, M.D.,	*North Attleboro, Mass.*,	Sp. Med. (N Y.C.)
Rorty, Eva Winifred, (2)	*Middletown*,	1 Arts
Rosbrook, Fred Eugene, (6)	*Watertown*,	Sr. Law
Rosbrook, Ida Belle, (6)	*Watertown*,	Sr. Law
Rose, Charles Price, (6)	*Friendship*,	Sr. Law
Rose, Joseph Hanson, (8)	*Pittsburg, Pa.*,	4 Arts
Rosenbaum, Bertram Smith, (2)	*Elmira*,	1 Arts
Rosenbaum, Leo Albert, (4)	*New York City*,	2 Arts
Rosenthal, Benjamin, (2)	*New York City*,	1 Med. (N.Y.C.)
Rosevear, Morris Burt, (4)	*Wharton, N. J.*,	2 Mech. Eng.
Ross, George Hilliard, (7)	*Edgewater, N. J.*,	4 Arts
Ross, Harold Ellis, (8)	*Smithboro*,	4 Agriculture
Ross, Orrin Franklin, (2)	*Lowville*,	Sp. Agriculture
Rossire, Henry Lansing, (4)	*Yonkers*,	2 Mech. Eng.
Rossman, Allen M, A.B., (2)	*Hudson*,	4 Mech. Eng.
Rossman, Richard, (6)	*Hudson*,	3 Arts
Rossman, Refine Latting, (2)	*Hudson*,	1 Arts
Rothenberg, Louis, (4)	*New York City*,	1 Med. (N.Y.C.)
Rothkowitz, Joseph, (10)	*New York City*,	4 Med. (N.Y.C.)
Rothschild, Leon Dobrin, (2)	*Ithaca*,	1 Arts
Roudebush, Roy Everett, A.B., (4)	*Warren, Ind.*,	3 Mech. Eng.
Rowe, Allie Ethel, (6)	*Hampton, Va.*,	3 Arts
Rowe, Anson Hewitt, (6)	*Clarksville*,	3 Agriculture
Rowe, Orvis Fletcher, (2)	*Jamestown*,	1 Mech. Eng.
Rowe, Roy,	*Little Falls*,	1 Veterinary
Rowland, Harry Shepard, (8)	*Montclair, N. J.*,	4 Mech. Eng.

Rowland, Theodore Sherwood, (6) *Greenport*, 3 Arts
Rowland, William Samuel, (4) *Washington, D. C.*, 3 Arts
Rozier, Jules Brady, Jr., (2) *Memphis, Tenn.*, 1 Mech. Eng.
Rubinow, Sidney Godfrey, (2) *Newark, N. J.*, 1 Agriculture
Rubinowitz, Alexander Hyman, (4) *Brooklyn*, 2 Med. (N. Y. C.)
Rud, William Victor, B.S., (1) *Weir, Miss.*, 4 Agriculture
Rudich, Mark, (6) *Brooklyn*, Sr. Law
Rueck, Gustav Adolph, (6) *South Byron*, 3 Med. (N.Y C.)
Ruhlen, George, Jr., (6) *Washington, D. C.*, 3 Mech. Eng.
Ruiz, Henry Cecil, (6) *Macagua, Matanzas, Cuba*, 4 Civil Eng.
Rulison, Elbert Theodore, Jr., B.S., (2) *Schenectady*, 1 Med. (N.Y.C.)
Russell, Thomas Alexander, (6) *McKeesport, Pa.*, 2 Architecture
Russianoff, Max Jacob, (8) *Brooklyn*, 4 Med. (N.Y.C.)
Rutherford, Harry William, (8) *Waddington*, 4 Civil Eng.
Ryan, Floyd Horace, (5) *Cortland*, Sp. Agriculture
Ryan, James Henry, (2) *Monticello*, 1 Mech. Eng.
Ryan, Lawrence Marvin, (4) *Syracuse*, 2 Mech. Eng.
Ryan, Walter J, A B., (4) *York, Nebr.*, 4 Civil Eng.
Ryon, Edwin Leon, (2) *Brooklyn*, 1 Arts
Ryon, Henry, (9) *Brooklyn*, 4 Civil Eng.

Sackman, Gilbert Roy, B.S., (2) *New York City*, 3 Mech. Eng.
Sailor, George Raymond, (6) *Swissvale, Pa.*, 2 Mech. Eng.
Sailor, Horace Price, (7) *Chicago, Ill.*, 4 Mech. Eng.
Sailor, Robert Warren, (7) *Chicago, Ill.*, 3 Arts
Safro, Israel, (2) *New York City*, 1 Agriculture
St. Clair, Harold Gryffyth, (2) *Chisholm, Minn.*, 1 Mech. Eng.
St. Lawrence, William Patrick, (2) *Paterson, N. J.*, 1 Med. (N.Y.C.)
Salathé, Frederick, (2) *Casper, Wyoming*, 1 Arts
Salisbury, Myron Davis, (6) *Hamburg*, 2 Mech. Eng.
Salisbury, Robert Walker, (9) *Salt Lake City, Utah*, 4 Mech. Eng.
Sampaio, Roberto d Mesquita, (3) *Sao Paulo, Brazil*, 2 Mech. Eng.
Sampaio, Vicente de Almeida, B.S., (2) *Sao Paulo, Brazil*, 3 Mech. Eng.
Samuels, Robert Eugene, (4) *Brooklyn*, 2 Arts
Sanders, Daniel Henry, (4) *Cortland*, 2 Civil Eng.
Sands, John Wagner, (1) *Wheeling, W. Va.*, 1 Arts
Sanford, Herbert Luther, (2) *Ithaca*, 1 Agriculture
Sanger, Frank Moderno, Jr., (2) *Norwalk, Conn.*, 1 Mech. Eng.
Santee, Harold Elmore, A.B., (4) *Hornellsville*, 2 Medicine
Sarmiento, Arturo, (5) *Buenos Aires, Arg. Rep.*, 3 Mech. Eng.
Saulsbury, Henry Wilson, A.B., (6) *Denton, Md.*, 4 Mech. Eng.

Saxton, Wilbur Sayre, (6)	*Binghamton*,	2 Civil Eng.
Sayles, Myron Edward, (4)	*Pittsfield, Mass.*,	2 Mech. Eng.
Scales, Henry Jackson, B.S. in E.E., B.S., in M.E., (2)	*Atlanta, Ga.*,	4 Mech. Eng.
Schaaf, Albert Herman, (6)	*Fort Wayne, Ind.*,	4 Mech. Eng.
Schacht, Henry, (4)	*Brooklyn*,	2 Arts
Schaedle, Charles Andrew, (6)	*Pittsburg, Pa.*,	3 Mech. Eng.
Schaefer, Bertha Ada, (2)	*St. Louis, Mo.*,	1 Arts
Schaefer, Ernest Charles Augustus, (2)	*Liverpool*,	1 Mech. Eng.
Schaefer, Joseph Harvey, (6)	*Liverpool*,	3 Mech. Eng.
Scheidenhelm, Fred William, A.B., (2)	*Mendota, Ill.*,	4 Civil Eng.
Schein, Nathan, (8)	*Pittsburg, Pa.*,	4 Civil Eng.
Schellinger, Alfred Kirk, (2)	*De Ruyter*,	1 Mech. Eng.
Schenck, Florence Marion, (8)	*Fulton*,	4 Arts
Schenck, Paul Albert, (6)	*Denver, Colo.*,	3 Mech. Eng.
Schickel, Henry Norbert, (2)	*New York City*,	1 Mech. Eng.
Schieffelin, George Girard, (6)	*Stokesdale, Pa.*,	Sr. Law
Schiff, Leo Francis, (8)	*Brooklyn*,	4 Med. (N.Y.C.)
Schildmiller, George Henry, (1)	*Waterbury, Conn.*,	1 Civil Eng.
Schilling, John Noyes, (2)	*Albany*,	1 Law
Schlegman, Saul, (2)	*New York City*,	1 Med. (N.Y.C.)
Schlesinger, Edwin James, (2)	*New York City*,	1 Mech. Eng.
Schlobohm, Henry Ernest, (2)	*Yonkers*,	1 Law
Schmid, Robert Major, B.S., (2)	*New York City*,	3 Mech. Eng.
Schmid, Robert John, (6)	*Rochester, Minn.*,	2 Civil Eng.
Schmidlapp, Carl Jacob, (2)	*Cincinnati, O.*,	2 Arts
Schmidlapp, William Horace, (7)	*Cincinnati, O.*,	4 Arts
Schmidt, George John, (6)	*Port Jervis*,	3 Mech. Eng.
Schmuck, Oliver LeRoy, (6)	*Hanover, Pa.*,	2 Mech. Eng.
Schneider, Frederick, (5)	*Bedford, O.*,	3 Mech. Eng.
Schnirel, Herman Ferdinand, (4)	*Geneva*,	4 Arts
Schoellkopf, Paul Arthur, (7)	*Niagara Falls*,	4 Arts
Schoenijahn, Robert Polk, (8)	*Brooklyn*,	4 Mech. Eng.
Schoff, Harold Kent, (4)	*Philadelphia, Pa.*,	2 Mech. Eng.
Scholtz, Herman Fred, B.C.E., (2)	*Louisville, Ky.*,	4 Civil Eng.
Schuerr, Gordon Leroy, (1)	*Winton, Pa.*,	1 Mech. Eng.
Schulthers, Leopold, (4)	*Brooklyn*,	2 Mech. Eng.
Schultz, Andrew Schultz, (2)	*Barto, Pa.*,	1 Mech. Eng.
Schurman, Robert, (5)	*Ithaca*,	2 Arts
Schutz, Harry Herman, B.S., (2)	*El Paso, Texas*,	3 Agriculture
Schwartz, Benjamin, (6)	*New York City*,	3 Med. (N.Y.C.)
Schwartz, Leo Samson, Ph.G., (4)	*Brooklyn*,	2 Med. (N.Y.C.)

Schwartz, Louis Frederick, Jr., (2)	*New Rochelle*,	1 Arts
Schwartz, Samuel Robert, A.B., (6)	*New York City*,	4 Mech. Eng.
Schwarz, J Walter, (6)	*Rochester*,	3 Mech. Eng.
Schwarz, Ralph Carl, (2)	*Rochester*,	2 Mech. Eng.
Scofield, Hervey Noble, (1)	*Mohawk*,	1 Mech. Eng.
Scofield, Winsor Herbert, (1)	*Canandaigua*,	1 Medicine
Scott, Alvah Alison, (4)	*Hilo, H. T.*,	1 Mech. Eng.
Scott, James Herbert, (4)	*Philadelphia, Pa.*,	2 Mech. Eng.
Scott, John Hull, (2)	*Pittsburg, Pa.*,	1 Arts
Scott, Mabel, (10)	*Jackson, Miss.*,	4 Med. (N.Y.C.)
Scovill, Jennie Belle, (3)	*New Hartford*,	3 Arts
Scripture, William Ellis, (1)	*Rome*,	1 Law
Seacord, Andrew Wilkin, (2)	*Burnside*,	1 Mech. Eng.
Sealy, Winifred Lillian, (2)	*Cedarhursl*,	1 Agriculture
Seaman, Benjamin White, (6)	*Rockville Centre*,	3 Med. (N.Y.C.)
Seaman, Daniel Henry, (4)	*Brooklyn*,	2 Civil Eng.
Seaman, Elizabeth Allen, (6)	*Smithville South*,	3 Arts
Seaman, Henry Lewis, (2)	*Brooklyn*,	1 Mech. Eng.
Seaman, Howard Lobdell, (2)	*Wilmington, Del.*,	1 Mech. Eng.
Sears, John Gregory, Jr., (2)	*Owego*,	1 Law
Sebastian, John A., B.S., M.D., (1)	*Louisville, Ky.*,	Sp. Med. (N.Y.C.)
Sechrist, Edith Rachel, (2)	*Berea, O.*,	3 Arts
See, Howard, (2)	*Hamilton, O.*,	1 Mech. Eng.
Seeley, Henry Arthur, (6)	*Bridgeport, Conn.*,	3 Civil Eng.
Seely, Hart Irving, (2)	*Spencer*,	1 Law
Seelye, Blanche Eggleston, (9)	*Ithaca*,	4 Arts
Seelye, Edward Eggleston, (4)	*Ithaca*,	2 Civil Eng.
Seibert, Otto John, (4)	*Newark, N. J.*,	1 Med. (N.Y.C.)
Seipp, Clarence Thies, (4)	*Chicago, Ill.*,	2 Civil Eng.
Sellstrom, Elmer Waldemar, (6)	*Jamestown*,	3 Civil Eng.
Selover, Queen Fidelia, (4)	*Hornellsville*,	2 Arts
de Sena, Luis, (2)	*Santa Clara, Cuba*,	2 Civil Eng.
Senigaglia, Giacomo Abraham, (2)	*Nyack*,	1 Med. (N.Y.C.)
Senillosa, Julio, (4)	*Buenos Aires, Arg. Rep.*,	1 Architecture
Serviss, Garrett Putnam, Jr., (4)	*Brooklyn*,	3 Arts
Severance, Hayward Merriam, (1)	*Buffalo*,	1 Arts
Seyfang, William George, (2)	*Buffalo*,	1 Mech. Eng
Seymour, Edward Loomis Davenport, (2)	*New York City*,	1 Agriculture
Shallenberger, Charles Moore, (3)	*Pittsburg, Pa.*,	1 Civil Eng.
Shane, Bernard, B.S., (4)	*New York City*,	3 Civil Eng.

Shanly, Mary Edward, (8)	*Binghamton*,	4 Arts
Shapero, Isador, (6)	*Syracuse*,	3 Med. (N. Y. C.)
Sharp, Harry Lyman, (4)	*Buffalo*,	2 Mech. Eng.
Sharp, Mary Ellen, (2)	*Lebanon, N. J.*,	Sp. Agriculture
Sharp, Vern Adolphus, (4)	*Forest Home*,	2 Veterinary
Sharpe, James Marion, (2)	*St. Louis, Mo.*,	1 Mech. Eng.
Shattuck, Byron Smith, (2)	*Ithaca*,	1 Veterinary
Shattuck, Sidney Winters, (2)	*Dundee*,	1 Arts
Shaw, Charles Frederick, (7)	*West Henrietta*,	4 Agriculture
Shaw, George Bradstreet, (2)	*Eau Claire, Wis.*,	1 Law
Shea, William Alphonsus, (2)	*Brockport*,	1 Arts
Sheffer, John Wesley, (6)	*Williamsport, Pa.*,	3 Mech. Eng.
Sheffield, Frederick Duane, (7)	*Warsaw*,	4 Arts
Sheffield, Katie Jane, (4)	*Warsaw*,	2 Arts
Sheldon, Pearl Gertrude, (4)	*Ithaca*,	2 Arts
Sheldon, Thomas, (4)	*Poughkeepsie*,	2 Veterinary
Sheldon, William Hills, (6)	*Auburn*,	3 Med. (N.Y.C.)
Shepard, John Berdan, (6)	*Buffalo*,	3 Agriculture
Shepard, Myron Sylvester, (6)	*Ithaca*,	3 Civil Eng.
Shepherd, Alfred Willard, (6)	*Glendale, O.*,	3 Mech. Eng
Sheppard, Carl Rogers, (4)	*Quincy, Mass.*,	1 Law
Sheppard, Joel Fithian, 2d, (6)	*Quincy, Mass.*,	2 Mech. Eng.
Sherman, Frederick Elias, (6)	*Watkins*,	3 Civil Eng.
Sherman, Stanton Cole, (4)	*Salem*,	4 Arts
Sherwood, Nial, (4)	*Liberty*,	1 Civil Eng.
Shields, William Dickinson, (6)	*Shields, Pa.*,	3 Mech. Eng.
Shilotri, Prabhaker Sadashiva, (2)	*Dist. Thana, Bombay, India*,	1 Agriculture
Shires, Henry Herbert, (4)	*Troy*,	2 Mech. Eng.
Shoemaker, Seth Whitney, (4)	*New York City*,	2 Arts
Shook, Raymond Calvin, (4)	*Youngstown, O.*,	1 Mech. Eng.
Shope, Harry Stephenson, (4)	*Harrisburg, Pa.*,	1 Mech. Eng.
Short, Henry Morrison, (2)	*Geneva, Switzerland*,	1 Mech Eng.
Short, Stanley, (6)	*Clifton Springs*,	1 Mech. Eng.
Shreve, Ralph Febrey, (9)	*Washington, D. C.*,	4 Civil Eng.
Shull, Fred Grover, (6)	*Hammondsport*,	3 Mech. Eng.
Shults, Altha Cemantha, (4)	*Freeville*,	2 Arts.
Shults, Leo John, (2)	*Cohocton*,	1 Mech. Eng.
Shumway, Charlotte Everest, (4)	*Champlain*,	4 Arts
Shute, Sarah Pierson, (6)	*Gloversville*,	4 Arts
Sibley, Samuel Dunham, (6)	*North Orwell, Pa.*,	3 Mech. Eng.
Sichtermann, Arie John, (1)	*New York City*,	1 Mech. Eng.

Siegel, Jacob Henry, Jr., (4)	*Brooklyn*,	2 Med. (N.Y.C.)
Sieling, Louis John, (6)	*Brooklyn*,	3 Civil Eng.
Sill, William Eaton, (4)	*Sodus*,	Jr. Law
Sill, William Miller, (8)	*Jamestown*,	3 Med. (N.Y.C.)
Silsbee, James Alfred, (4)	*Elmira*,	3 Civil Eng.
Simmons, Alice Pendergast, (8)	*Gloversville*,	4 Arts
Simonds, Omar Howard, (4)	*Duluth, Minn.*,	2 Mech. Eng.
Simonton, Ira Boyce, B.S., (6)	*Jacksonville, Fla.*,	4 Mech. Eng.
Simpson, Dwight Swain, (8)	*Powers, Minn.*,	3 Mech. Eng.
Simpson, Ernest Lee, (6)	*Troupsburg*,	3 Veterinary
Simpson, Homer Nelson, (2)	*Poughkeepsie*,	1 Arts
Simpson, Reuben Spencer, (4)	*Oswego*,	2 Medicine
Simpson, William C, (2)	*Elmira*,	1 Mech. Eng.
Sinclair, Arthur Wells, (2)	*Pasadena, Calif.*,	1 Mech. Eng.
Skidelsky, Berenice Claire, (2)	*Philadelphia, Pa.*,	2 Arts
Skidmore, George Harrison, (3)	*Riverhead*,	1 Architecture
Skidmore, Louise Biuney, (4)	*Philadelphia, Pa.*,	2 Arts
Skilton, Avery Wadsworth, (4)	*Rockville Centre*,	1 Med. (N.Y.C.)
Skinner, Albert Merriman, (7)	*Albany*,	1 Architecture
Skinner, Alice Adeline, (4)	*Oswego*,	2 Arts
Skinner, Emma Frances, (4)	*Ithaca*,	2 Arts
Skinner, Luke L, (2)	*Norwich*,	1 Mech. Eng.
Slauson, Henry Lewis, Jr., (1)	*Port Jervis*,	1 Mech. Eng.
Slausou, Harold Whiting, (8)	*Middletown*,	2 Mech. Eng
Slauson, Kinsley Wilcox, (5)	*Middletown*,	3 Arts
Sleeth, Montgomery. (8)	*Wilmerding, Pa.*,	4 Mech. Eng.
Sliter, Harold Male, (4)	*Elmira*,	2 Mech. Eng.
Sloan, Augustus Kellogg, Jr., (2)	*Brooklyn*,	1 Mech. Eng.
Sloan, Ben, (6)	*Greenville, S. C.*,	3 Mech. Eng.
Sloan, Robert Shunk, (6)	*Ithaca*,	Sr. Law
Sloan, William Calmell, (2)	*Brooklyn*,	1 Civil Eng.
Sloat, John Allen, (4)	*Watertown*,	2 Civil Eng.
Slocum, Chester Arthur, (8)	*Long Branch, N. J.*,	4 Mech. Eng.
Slocum, Chester Colt, (6)	*Scottsville*,	3 Mech. Eng.
Slocum, Rob Roy, (4)	*Ithaca*,	2 Agriculture
Slutsky, Nathan Israel, (6)	*Brooklyn*,	3 Med. (N.Y.C.)
Slutter, Newton Waldron, (1)	*West Seneca*,	1 Mech. Eng.
Slutzker, Joseph, (4)	*Altoona, Pa.*,	2 Mech. Eng.
Sly, Frederic Sanford, (6)	*Fredonia*,	3 Mech. Eng.
Smallman, Ralph Alcorn, (4)	*Wauseon, O.*,	2 Civil Eng.
Smilansky, Isidor, (2)	*New York City*,	1 Med. (N.Y.C.)
Smiley, Arthur Rose, (8)	*Brooklyn*,	4 Arts

Smiley, Bertha Emily, (4)	*Ithaca*,	2 Arts
Smith, Amos Bird, (6)	*Cazenovia*,	3 Mech. Eng.
Smith, Albert Newton, (2)	*Corning*,	1 Mech. Eng.
Smith, Catherine, (4)	*Rensselaer*,	2 Arts
Smith, Chester Allan, (6)	*Decatur, Ill.*,	Sr. Law
Smith, Charles Sumner, (2)	*Pittsfield, Mass.*,	1 Mech. Eng.
Smith, Clyde Edwin, (3)	*Lodi*,	2 Veterinary
Smith, David Theodore, (4)	*Brooklyn*,	Jr. Law
Smith, Earl John, (2)	*Five Corners*,	1 Agriculture
Smith, Edwin Kennedy, (7)	*Nashville, Tenn.*,	3 Mech. Eng.
Smith, Elizabeth Allen, (6)	*Olean*,	3 Arts
Smith, Esmonde Bathgate, (2)	*Brooklyn*,	1 Med. (N.Y.C.)
Smith, Florence Givens, (4)	*Ithaca*,	2 Arts
Smith, Frank Garrettson, (4)	*Brooklyn*,	2 Mech. Eng.
Smith, Florence May, (6)	*Trumansburg*,	3 Arts
Smith, Fred Thomas, (1)	*Canisteo*,	1 Arts
Smith, Fred Wadsworth, (4)	*Ilion*,	2 Mech. Eng.
Smith, Giles Milton, (4)	*Utica*,	2 Architecture
Smith, Harlow Duane, (5)	*Fayetteville*,	Sp. Agriculture
Smith, Harry Coleman, (6)	*Canisteo*,	1 Civil Eng.
Smith, Harry George, (8)	*Buffalo*,	3 Mech. Eng.
Smith, Henry Edmond, (8)	*Baltimore, Md.*,	4 Civil Eng.
Smith, Herbert Lacy, (1)	*Buffalo*,	1 Arts
Smith, Jay Lewis, A.B., (2)	*Port Jervis*,	4 Mech. Eng.
Smith, Lawrence Ross, (4)	*Arcade*,	2 Civil Eng.
Smith, Lewis Raymond, (4)	*Greene*,	2 Arts
Smith, Mark Elmer, (7)	*Erie, Pa.*,	4 Mech. Eng.
Smith, Newton Osborn, (2)	*Plymouth, Pa.*,	1 Civil Eng.
Smith, Ralph William, (2)	*Rochester*,	1 Civil Eng.
Smith, Rufus Daniel, (6)	*Richmond Hill*,	3 Arts
Smith, Stanley Woodruff, (2)	*Toledo, O.*,	1 Civil Eng.
Smith, Victor Edward, (4)	*Bayonne, N. J.*,	2 Mech. Eng.
Smith, Walter, (2)	*Davenport, Ia.*,	1 Mech. Eng.
Smith, Warren George, (8)	*Oneonta*,	4 Med. (N.Y.C.)
Smith, William Burritt, (6)	*Newfield*,	3 Veterinary
Smyth, Joseph Mathew, (2)	*Whitinsville, Mass.*,	1 Civil Eng.
Snider, Howard Lee, (3)	*Cleveland, O.*,	2 Arts
Snow, Arch Miller, (8)	*Boonville*,	4 Civil Eng.
Snow, Marjorie, (4)	*Fairport*,	2 Arts
Snowdon, Florence, (4)	*Scranton, Pa.*,	Sp. Agriculture
Snyder, Alfred, (6)	*Philadelphia, Pa.*,	3 Mech. Eng.
Snyder, Floyd Christian, (10)	*Massillon, O.*,	4 Mech. Eng.

Snyder, Harold Joseph, (2)	*Auburn*,	1 Law
Snyder, Leo Harter, (8)	*Herkimer*,	3 Mech. Eng.
Sobieralski, Alfred, (4)	*Brooklyn*,	2 Civil Eng.
Sohngen, Robert Mason, (2)	*Hamilton, O.*,	1 Law
Solomon, Meyer, (2)	*New York City*,	1 Med. (N.Y.C.)
Somerville, John Snape, (4)	*Evanston, Ill.*,	2 Mech. Eng.
Sonn, Sidney Harold, (2)	*New York City*,	1 Law
Sonnenberg, Jerome, (6)	*New York City*,	3 Med. (N.Y.C.)
Sophian, Abraham, (8)	*New York City*,	4 Med. (N.Y.C.)
Southworth, Claire Louise, (4)	*Holley*,	2 Arts
Spaide, Rolland Lee, (2)	*Hazelton, Pa.*,	1 Mech. Eng.
Spandau, Harry Monmouth, (2)	*Brooklyn*,	1 Civil Eng.
Spanogle Donald Bare, (6)	*Lewiston, Pa.*,	3 Mech. Eng.
Spaulding, Harry Vanness, (4)	*New York City*,	2 Med. (N.Y.C.)
Spears, Eldridge Anson, (6)	*Northwood*,	3 Arts
Specht, William Henry, D.D.S., (8)	*New York City*,	4 Med. (N.Y.C.)
Speed, Bessie Frances, (6)	*Ithaca*,	4 Arts
Spelman, Harold James, (2)	*Rochester*,	1 Civil Eng.
Spelman, William Angell, (4)	*Champlain*,	2 Civil Eng.
Spencer, Alva Carlisle, (2)	*Fayetteville*,	Sp. Agriculture
Spencer, Robert Jones, (4)	*Brooklyn*,	2 Arts
Speyer, Elwin Gerard, (6)	*Buffalo*,	3 Civil Eng.
Spingarn, Herman, (4)	*New York City*,	2 Arts
Spitzer, Harry, (4)	*New York City*,	1 Med. (N.Y.C.)
Spooner, Charles Stockman, (6)	*Middletown*,	3 Arts
Sprague, Frederick Burdette, (2)	*Ithaca*,	1 Agriculture
Sprague, John Russel, (1)	*Inwood*,	1 Law
Sprigg, Carrollton Crawford, (6)	*Tompkinsville*,	3 Civil Eng.
Squier, Courtney Arthur, (3)	*Ithaca*,	Jr. Law
Stafford, Rosslyn John, (6)	*New Lisbon*,	3 Veterinary
Stanbery, Alfred Baily, (2)	*Toledo, O.*,	Sp. Agriculture
Standart, Robert Watson, Jr., (2)	*Detroit, Mich.*,	1 Arts
Stander, Matthew, (1)	*New York City*,	2 Agriculture
Stanton, Grove Ansel, (6)	*Auburn*,	2 Civil Eng.
Stanton, Robert Brewster, Jr., (2)	*Setauket*,	1 Civil Eng.
Stark, James Harrington, (2)	*Buffalo*,	Sp. Agriculture
Starr, Albert Birdsey, (6)	*East Hampton, Conn.*,	3 Mech. Eng.
Starr, Arthur, (8)	*Sewickley, Pa.*,	4 Mech. Eng.
Startz, Benjamin, (8)	*New York City*,	4 Med. (N.Y.C.)
Stearns, Helen Maria, (4)	*Norwich, Conn.*,	2 Arts
Stearns, John, (8)	*Denver, Colo.*,	4 Civil Eng.

Stecker, Margaret Loomis, (8)	*Mt. Vernon*,	4 Arts
Steele, Edward Albert, (8)	*Philadelphia, Pa.*,	4 Mech. Eng.
Steen, Carl Waldemar, (3)	*Christiania, Norway*,	2 Mech. Eng.
Stehli, Edgar, (6)	*Montclair, N.J.*,	3 Arts
Stein, Adelaide Estella, (4)	*Batavia*,	2 Arts
Stein, Charles Jacob, (2)	*Buffalo*,	1 Agriculture
Steinbugler, William Francis, (4)	*New York City*,	2 Med. (N.Y.C.)
von Steinwehr, Fred, (5)	*Cincinnati, O.*,	4 Arts
Stephens, Floyd C, (4)	*Clifton Springs*,	2 Mech. Eng.
Stephenson, Hermann, (6)	*Ithaca*,	3 Mech. Eng.
Stern, Bessie Cleveland, (2)	*Buffalo*,	1 Arts
Stern, Harold Gross, (8)	*Spokane, Wash.*,	3 Mech. Eng.
Stevens, Alexander Chilson, (4)	*New York City*,	3 Mech. Eng.
Stevens, Douglas Franklin, (2)	*Evanston Ill.*,	3 Mech Eng.
Stevens, John Hoyt, (4)	*Rome*,	2 Civil Eng.
Stevens, Theodore Mortimer, (2)	*Hazelton, Pa.*,	1 Architecture
Stevens, William Clifford, (8)	*Portland, Me.*,	4 Mech. Eng.
Stevenson, Hector Morrison, (6)	*Queens*,	3 Med. (N. Y. C.)
Stewart, Donald, (4)	*Brooklyn*,	2 Mech. Eng.
Stewart, Homer Edgar, Jr., (5)	*Warren, O.*,	2 Mech. Eng.
Stewart, Margaret Miles, (4)	*Troy*,	2 Arts
Stewart, Sidney Vander Veer, (6)	*Morrisville*,	2 Mech. Eng.
Stewart, Walter Phelps, (6)	*Rochester*,	3 Civil Eng.
Stillman, Austin Frank, (7)	*Brooklyn*,	1 Mech. Eng.
Stillman, Edwin Arthur, (4)	*Brooklyn*,	2 Mech. Eng.
Stillson, George Doremus, (4)	*Buffalo*,	2 Medicine
Stimpson, Earl Bristol, (6)	*Walton*,	2 Architecture
Stockdale, Thomas Ringland, (6)	*Summit, Miss.*,	2 Civil Eng.
Stoddart, David Ayars, (4)	*Wilkes-Barre, Pa.*,	2 Mech. Eng.
Stone, Don Olmstead, (2)	*Conneaut, O.*,	1 Civil Eng.
Stone, Helen Lovica, (6)	*Ithaca*,	3 Arts
Stone, Margaret Atwell, (3)	*Ithaca*,	2 Arts
Stone, Roy Lynne, (4)	*Potsdam*,	3 Mech. Eng.
Storer, Lyell, (4)	*Morton*,	2 Mech. Eng.
Storm, Walter Woolsey, (5)	*Wilmington, N. C.*,	2 Mech. Eng.
Storz, Joseph Frank, (8)	*Wilkes-Barre, Pa.*,	4 Civil Eng.
Stoughton, Elizabeth Alden, (8)	*Hartford, Conn.*,	4 Arts
Stover, John Howard, (2)	*Newark, N.J.*,	1 Med. (N.Y.C.)
Stowell, William Stuart, (6)	*Elmira*,	3 Mech. Eng.
Strahan, Ray Thomas, (4)	*Friendship*,	Jr. Law
Strang, Emma Florence, (4)	*Waterloo*,	2 Arts
Strauss, Spencer Goldsmith, (2)	*New York City*,	1 Arts

Streen, Morris, (2)	*Newark, N. J.*,	1 Med. (N.Y.C.)
Strehan, George Ernest, B.S., (1)	*New York City*,	3 Mech. Eng.
Stronge, Lulu Allt, (2)	*Albany*,	1 Arts
Stryke, Anna Clegg, (4)	*Philadelphia, Pa.*,	2 Arts
Stuart, William Charles, Jr., (5)	*Irvington*,	2 Civil Eng.
Stuckmann, Laura Marie, (5)	*Saranac Lake*,	3 Arts
Stull, Charles Rodman, (6)	*Ridley Park, Pa.*,	2 Mech. Eng.
Sturge, John Howard, (4)	*Rochester*,	2 Mech. Eng.
Sturges, Harold Alexander, (4)	*Saratoga Springs*,	2 Mech. Eng.
Sturgis, Blaine Fred, (4)	*Medina*,	Jr. Law
Sturgis, William Bayard, (4)	*New York City*,	2 Mech. Eng.
Stutz, Harry George, (6)	*Albany*,	Jr. Law
Sullivan, Alexander Camman, (2)	*New York City*,	1 Arts
Sullivan, Eugene Joseph, (6)	*Saratoga Springs*,	3 Veterinary
Sullivan, Margaret Noonan, (2)	*Jersey City, N. J.*,	3 Med. (N.Y.C.)
Summer, Wilhelm Carl, A.B., (4)	*Newberry, S. C.*,	4 Mech. Eng.
Sumner, Grover Cleveland, (2)	*Brooklyn*,	2 Arts
Sun, Kia Loh Carlos, (2)	*Shanghai, China*,	1 Mech. Eng.
Sun, Taoyuh Clarance, (2)	*Shanghai, China*,	1 Civil Eng.
Sun, Yu-Fong Louis, (2)	*Shanghai, China*,	Sp. Mech. Eng.
Sunderville, Earl, (2)	*Newark*,	1 Veterinary
Sunstein, Leon Cleveland, (7)	*Allegheny, Pa.*,	4 Arts
Sutherland, Leslie Thompson, (2)	*Yonkers*,	1 Mech. Eng.
Sutton, Frederick A, (6)	*Hackettstown, N. J.*,	3 Med. (N. Y. C.)
Sutton, Henry Craig, (4)	*Haverford, Pa.*,	3 Mech. Eng.
Swanson, John Harold, (2)	*Jamestown*,	1 Law
Sweeney, Clarence Sebastian, (3)	*Indianapolis, Ind.*,	Jr. Law
Sweet, David W, (2)	*Fillmore*,	1 Arts
Sweet, Earl Vincent, A.B., (4)	*Phœnix*,	2 Medicine
Swezey, Charles Miller, (2)	*Yaphank*,	1 Agriculture
Swezey, Sarah Ellis, (2)	*Jamaica*,	1 Medicine
Swick, Charles Humphrey, (6)	*Livonia*,	3 Mech. Eng.
Swick, Clarence Herbert, (6)	*Ransomville*,	3 Civil Eng.
Swift, Pemberton Reno, (6)	*Ridgway, Pa.*,	3 Mech. Eng.
Swigert, William Edwin, (4)	*Carbondale, Pa.*,	3 Mech. Eng.
Swiggett, Edward Mansfield, (8)	*Morrow, O.*,	4 Agriculture
Swinnerton, Arthur Adin, (2)	*Rutland, Vt.*,	1 Mech. Eng.
Swinney, Robert Ethan, (4)	*De Ruyter*,	2 Civil Eng.
Swisher, Donald DeWitt, A.B., (3)	*Danville, Ill.*,	2 Architecture
Sylvester, Louis George, (6)	*Scranton, Pa.*,	1 Arts
Symes, Wilbur Henry, (2)	*Ryegate, Vt.*,	1 Mech. Eng.
Taber, Grace Belle, (2)	*Ithaca*,	Sp. Agriculture

Taft, Royal Melville, (2)	*Cornwall-on-Hudson*,	Sp. Agriculture
Tailby, George Walter, Jr., (8)	*Ithaca*,	4 Agriculture
Takami, Tayohiko Campbell, (10)	*Tuboy, Kumamoto, Japan*,	4 Med. (N.Y.C.)
Talcott, John Chamberlain, (2)	*Buffalo*,	1 Mech. Eng.
Tallman, Carl Cornwell, (5)	*Auburn*,	3 Architecture
Tandy, Vertner Woodson, (2)	*Lexington, Ky.*,	Sp. Architecture
Tappan, Frank Girard, A.B., (4)	*Circleville, O.*,	3 Mech. Eng.
Tappey, Howard Pomfrett, (6)	*Liberty*,	2 Mech. Eng.
Tarbell, Clarence D, (6)	*Ithaca*,	Sp. Law
Tausk, Alfred Alphonzo, (2)	*Brooklyn*,	1 Arts
Taussig, John Wright, (4)	*Kirkwood, Mo.*,	2 Civil Eng.
Taylor, Earl MacNair, (6)	*Scranton, Pa.*,	3 Arts
Taylor, Fred Kalbfleisch, (2)	*Rochester*,	1 Mech. Eng.
Taylor, George Herrick, (4)	*Amsterdam*,	2 Arts
Taylor, Hawley Otis, (2)	*Fasadena, Calif.*,	1 Arts
Taylor, Wickham, (8)	*Norfolk, Va.*,	1 Architecture
Taylor, Walter Jennings, (6)	*Ithaca*,	3 Veterinary
Taylor, William Gorton, (6)	*Middletown*,	3 Mech. Eng.
Taylor, William Winthrop, (6)	*Brooklyn*,	Sr. Law
Tehan, Joseph James, (2)	*Auburn*,	1 Civil Eng.
Teller, Spencer Jay, (7)	*Unadilla*,	4 Mech. Eng.
Tempest, Richard Claude Douglas, (2)	*Perry*,	1 Civil Eng.
Temple, Herbert Asher, (8)	*Seneca*,	4 Mech. Eng.
Tennant, Henry Fry, (2)	*Mayville*,	1 Law
Tenney, Albert Seward, A.B., (4)	*Cambridge, Mass.*,	2 Med. (N.Y.C.)
Terhune, Elmer Stanley, (2)	*Newark, N. J.*,	1 Civil Eng.
Terrazas-Sujan, Juan Francisco, (4)	*Chihuahua, Mexico*,	Sp. Agr.
Terry, Alvah Lamar, (4)	*Louisville, Ky.*,	2 Mech. Eng.
Terwilliger, Florence Shipley, (4)	*Ellenville*,	2 Arts
Textor, Edward Earle, (2)	*Toledo, O.*,	Sp. Architecture
Thatcher, Alfred Haviland, (2)	*Swarthmore, Pa.*,	1 Arts
Thatcher, Romeyn Yatman, (4)	*Buffalo*,	2 Arts
Thayer, Frank Garfield, (6)	*Holyoke, Mass.*,	Sp. Agriculture
Theall, Zaidee Isabelle, (4)	*Chelsea, Mass.*,	2 Arts
Thomas, Allen Job, (4)	*Ithaca*,	Jr. Law
Thomas, Belle, (6)	*New York City*,	3 Med. (N.Y.C.)
Thomas, Edwin Randolph, (4)	*Woonsocket, R. I.*,	2 Civil Eng.
Thomas, Joseph Edge, (4)	*Darlington, Md.*,	2 Mech. Eng.
Thomas, Owen Alexander, (2)	*Oakmont, Pa.*,	2 Arts
Thomas, Royal David, (8)	*Oakmont, Pa.*,	4 Mech. Eng.
Thompson, Charles Lewis, (8)	*Otselic*,	4 Mech. Eng.

Thompson, Elmer Ives, (2)	*Waterbury, Conn.*,	1 Mech. Eng.
Thompson, Engene Alphonso, (1)	*Towanda, Pa.*,	2 Arts
Thompson, F Van, (6)	*Marcellus*,	4 Arts
Thompson, George Roger, (4)	*Glens Falls*,	2 Architecture
Thompson, Harry Ashton, (4)	*New York City*,	1 Civil Eng.
Thompson, Mabel Evangeline, (1)	*Towanda, Pa.*,	2 Arts
Thompson, Overton, (2)	*Nashville, Tenn.*,	1 Mech. Eng.
Thompson, Ray Clayton, (2)	*Moweaqua, Ill.*,	1 Mech. Eng.
Thomson, Archibald Wilson, (4)	*Englewood, N. J.*,	2 Medicine
Thomson, Charles Goff, (4)	*Little Falls*,	2 Veterinary
Thomson, Edward Herrmann, (2)	*Delhi*,	1 Agriculture
Thorne, Alma Rosa, (4)	*Leeds*,	3 Arts
Thorne, Victor Corse, Ph.B., L.L.B., (7)	*New York City*,	Sp. Med. (N.Y.C.)
Thro, William Crooks, B.S.A., A.M., (6)	*New York City*,	3 Med. (N.Y.C.)
Throckmorton, George Kenneth, (2)	*Romney, Ind.*,	1 Mech. Eng.
Thurber, Carryl Nelson, (4)	*Jamaica*,	2 Arts
Thurston, Mather Francis, (4)	*Hamburg*,	2 Arts
Tibbetts, Harland Bryant, A.B., (4)	*Ithaca*,	Sr. Law
Tibirica, Joao, (4)	*Sao Paulo, Brazil*,	2 Agriculture
Tichenor, Elmore Drane, (2)	*New Orleans, La.*,	2 Civil Eng.
Tietze, Samuel, (8)	*New York City*,	4 Med. (N.Y.C.)
Tiffany, Dean Stanley, B.S., (2)	*Hop Bottom, Pa.*,	1 Agriculture
Tiffany, Edward Lewis, (4)	*Norwich*,	2 Mech. Eng.
Tiffany, Stephen Ralph, (6)	*Willow Point*,	Sr. Law
Tifft, Robert Hull, (2)	*Buffalo*,	1 Mech. Eng.
Tilden, George Alfred, (2)	*Pittsfield, Mass.*,	1 Mech. Eng.
Tillou, Harris Baker, (4)	*Elma Centre*,	2 Veterinary
Tillson, Charles Burritt, (6)	*Maple Grove*,	1 Agriculture
Timmerman, Ray, (8)	*Fort Plain*,	4 Mech. Eng.
Tindall, Roscoe Cook, (2)	*Wilmington, Del.*,	1 Architecture
Tingley, Edward Harrington, (2)	*Buffalo*,	1 Mech. Eng.
Tinkler, John, Jr., A.B., (6)	*Deposit*,	3 Med. (N. Y. C.)
Tjomsland, Anna, (2)	*Lunds, Sögne, Norway*,	1 Arts
Toan, Lewis Austin, (2)	*Perry*,	1 Agriculture
Todd, Clarence Lionel, (6)	*Beaver, Pa.*,	3 Civil Eng.
Todd, John William, (8)	*Pittsburg, Pa.*,	4 Mech. Eng.
Todd, Otis Howard, (3)	*Griffin Corners*,	2 Mech. Eng.
Todd, Walter Ledyard, (1)	*Rochester*,	1 Arts
Tolins, David, (2)	*Brooklyn*,	1 Law
Tompkins, George Ricks, (6)	*Buffalo*,	2 Mech. Eng.
Tompkins, Harry K N, (2)	*La Salle*,	1 Law

Tompkins, Ward Kellogg, (2)	*Ithaca*,	1 Law
Tomkins, William, (4)	*Brooklyn*,	2 Med. (N.Y.C.)
Toms, Jay William, (2)	*Frederick, Md.*,	1 Civil Eng.
Toms, Raymond Ezra, (6)	*Frederick, Md.*,	3 Civil Eng.
Tong, Harry Irving, (2)	*Elmira*,	1 Law
Tong. Yau Hang, (4)	*Canton, China*,	2 Agriculture
Toor, Esther, (1)	*Rochester*,	1 Arts
Topping, Elizabeth Russell, (7)	*Ithaca*,	4 Arts
Torrance, Charles Everett, (2)	*Northampton, Mass.*,	1 Mech. Eng.
Tourison, Charles Edward, (3)	*Philadelphia, Pa.*,	4 Arts
Tourison, Clarence Sedgwick, (1)	*Philadelphia, Pa.*,	1 Arts
Tousey, Thomas Grant, (8)	*Pittsford*,	4 Med. (N.Y.C.)
Town, Clarence Adelbert, (4)	*Syracuse*,	2 Veterinary
Townley, John Campbell, (4)	*Ithaca*,	2 Mech. Eng.
Townsend, Clarence Ellsworth, (6)	*Painted Post*,	3 Mech. Eng.
Townsend, Frederick Barrett, (4)	*New York City*,	2 Mech. Eng.
Townsend, Russell Everett, (2)	*Ithaca*,	Sp. Agriculture
Tracy, John Cadman, (6)	*Hudson*,	1 Arts
Tracy, Morris, (2)	*Penn Yan*,	1 Mech. Eng.
Tran, Irving, (2)	*New York City*,	1 Med.(N.Y.C.)
Trautschold, Gordon Manfred, (8)	*Montclair, N. J.*,	4 Architecture
Travers, Henry Adelbert, (8)	*Saratoga Springs*,	4 Mech. Eng.
Travers, William Joseph, (2)	*Buffalo*,	1 Mech. Eng.
Travis, Miller Amasa, (2)	*Canisteo*,	1 Agriculture
Treat, Sidney Wellington, (6)	*New York City*,	2 Mech. Eng.
Treene, William Harold, (2)	*Newark, N. J.*,	1 Arts
Treman, Emmett Taber, (3)	*Ithaca*,	2 Civil Eng.
Treman, Robert Elias, (2)	*Ithaca*,	1 Arts
Tripp, Donald Hatfield, (3)	*North Vernon, Ind.*,	1 Civil Eng.
Tripp, Harry Hollister, (4)	*Medina*,	2 Civil Eng.
Trorlicht, Oscar Albert, (6)	*St. Louis, Mo.*,	1 Mech. Eng.
Trott, John Winslow, (6)	*Niagara Falls*,	2 Mech. Eng.
Trube, Herbert Lawrence, (4)	*Hastings-on-Hudson*,	2 Mech. Eng.
True, Mary Bowler, (2)	*Troy*,	1 Arts
Trumbull, James Alexander, (6)	*Ithaca*,	Sr. Law
Tyron, William Louis, (1)	*Schenectady*,	1 Arts
Tsai, Kuo Tsac, (2)	*Tientsin, China*,	1 Mech. Eng.
Tuck, Charles Henry, (8)	*Ogdensburg*,	4 Arts
Tucker, Edson Jay, (4)	*Buffalo*,	Jr. Law
Tucker, Henry Hennigan, (2)	*Little Rock, Ark.*,	1 Arts
Tudela, Gabriel, (8)	*Lima, Peru, So. America*,	4 Mech. Eng.
Tuerk, Frederick Samuel, (6)	*Fulton*,	2 Mech. Eng.

Tufts, Louis Rex, (4)	*Vernon*,	Special Agriculture
Tuller, Jesse, (2)	*Auburn*,	1 Civil Eng.
Tully, John James, A.M., M.D., (1)	*Stockton, Cal.*,	Sp. Med. (N.Y.C.)
Turner, Benjamin Coe, (6)	*Scriba*,	Sr. Law
Turner, George Follett, (8)	*Brooklyn*,	4 Arts
Turner, Joseph Benson, Jr., (2)	*New York City*,	1 Mech. Eng.
Turner, Ralph Coit, (8)	*Marietta, O.*,	2 Mech. Eng.
Turner, Robert Patterson, (4)	*St. Louis, Mo.*,	2 Mech. Eng.
Turner, Robert Tifft, Jr., (2)	*Elmira*,	1 Mech. Eng.
Turner, Robert Williamson, Jr., (1)	*Nashville, Tenn.*,	Sp. Mech. Eng.
Turner, William Joel, B.A., (5)	*Lexington, Va.*,	3 Civil Eng.
Tydeman, Stephen James, (8)	*Bloomfield, N. J.*,	4 Mech. Eng.
Tyrrell, Charles, (1)	*Lake George*,	Sp. Agriculture
Uihlein, Herman Alfred, (4)	*Milwaukee, Wis.*,	2 Mech. Eng.
Ullmann, James Wilson, (2)	*Oak Park, Ill.*,	1 Agriculture
Ullmann, Ralph Williams, (4)	*Oak Park, Ill.*,	2 Mech. Eng.
Ullrich, Carl Oscar William, (4)	*Ozone Park*,	2 Civil Eng.
Umstad, Wilfred LeRoy, (8)	*Norristown, Pa.*,	3 Mech. Eng.
Underhill, George Gardner, (7)	*Albany*,	4 Civil Eng.
Underwood, Harold Barnes, (6)	*Jamestown*,	3 Mech. Eng.
Underwood, Helen Willoughby, (7)	*New York City*,	4 Arts
Underwood, Paul Halladay, (6)	*Ludlowville*,	3 Civil Eng.
Unger, George Frederick, (2)	*Buffalo*,	1 Civil Eng.
Unger, Max, (6)	*New York City*,	1 Med. (N.Y.C.)
Updegraff, Daniel Smith, (2)	*Seattle, Wash.*,	1 Mech. Eng.
Urquhart, Leonard Church, (2)	*Cleveland, O.*,	1 Civil Eng.
Urrutia, Fermin, (2)	*New York City*,	2 Mech. Eng.
Usher, John Bloomfield, (4)	*New York City*,	2 Mech. Eng.
Vail, Atlee Gerow, (2)	*Milton*,	1 Mech. Eng.
Vail, Roger Sherman, (8)	*Highland Park, Ill.*,	4 Arts
Valladares, Antenor, (6)	*Lima, Peru*,	4 Mech. Eng.
Van Denburgh, Lizzie Edith, (2)	*Charlton*,	1 Arts
Vanderveer, Stephen Lott, (4)	*Brooklyn*,	2 Arts
Vanderwaart, Peter Thomas, (2)	*Yantic, Conn.*,	1 Mech. Eng.
Vanderwater, Holmes, (4)	*Poughkeepsie*,	Jr. Law
Van Deusen, Margaret, (2)	*Ithaca*,	1 Arts
Van Devanter, Elliot, (4)	*Baltimore, Md.*,	2 Civil Eng.
Van Doren, Rolla, (4)	*Three Mile Bay*,	Sp. Agriculture
Van Fleet, Herman H, (6)	*Denver, Colo.*,	2 Mech. Eng.
Van Houten, William Abram, (2)	*Seneca Falls*,	1 Mech. Eng
Van Kirk, Peirson Monroe, (2)	*Ithaca*,	1 Law

Van Kleeck, Louis Ashley, (2)	*Ithaca*,	1 Medicine
Van Marter, James Howard, (2)	*Newfield*,	1 Medicine
Vannan, Paul Antrim, (5)	*Riverside, Pa.*,	2 Mech. Eng.
Vanneman, Arthur Vosbury, (2)	*Havre de Grace, Md.*,	1 Civil Eng.
Van Nostrand, Leonard Green, (9)	*Binghamton*,	4 Mech. Eng.
Van Orman, Ray, (4)	*Ithaca*,	2 Veterinary
Van Ostrand, Arthur Olin, (4)	*Ithaca*,	2 Veterinary
Van Vorst, Julian Purse, (4)	*Ithaca*,	1 Mech. Eng.
Van Winkle, Walton, (6)	*Ithaca*,	4 Mech. Eng.
Vaughan, Ernest Marsters, (8)	*Brooklyn*,	4 Med. (N.Y.C.)
Vaughan, Ralph, (6)	*Worcester, Mass.*,	3 Architecture
Vaughn, Eva Gertrude, A.B., (2)	*Muscogee, Florida*,	4 Arts
Vaughn, Leland Alexander, B.L., (2)	*Cuyahoga Fall, O.*,	1 Mech. Eng.
Veazey, John Armor, A.B., (2)	*New Wilmington, Pa.*,	4 Arts
Veith, George John, (4)	*Paterson, N. J.*,	2 Med. (N.Y.C.)
Venable, Emma Cabell, (1)	*Hampden Sidney, Va.*,	Sp. Agr.
Vencill, Albert Leander, (6)	*Utica*,	3 Mech. Eng.
Veve, Santiago, (4)	*Fajaido, Porto Rico*,	2 Civil Eng.
Vincent, Charles Ray, (4)	*Odell, Ill.*,	2 Mech. Eng.
Von Engeln, Oscar Diedrich, (4)	*Dayton, O.*,	2 Arts
Vonnegut, Arthur, (7)	*Indianapolis, Ind.*,	4 Arts
Vosburgh, Claude Garfield, (4)	*Elmira Heights*,	2 Civil Eng.
Wade, Henry Albert, M.D., (2)	*Brooklyn*,	Sp. Med. (N.Y.C.)
Wager, Max Louis, (4)	*New York City*,	1 Med. (N.Y.C.)
Wagner, Effingham Buckley, (6)	*Baltimore, Md.*,	4 Mech. Eng.
Waight, Armistead Taylor, (2)	*Mt. Vernon, O.*,	2 Mech. Eng.
Wait, Luther Ashton, (6)	*Fort Edward*,	Jr. Law
Wait, William Barker, (4)	*Watkins*,	2 Mech. Eng.
Walbran, Christopher James, Jr., (7)	*Brooklyn*,	4 Mech. Eng.
Walbridge, Lester Borden, (2)	*Brooklyn*,	1 Mech. Eng.
Walder, George Henry, (2)	*No. Tonawanda*,	1 Mech. Eng.
Waldie, Alma Tiedeman, (2)	*Philadelphia, Pa.*,	1 Arts
Waldie, Thomas Edward, (6)	*Brooklyn*,	3 Med. (N.Y.C.)
Walker, Jessie Crockett, (6)	*Brooklyn*,	3 Arts
Walker, Lester Vincent, (4)	*Babylon*,	2 Arts
Walker, William Joseph, A.B., (4)	*New York City*,	2 Med. (N.Y.C.)
Wallace, Errett, (4)	*West Gore, N. S., Canada*,	2 Agriculture
Wallace, James Garfield, (4)	*Batavia*,	2 Veterinary
Wallace, William Lewis, Jr., (7)	*Orange, N. J.*,	4 Mech. Eng.
Wallach, William Isidore, (8)	*New York City*,	4 Med. (N.Y.C.)
Wallis, Frank Gilbert, (6)	*Westfield, Pa.*,	1 Mech. Eng.
Wallower, Edgar Zollinger, C.E. (2)	*Harrisburg, Pa.*,	3 Mech. Eng.
Waltz, George Randall, (2)	*Williamsport, Pa.*,	1 Law

Walzer, Abraham, (4)	*Brooklyn*,	2 Med. (N.Y.C.)
Walzer, Isidor, (2)	*Brooklyn*,	1 Civil Eng.
Wanless, Richard, D.O., (4)	*Geneva*,	2 Medicine
Ward, Duane McQueen, (1)	*Lockport*,	1 Law
Ward, Florence May, (2)	*Ithaca*,	1 Arts
Ward, Grace Landers, (6)	*Buckland, Mass.*,	3 Arts
Ward, Harry Jay, (4)	*Peoria, Ill.*,	1 Civil Eng.
Ward, Joseph Marshall, (1)	*Battle Creek, Mich.*,	1 Agriculture
Wardwell, Arthur Soper, (9)	*Rome*,	4 Mech. Eng.
Wardwell, Harold Fletcher, (6)	*Rome*,	3 Architecture
Ware, John Sayers, (2)	*Stapleton*,	1 Med. (N.Y.C.)
Wareham, David Howard, (4)	*Omaha, Nebr.*,	Jr. Law
Waring, William Wallace, (6)	*Franklinville*,	3 Arts
Warner, Franklin Wray, (2)	*Holland*,	Sp. Law
Warner, Iva Lena, (2)	*Salamanca*,	1 Arts
Warner, Maurice Lee, (6)	*Beacon Falls, Conn.*,	2 Mech. Eng.
Warner, Raymond Curtis, (4)	*Chicago, Ill.*,	2 Mech. Eng.
Waterhouse, Ernest Comston, A.B., M.D., (2)	*Honolulu, Hawaii*,	Sp. Med. (N.Y.C.)
Warren, David Mack, (3)	*Chicago, Ill.*,	1 Mech. Eng.
Watkins, Robert Eugene, (4)	*Ithaca*,	2 Veterinary
Watkins, Warner Merriwether, B.S., (4)	*Milton, N. C.*,	4 Mech. Eng.
Watson, Carl Hawley, (2)	*East Orange, N. J.*,	1 Civil Eng.
Watson, William Harry, (4)	*Pittsburg, Pa.*,	Sp. Mech. Eng.
Watt, Harold Woodruff, (7)	*Wilkes-Barre, Pa.*,	3 Mech. Eng.
Watt, Homer Andrew, (6)	*Wilkes-Barre, Pa.*,	4 Arts
Way, Cassius, B.Agr., (7)	*Ithaca*,	4 Arts, 2 Veterinary
Wearne, Raymond Groves, (2)	*Binghamton*,	3 Arts
Weatherlow, Hugh Edgar, (8)	*Yorkshire*,	3 Civil Eng.
Weaver, Henry Earle, (4)	*Utica*,	2 Arts
Weaver, Harrison Ray, (2)	*Utica*,	1 Arts
Webb, James Archer, (2)	*Cleveland, O.*,	1 Mech. Eng.
Webb, John Lamar, (1)	*Springfield, O.*,	1 Mech. Eng.
Webb, Seth William, (8)	*Sugar Hill*,	4 Civil Eng.
Weber, Arthur Brothers, (6)	*Buffalo*,	Sr. Law
Weber, Florenz Pauline, M.E., (4)	*Jamestown*,	2 Arts
Weber, Salo Nordeman, A.B., (4)	*New York City*,	2 Med. (N.Y.C.)
Webster, Blakely Rayce, (6)	*Middletown*,	3 Med. (N.Y.C.)
Webster, George Pilsbury, (4)	*Cazenovia*,	3 Mech. Eng.
Webster, Louis David, (4)	*Ilion*,	2 Mech. Eng.
Webster, Stanley Adams, (3)	*Montclair, N. J.*,	1 Arts
Wechsler, Joseph, (6)	*New York City*,	3 Mech. Eng.

Wechsler, Philip, (6)	*New York City*,	2 Med. (N.Y.C.)
Weed, Ruth Sarissa, (5)	*North Rose*,	3 Arts
Weed, Randolph Woodruff, Jr., (2)	*Brooklyn*,	1 Mech. Eng.
Weedon, Wilfred Arthur, (6)	*Brisbane, Queensland, Australia*,	3 Mech. Eng.
Wegman, Ernest Conrad, (2)	*Ithaca*,	1 Mech. Eng.
Weiner, Edwin Morris Richard, (9)	*Kingston*,	4 Mech. Eng.
Weinstein, Henry, (6)	*New York City*,	3 Med. (N.Y.C.)
Weiss, Samuel, (2)	*New York City*,	1 Med. (N.Y.C.)
Welch, Leon Cowles, (8)	*Greene*,	4 Mech. Eng.
Welch, Stewart Henry, A.B., (6)	*Uniontown, Ala.*,	3 Med. (N.Y.C.)
Wellbery, Edward Montgomery, (6)	*Buffalo*,	3 Med. (N.Y.C.)
Weller, Byron McNeil, (4)	*Geneseo*,	2 Veterinary
Weller, Nellie Frances, (8)	*Ilion*,	4 Arts
Welles, Edward Murray, A.B., (6)	*Addison*,	3 Med. (N.Y.C.)
Wellhouse, Frederick James, (2)	*Topeka, Kansas*,	1 Mech. Eng.
Wells, Edward Hyde, Jr., (2)	*Utica*,	1 Civil Eng.
Wells, Jesse Woodhull, (2)	*Setauket*,	1 Civil Eng.
Wells, Wayne Bagnley, (6)	*Wellsville, O.*,	3 Mech. Eng.
Welsh, Thomas Whitney Benson, (4)	*Montclair, N. J.*,	2 Arts
Wenham, Russell Pelton, (3)	*Cleveland, O.*,	Sp. Agriculture
Werner, Rudolph Charles, Jr., (4)	*Brooklyn*,	2 Mech. Eng.
Wesson, Douglas Bertram, (7)	*Springfield, Mass.*,	3 Mech. Eng.
Wesley, Charles Frederick, (2)	*Camden, N. J.*,	1 Mech. Eng.
West, Albert Elmer, (4)	*Washington, D. C.*,	1 Civil Eng.
West, Livingston Dominick, (6)	*Buffalo*,	3 Mech. Eng.
West, Ray Benedict, B.S., (4)	*Ogden, Utah*,	3 Civil Eng.
West, Ralph McNaughton, (4)	*Peoria, Ill.*,	Sp. Mech. Eng.
Westgate, Mary Lauton, B.A., (2)	*Ithaca*,	1 Architecture
Westover, Harvey Leroy, (8)	*Austerlitz*,	4 Agriculture
Weter, Leo Aloysius, (6)	*Buffalo*,	Sr. Law
Wetherbee, Ashur Url, (4)	*Ithaca*,	3 Mech. Eng.
Wetherill, John Larkin, C.E., (2)	*Chester, Pa.*,	3 Mech. Eng.
Wheeler, Earl, B.S. in E.E., (1)	*Bridgeport, Kans.*,	Sp. Mech. Eng.
Wheeler, George Whiting, (6)	*Buffalo*,	3 Med. (N.Y.C.)
Wheeler, Lloyd Anthony, (2)	*Hinsdale*,	1 Veterinary
Wheeler, Merton Roue, (8)	*Salt Lake City, Utah*,	3 Mech. Eng.
Wheeler, Portius Rollin, (10)	*Peoria, Ill.*,	4 Arts
Wheeler, Ralph Hicks, (2)	*East Bloomfield.*,	Sp. Agriculture
Whipple, John Blaine, (6)	*Ithaca*,	3 Civil Eng.
White, Charles Francis, (4)	*Brooklyn*,	Jr. Law
White, George Starr, (4)	*Yonkers*,	2 Med. (N.Y.C)

White, Gershom Franklin, B.S., Ph.D., (4)	*Malta, O.*,	2 Medicine
White, Hamilton Howard, (4)	*Syracuse*,	2 Arts
White, Mabel Adena, (2)	*Greenwich*,	1 Arts
White, Robert Joseph, (4)	*Lockport*,	2 Medicine
White, Ward Benjamin, (4)	*Preston Hollow*,	2 Arts
White, Ward Emerson, (3)	*Parkersburg, W. Va.*,	2 Civil Eng.
White, William Bew, (2)	*Albany*,	1 Law
Whitehead, James Harold, (8)	*Buffalo*,	4 Mech. Eng.
Whitehead, Van Loan, Jr., (4)	*Buffalo*,	2 Arts
Whiting, George Scott, (6)	*Brooklyn*,	2 Arts
Whiting, Philip Charles, (1)	*Holyoke, Mass.*,	1 Arts
Whitney, Francis Luther, (7)	*Elmira*,	4 Arts
Whitney, Howard Vrooman, (2)	*Dunkirk*,	1 Mech. Eng.
Whitney, Leonard Harrison Martin, (4)	*Hornellsville*,	2 Civil Eng.
Whittlesey, Granville Egbert, (2)	*Pittsfield, Mass.*,	1 Mech. Eng.
Whitwood, Lancelot, (2)	*Canisteo*,	1 Civil Eng.
Wicks, Charles Hall, (6)	*Cohoes*,	3 Arts
Wickser, Philip John, (4)	*Buffalo*,	2 Arts
Wien, Paul A, (8)	*Mansfield, O.*,	4 Mech. Eng.
Wienhoeber, William Herman, (4)	*Chicago, Ill.*,	1 Civil Eng.
Wigley, Chester Greenhalgh, (6)	*Yonkers*,	3 Civil Eng.
Wigley, William Roy, (4)	*Yonkers*,	3 Mech. Eng.
Wilcox, Henry Hopson, (8)	*Potsdam*,	4 Med. (N.Y.C.)
Wilcox, Roy Franklin, (4)	*Council Bluffs, Iowa*,	Sp. Agr.
Wilde, Lydia Mae, (2)	*Cranesville*,	Sp. Arts
Wilder, Alfred Illsley, (1)	*Allendale, N. J.*,	Sp. Agriculture
Wilder, Edward Tucker, (8)	*Elmhurst, Ill.*,	3 Mech. Eng.
Wilder, Harold, (4)	*Elmhurst, Ill.*,	2 Arts
Wilder, La Verne Arthur, (6)	*Ithaca*,	Sr. Law
Wilhelm, Karl Edward, (2)	*Buffalo*,	1 Mech. Eng.
Wiley, Clarence Fairfax, (6)	*Chicago, Ill.*,	2 Mech. Eng.
Wilke, William Leonard, (2)	*Buffalo*,	1 Mech. Eng.
Wilkes, Stuart Ball, (5)	*Buffalo*,	3 Arts
Wilkins, George Raymond, (3)	*Buffalo*,	1 Arts
Wilkinson, Edith L, (2)	*Emporia, Kans.*,	2 Arts
Will, Walter, (2)	*Rochester*,	1 Mech. Eng.
Willard, Luvia Marguerite, (2)	*East Angus, Que., Can.*,	1 Medicine
Willard, Stephen Franklin, Jr., (2)	*Wethersfield, Conn.*,	1 Agriculture
Willcox, Abel Comstock, (8)	*Smyrna*,	4 Arts
Willcox, James DeWitt, (6)	*Montgomery, Ala.*,	3 Civil Eng.
Willets, Ray Douglas, (6)	*Chicago, Ill.*,	4 Mech. Eng.
Willey, Wilford Bennett, (6)	*Ithaca*,	3 Arts

Willgoose, Arthur Linforth, (4)	*Brooklyn*,	2 Civil Eng.
Williams, Albert Blake, (8)	*Brooklyn*,	2 Mech. Eng.
Williams, Burr Fiske, (7)	*Brockport*,	4 Arts
Williams, David Miles, (3)	*Utica*,	Sp. Agriculture
Williams, Edwin Clifford, (4)	*Washington, D. C.*,	2 Civil Eng.
Williams, Harold Hale, (2)	*Albany*,	1 Civil Eng.
Williams, Ira, (3)	*Philadelphia, Pa.*,	1 Civil Eng.
Williams, J Stewart, (4)	*Kingston, Pa.*,	2 Civil Eng.
Williams, John Tainsh, (1)	*Ithaca*,	Sp. Mech. Eng.
Williams, Maurice William, B.S., (2)	*Durhamville*,	Sp. Civil Eng.
Williamson, John Kennedy, (8)	*Bethel, Conn.*,	1 Mech. Eng.
Willis, Ralph Sanderson, (6)	*Brooklyn*,	3 Mech. Eng.
Wills, John Gordon, B.S.A., (6)	*Chateaugay*,	3 Veterinary
Willson, Frederic Cornelius, (4)	*Ithaca*,	2 Veterinary
Wilson, David, A.B., (6)	*Amsterdam*,	3 Med. (N.Y.C.)
Wilson, Harry Keith, (4)	*Bloomington, Ill.*,	2 Civil Eng.
Wilson, John Crosier, (8)	*Hall's Corners*,	4 Mech. Eng.
Wilson, Joseph Shields, (2)	*Wilmington, Del.*,	1 Mech. Eng.
Wilson, Leroy Alonzo, (2)	*Guilford*,	1 Mech. Eng.
Wilson, Martin Luther, (6)	*Ithaca*,	3 Arts
Wilson, Robert, (6)	*Brooklyn*,	3 Mech. Eng.
Wiltse, Chauncey Livingston, (4)	*Fullerton, Neb.*,	2 Arts
Winans, James Albert, A.B., A.M., (4)	*Ithaca*,	Jr. Law
Wincor, Henry, (6)	*New York City*,	2 Med. (N.Y.C.)
Winder, Adam Heber, (4)	*Dayton, O.*,	Jr. Law
Wing, Lois Watson, (2)	*Ithaca*,	1 Arts
Wing, Lucius Arthur, B.Sc., (2)	*Columbus, O.*,	3 Med. (N.Y.C.)
Wing, Walter Sterling, (6)	*Detroit, Mich.*,	3 Mech. Eng.
Winne, Worden Elliott, (4)	*Ames*,	Jr. Law
Winslow, Elizabeth Bishop, A.B., (3)	*Ithaca*,	2 Medicine
Winslow, Floyd Stone, (8)	*Henrietta*,	4 Med. (N.Y.C.)
Winslow, John, (2)	*Ithaca*,	1 Mech. Eng.
Wise, Frank Lounsbury, B.A., (4)	*New York City*,	2 Mech. Eng.
Wise, Harold Jacob, (8)	*Wheeling, W. Va.*,	4 Mech. Eng.
Witbeck, Benjamin Franklin, (4)	*Albany*,	2 Mech. Eng.
Wolcott, George Norton, (2)	*Ithaca*,	1 Agrieulture
Wolcott, Kenneth Oliver, (2)	*Batavia, Ill.*,	1 Mech. Eng.
Wolcott, William Albert, (2)	*Le Roy*,	1 Mech. Eng.
Wolf, Charles, (2)	*New York City*,	1 Med. (N. Y. C.)
Wolf, Luther Otterbein, (2)	*Keithsburg, Ill.*,	1 Civil Eng.
Wolfe, Isidor Erlich, (4)	*Brooklyn*,	Jr. Law
Wolfersperger, John Jacob, (8)	*Sterling, Ill.*,	4 Arts

Wolheim, Louis Robert, B.S., (6)	*New York City*,	4 Mech. Eng.
Wonderly, George Arthur, Ph.B., (2)	*New Kingston, Pa.*,	2 Mech. Eng.
Wood, Charles Bryant Drake, (2)	*Wilkes-Barre, Pa.*,	1 Mech. Eng.
Wood, Edward Ainslie, C.E., (2)	*Dallas, Texas*,	2 Civil Eng.
Wood, Edson LeVerne, (8)	*Savannah*,	4 Arts
Wood, Frederic Jarvis, (2)	*Babylon*,	1 Law
Wood, Frank Travers, B.S., (4)	*Richmond, Va.*,	4 Mech. Eng.
Wood, Frederick William, (4)	*Berkeley, Calif.*,	2 Veterinary
Wood, James Hewitt, (6)	*Mayfield*,	Sr. Law
Wood, Percy Osmun, (4)	*Ithaca*,	2 Agriculture
Wood, Rollin, (8)	*Muncie, Ind.*,	4 Civil Eng.
Wood, Walter Dougan, (2)	*Port Richmond*,	1 Mech. Eng.
Wood, William Maxwell, (4)	*Portland, Ore.*,	2 Mech. Eng.
Woodford, Fred, (2)	*Ithaca*,	1 Mech. Eng.
Woodhull, Stephen Curtis, D.O., (3)	*Ithaca*,	1 Medicine
Woodland, LeRoy, (8)	*Chicago, Ill.*,	4 Mech. Eng.
Woodruff, George Carroll, (2)	*Camden*,	1 Law
Woods, Samuel Hamilton, (8)	*Port Jervis*,	4 Mech Eng.
Woodward, Dasie Lucile Field, (4)	*Ithaca*,	3 Arts
Woodworth, Olin Fitch, (4)	*Borodino*,	2 Mech. Eng.
Worden, Harold Everett, (5)	*Ithaca*,	2 Mech. Eng.
Worden, John Halleck, (4)	*Westmoreland*,	2 Arts
Workman, Isaac, (4)	*New York City*,	1 Med. (N.Y.C.)
Worthington, Harriet Elizabeth, (2)	*St. Louis, Mo.*,	2 Arts
Wortman, George Augustus, (4)	*Kingston*,	2 Mech. Eng.
Wortmann, Otto, B.S., (6)	*New York City*,	4 Mech. Eng.
Wrench, Jesse Erwin, (8)	*Afton*,	4 Arts
Wright, Edward Albin, (8)	*Lewiston*,	2 Mech. Eng.
Wright, Frank Henry, (6)	*Rhinebeck*,	3 Veterinary
Wright, Ivan Horton, (1)	*Gloversville*,	1 Mech. Eng.
Wright, James Chester, (2)	*Auburn*,	1 Mech. Eng.
Wright, John Henry, (2)	*Ithaca*,	1 Arts
Wright, Roy Rex, (10)	*Saranac Lake*,	3 Architecture
Wright, Thomas Temple, B.A., (4)	*Rutherglen, Va.*,	2 Civil Eng.
Wright, William Titus, (4)	*Brooklyn*,	1 Mech. Eng.
Wyckoff, Ralph Fenton, (4)	*Pasadena, Calif.*,	2 Civil Eng.
Wynkoop, George Edmund, (7)	*Bath*,	Sr. Law
Wynkoop, Roy Baldwin, (4)	*Chemung*,	2 Medicine
Wurst, Frank Euchner, (2)	*Holland*,	1 Agriculture
Yates, William Henry, (6)	*Negaunee, Mich.*,	1 Mech. Eng.
Ycasiano-Roxas, Francisco, B.A., (4)	*Bulacan, P. I.*,	1 Mech. Eng.

Yeomans, Mabel Ford, (6)	*Oxford*,	3 Arts
Yih, Koliang, A.B., (2)	*Foochow, Fookien, China*,	1 Agriculture
Yohe, Curtis Miller, (2)	*Pittsburg, Pa.*,	1 Arts
York, Everett Magnon, (2)	*Flushing*,	1 Arts
Yorkey, Charles John, (8)	*Parish*,	Sr. Law
Yum, William, (2)	*New York City*,	1 Med. (N.Y.C.)
Yundt, Harry Schultze, (1)	*Lancaster, Pa.*,	1 Mech. Eng.
van Zandt, Fanny Brice, (1)	*Middletown*,	Sp. Agr.
Zebnder, Anthony Charles, (6)	*Newark, N. J.*,	3 Med. (N.Y.C.)
Zener, Robert Dodge,(6)	*Indianapolis, Ind.*,	2 Mech. Eng.
Zimmerman, Earl William, (6)	*Fort Plain*,	3 Mech. Eng.
Zingher, Abraham, (4)	*New York City*,	2 Med. (N.Y.C.)
Zorn, Freda, (4)	*Brooklyn*,	2 Arts
Zuckerman, Jerome, (4)	*New York City*,	2 Med. (N.Y.C.)
Zuckerman, Samuel, (2)	*New York City*,	1 Med. (N.Y.C.)

STUDENTS IN SHORT WINTER COURSE IN AGRICULTURE.

WINTER 1906.

Allen, Howard,---------- *Treadwell*
Amerman, George Loveless, A.B. (Yale), 1890, Ph.D. (same), 1892---------- *Syracuse*
Armstrong, Frederick Leonard,---------- *Troy*
Atkins, Floyd L,---------- *McGraw*
Austin, Bessie Earll,---------- *Ithaca*
Bagley, Corliss,---------- *Salt Point*
Ballantyne, Fred,---------- *Walton*
Bauder, Celora Martin,---------- *Nanticoke*
Bergh, John Smith,---------- *Breakabeen*
Blakeslee, Roscoe Conklin,---------- *Greenville*
Bloomer, Joseph Watkins,---------- *Marlboro*
Boicourt, Alfred Evan,---------- *Westfield*
Boyle, Louis Franklyn,---------- *Murray, Utah*
Braucher, Emma Alberta,---------- *Ithaca*
Brigham, William Houghton,---------- *Bolton, Mass.*
Brown, Earl Wilber,---------- *Sanquoit*
Brown, Harry David,---------- *So. Apalachin*
Brown, Levi H,---------- *So. Jefferson*
Brown, Ray Austin,---------- *Seward*
Brown, Spicer Elwin,---------- *Bridgewater*
Brown, Earll William,---------- *Skaneateles*
Burdick, Howland---------- *Kingston, R. I.*
Burnam, Lemuel Arthur,---------- *Bolton, Mass.*
Burrows, Wesley Ward,---------- *Hermon*
Butler, Curtis Rogers,---------- *Richmondville*
Burtis, Louise Montfort,---------- *Oaks Corners*
Campbell, Fred William,---------- *Wegatchie*
Campbell, Herbert,---------- *Wegatchie*
Cannon, Curtis Leon,---------- *Bridgeville, Del.*
Caraswell, Geroge Stewart,---------- *Argyle*
Casler, Ashton,---------- *Little Falls*
Chambers, Emerson Irving,---------- *Lisbon*
Champlin, Frank Baumes,---------- *Ithaca*
Charles, Julia Octavia,---------- *Ithaca*
Chenoweth, Jesse Alvan,---------- *Greenville, O.*
Chase, Lynn Dwight,---------- *Burlington Flats*

Clay, Fred,---------- *Summit*
Child, John Amos,---------- *Malone*
Clink, Wilington Lewis,---------- *Little York*
Conger, Frank S,---------- *Newark, N. J.*
Cook, William Alexander,---------- *Brooklyn*
Crow, Frank,---------- *Owasco Lake*
Cushman, Jessie Manley, B.S., 1896,---------- *Ithaca*
Cuyle, Leon Samuel,---------- *Tacoma*
Daniels, Morton Earl,---------- *Perry*
Davidson, Clarence M,---------- *Huntington, W. Va.*
De Bell, Howard Sidney,---------- *Ithaca*
Derrick, Charles Burbeck,---------- *Cooperstown*
Dininger, Erle E,---------- *Greenville, O.*
Dunkelberg, Charles Mllton,---------- *Gouverneur*
Dutton, William Wilbor,---------- *Youngstown*
Elderkin, Sheldon,---------- *Springville*
Ellinwood, Hiram Ross,---------- *Clyde*
Ennis, Bernard Patrick,---------- *Moravia*
Erkenbeck, Fred Palmer,---------- *Fayetteville*
Fairbanks, Stella Grace,---------- *Williamson*
Farquharson, James Hammill,---------- *Buffalo*
Fasset, Espy Louis---------- *East Springfield*
Feistel, Charles Frank,---------- *Carthage*
Fennen, Floyd,---------- *Gilboa*
Ferris, Harry Shaw,---------- *Atwaters*
Field, Marcus Edson,---------- *Tully*
Fish, Arethusa Poff,---------- *Ithaca*
Fletcher, Lydia Adeline,---------- *Bainbridge*
Foote, James Hollis,---------- *Malone*
Fowler, Ralph Clarke Heald,---------- *Mt. Morris*
Frankel, Isaac,---------- *Judson*
Freeman, Harry Waterman---------- *Middleport*
Frisbee, Clarence Edward,---------- *Delhi*
Fuertes, Mary Katherine,---------- *Ithaca*
Gaylord, Clarence,---------- *Bridgewater*
Gilson, Eva Blanche,---------- *Washington, D. C.*
Gibson, Harry Edwin,---------- *Meridale*
Gilbert, Henry Ward,---------- *Gilboa*
Gilmore, Elizabeth May---------- *Ithaca*
Glidden, Jay Osborn,---------- *Niobe*
Griffin, Edythe De Voe,---------- *Ithaca*
Hamilton, Maude Cora,---------- *Ithaca*
Hanford, Grace,---------- *Ithaca*

Herriman, Horace Hartson,---*Syracuse*
Herendeen, Ada Chase,---*Geneva*
Herendeen, Annie Boynton,---*Geneva*
Herrick, Archibald Campbell,---*Washingtonville*
Hodges, Leonie Rose,---*New York City*
Hogue, Robert Reid,---*Angelica*
Holmes, Birdsell Charles,---*Cobleskill*
Hoose, Alva Lindon,---*Duane*
Hopper, Roy P,---*Ithaca*
Horn, John Brensley,---*Wilkes-Barre, Pa.*
Horton, Chauncey Todd,---*New York City*
Howe, Marshall Mehaffey,---*Buffalo*
Hungerford, Clarke Lockwood,---*Ithaca*
Hunt, Burton,---*Hermon*
Huntley, Oakley Amos,---*Phoenix*
Huson, Ross,---*Penn Yan*
Joslin, Clarence W,---*Hoosick Falls*
Kepner, Maude Agnes,---*Ithaca*
Kingsley, D Ernest,---*Pittsford*
Kintz, William Wilder,---*Charlotte*
Knight, William Traver,---*Racine, Wis.*
Isbell, Loran,---*Little York*
James, John Bowen,---*Eagle Bridge*
Jeffery, Fred Arthur,---*Marion*
Jones, Archie,---*Leraysville, Pa.*
Kellogg, Claude Monroe,---*Ithaca*
Kelly, John Harrison,---*Lysander*
Kennedy, Richard Ridgway,---*Philadelphia, Pa.*
Knauss, Albert Henry,---*Breakabeen*
Kortright, William,---*Kerhonkson*
Krum, Walter Garnet,---*Ithaca*
Larrison, Bert,---*Van Etten*
Lee, Burdette Byron,---*Skaneateles*
Loeb, Augusta Johanna,---*Fredonia*
Lewis, John Henry,---*Auburn*
Lyon, Walter Stanley,---*Groton*
McAllister, Helen Calysta,---*Ithaca*
McCarthy, William Authony,---*Addison*
McDougall, Brockly,---*Hamden*
McFall, Beatrice Mabel,---*Ithaca*
Mack, Julia Whiton, A.B., 1901,---*Ithaca*
McKay, Charles Gordon,---*Nunda*
Manchester, Bessie,---*Ithaca*

Martin, Lynn Evan, ---------- *Ransomville*
Matthews, Clarence Edward, ---------- *Pittsford*
Mattoon, Eleanor Edna, ---------- *Ithaca*
Meredith, Harry Walker, ---------- *Wallkill*
Middaugh, Harry W, ---------- *Brookton*
Miller, Jay Arthur, ---------- *Dansville*
Miner, Westley Frank, ---------- *Chateaugay*
Morehouse, Harold St. John, ---------- *Darien, Conn.*
Morrison, James William, ---------- *Richmond, Ind.*
Munger, Berton Wilcox ---------- *Byron*
Munro, le Koy, ---------- *Elbridge*
Navins, Robert Joseph, ---------- *Barrytown*
Neish, Leon Duncan, ---------- *Shavertown*
Nettleton, David R, ---------- *Moravia*
Newell, Charles Warwick, ---------- *Durham*
Nichols, Colin E, ---------- *Lewiston*
Nicholson, Arthur Donaldson, ---------- *Wellsburg, W Va.*
Nickerson, Verge George, ---------- *Manorkill*
Northrup, Carrie Myers, A.B., 1896, ---------- *Ithaca*
Noxon, May Haight, ---------- *Ithaca*
Olmstead, John, ---------- *Sennett*
Osbeck, John Walter, ---------- *Cortland*
Osborn, Burton William, ---------- *Meridale*
Osborne, Charles Terbell, ---------- *East Hampton*
Page, Harvey Richard, ---------- *So. Edmeston*
Parker, Clarence Floyd, ---------- *Marathon*
Perry, Mary Waldo, A.B. (Elmira Coll.), 1892, B.Pd. (Albany Nor. College), 1899, ---------- *Ithaca*
Pierce, Clarence Judson, ---------- *Coopers Plains*
Phillips, Alva Bradley, ---------- *Berlin Heights, O.*
Pochet, Camille Jacques, ---------- *Dreux, France*
Porter, Norman Grant, ---------- *New Hartford*
Potter, George William, ---------- *Johnstown*
Putnam, Victor Haven, ---------- *Rye*
Reed, Chester Otis, ---------- *Newark*
Reed, Ethel Seely, ---------- *Bradford, Pa.*
Reiser, Adella, ---------- *Collins Center*
Reiser, Charles Leonard ---------- *Collins Center*
Roesch, Milton E, ---------- *Fredonia*
Rogers, Wilson, ---------- *Sandusky*
Roseberry, Joseph Lee, ---------- *New York City*
Rothemyer, William, ---------- *Auriesville*
Rowley, Anson Bernard, ---------- *Fabius*

Rumsey, George Warner,.....*Erin*
Seymour, E Eleanor,.....*Westfield*
Slingerland, Effie Earll,.....*Ithaca*
Spear, Saidie Francena,.....*Hoosick Falls*
Santee, Ellis Monroe, M. D. (Hom. Med. Coll. of Mo.), 1890, *Cortland*
Scott, Underwood Irving,.....*Bridgewater*
Searl, Lyman Morris,.....*Franklinville*
Selmes, Richard James,.....*Unionville*
Searl, Raymond Wendell,.....*Franklinville*
Senn, Harold Jay,.....*New London*
Shaeffer, William Edmunds, Jr.,.....*Lockport*
Shank, Charles Rowley,.....*Auburn*
Sharkey, Roscoe James,.....*Helena*
Sharp, Earnest Howard,.....*Forest Home*
Sheldon, Leon Arthur,.....*Copenhagen*
Sherman, Benjamin Francis,.....*West Kingston, R. I.*
Shevalier, Elmer Raymond,.....*Ithaca*
Shintaro, Arimoto,.....*Mimasaka, Japan*
Silkworth, Worthington,.....*Mattituck*
Smith, Claud Swarthout,.....*Lodi*
Smith, DeWitt Tom.....*Delhi*
Smith, Ray Philip,.....*Owego*
Smith, William Bradford,.....*Moira*
Somers, William Burton,.....*Buffalo*
Soule, James Briggs,.....*Quaker Street*
Speares, Herbert William,.....*Rochester*
Speich, Edward John,.....*Marcellus*
Stanard, Clifford Grant,.....*Fabius*
Steele, Perez Russell,.....*Windham*
Steenbergl, Earl,.....*Potsdam*
Sturdevant, Winifred,.....*Cragsmoor*
Styer, Joseph Vernon,.....*Spring City, Pa.*
Styer, Oscar,.....*Glen Moore, Pa.*
Styer, Webster,.....*Spring City, Pa.*
Swick, Alonzo Pettit,.....*Ransomville*
Swick, Hamilton Augustine,.....*Ransomville*
Teall, Homer Combs,.....*Lysander*
Ten Eyck, George H,.....*Fabius*
Tenney, William Jefferson,.....*Hamlin*
Thomas, Asenath,.....*Ithaca*
Thorne, John Kneeland,.....*Skaneatelas*
Tifft, Harold Percy,.....*Sandy Creek*
Tomlinson, Grover,.....*Indianapolis, Ind.*

Townley, Agnes Hagin,.....*Ithaca*
Troy, Peter Joseph,.....*Ithaca*
Truckell, William Charles,.....*Lacona*
Tuthill, Willis Byron,.....*Remsenberg*
Tyler, Frank Locey,.....*Ithaca*
Tyrrel, Charles,.....*Lake George*
Utley, Everell,.....*East Otto*
Van Buren, Samuel Lockwood,.....*Stockport*
Van Hoesen, William Morton,.....*Athens*
Vann, Bert Irving,.....*Willow Creek*
Voorhees, Schuyler Glen,.....*Amsterdam*
Vrooman, Fairington Ray,.....*Central Square*
Wait, Oliver, Jr.,.....*Rexford Flats*
Waite, William,.....*Etna*
Wall, Clarence Henry,.....*Savona*
Webster, Benjamin Garfield,.....*Auburn*
Wertz, Edith Amy,.....*Minneapolis, Minn.*
Wescott, George, Jr.,.....*Forest Home*
Westcott, Harry Aloney,.....*Moira*
West, Mary Morrell,.....*Ithaca*
Wheeler, Evan,.....*Hilton*
Wheelock, Wendell Dewey,.....*Falconer*
Whetzel, Minnie Mae,.....*Forest Home*
Williams, Adelbert Frank,.....*Varna*
Williams, Alfred Loyal,.....*Mariners Harbor*
Willis, Minnie Strong,.....*Ithaca*
White, Walter Pengrine Kirk,.....*Batavia*
Williams, David Miles,.....*Utica*
Wilson, Frank,.....*Livingston*
Wolcott, Marion Delia,.....*Ithaca*
Wright, Walter George,.....*Manorkill*
Wright, William Ellis,.....*Columbus, N. J.*
Young, Kingsley Flavel,.....*East Palmyra*
Yohe, James Harold,.....*Pittsburg, Pa.*
Zerns, Anne Jane,.....*Watertown*
Zinke, Frank Louis,.....*Warsaw*

GENERAL SUMMARY

Government, Teachers, and Other Officers.

TRUSTEES :—		
Ex officio	9	
Elected—By the Board	20	
By the Alumni	10	
By the New York State Grange	1	
Total		40
TEACHERS :—		
Professors	103	
Assistant Professors	51	
Lecturers	13	
Instructors	150	
Assistants, etc.	178	
Total	495	
Non-Resident Lecturers	26	
Whole number of Teachers		521
LIBRARY STAFF	19	
OTHER OFFICERS	30	
PREACHERS	27	

Students.

GRADUATE DEPARTMENT :—		
Fellows	25	
Scholars	16	
Graduates, candidates for Advanced Degrees	212	
Graduates not candidates for Degrees	20	
Total, deducting for 41 names counted twice	232	
GRADUATE STUDENTS IN UNDERGRADUATE COURSES	254	
Total Graduate Students		486
COLLEGE OF ARTS AND SCIENCES :—		
Senior Class	151	
Junior Class	124	
Sophomore Class	170	
Freshman Class	246	
Special Students	14	
Total		705

COLLEGE OF LAW :—		
Senior Class	64	
Junior Class	68	
First Year Class	85	
Special Students	5	
Total		222
THE MEDICAL COLLEGE :—		
Senior Class, New York City	61	
Junior Class, New York City	84	
Sophomore Class, New York City	71	
Freshman Class, New York City	80	
Specials, New York City	30	
Sophomore Class, Ithaca	26	
Freshman Class, Ithaca	32	
Special, Ithaca	1	
Total		385
COLLEGE OF AGRICULTURE :—		
Senior Class	18	
Junior Class	18	
Sophomore Class	33	
Freshman Class	59	
Special Students	102	
Total		230
STATE COLLEGE OF VETERINARY MEDICINE :—		
Third Year Class	27	
Second Year Class	41	
First Year Class	20	
Total		88
COLLEGE OF ARCHITECTURE :—		
Senior Class	7	
Junior Class	13	
Sophomore Class	14	
Freshman Class	36	
Special Students	9	
Second Year Painting	1	
Special Painting	1	
Total		81
COLLEGE OF CIVIL ENGINEERING :—		
Senior Class	54	
Junior Class	82	
Sophomore Class	101	
Freshman Class	184	
Special Students	4	
Total		425

SIBLEY COLLEGE OF MECHANICAL ENGINEERING:—

Senior Class	206
Junior Class	209
Sophomore Class	297
Freshman Class	365
Special Students	19
Total	1096

Total number of regular students, deducting for names counted twice 3452

ADDITIONAL ENROLLMENT.

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Geographical Summary.

New York	1939	Utah	11	Peru	9
Pennsylvania	310	Minnesota	10	Australia	7
New Jersey	144	Kansas	9	India	7
Ohio	130	Delaware	9	Argentine Rep.	8
Illinois	122	West Virginia	9	Mexico	6
Massachusetts	80	Mississippi	8	Turkey	5
Dist. of Columbia	54	Vermont	8	Japan	4
Maryland	48	Washington	8	England	3
Connecticut	46	Arkansas	7	Norway	3
Virginia	32	New Hampshire	7	Ecuador	2
Indiana	28	South Carolina	7	Germany	2
Missouri	24	Nebraska	6	Holland	2
Michigan	23	Porto Rico	6	Nicaragua	2
California	20	Hawaii	5	Russia	2
Iowa	20	Louisiana	5	South Africa	2
Colorado	19	Montana	4	Sweden	2
Texas	18	Idaho	3	Bulgaria	1
Alabama	16	Florida	2	Columbia	1
Maine	15	Indian Terr.	2	France	1
Kentucky	14	Wyoming	2	Gautemala	1
Wisconsin	14	Oklahoma Terr.	1	Ireland	1
Tennessee	13	North Dakota	1	New Zealand	1
Georgia	12	South Dakota	1	Panama	1
Philippines	12	Canada	28	Switzerland	1
North Carolina	11	Cuba	13		
Oregon	11	Brazil	11	Total	3452
Rhode Island	11	China	9		

INDEX.

INDEX OF OFFICERS OF INSTRUCTION AND ADMINISTRATION.