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OF

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1899-1900

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THE UNIVERSITY CALENDAR.

1899–1900.

FALL TERM—1899.

Sept.	19 Tuesday	Entrance Examinations begin.
Sept.	25 Monday	ACADEMIC YEAR BEGINS. REGISTRATION of matriculated students.
Sept.	26 Tuesday	Last day of REGISTRATION of matriculated students. Matriculation of new students. University Scholarship Examinations begin.
Sept.	27 Wednesday	MATRICULATION of new students.
Sept.	28 Thursday	INSTRUCTION BEGINS in all Departments of the University. President's annual address to the students at 12:00 M.
Oct.	3 Tuesday	REGISTRATION of students in the Medical College in New York City.
Oct.	14 Saturday	Latest date for announcing subjects of Theses for Baccalaureate degrees in the General courses.
Nov.	30 Thursday	THANKSGIVING DAY.
Dec.	1 Friday	Latest date for announcing subjects of Theses for advanced degrees, and for the degree of C.E.
Dec.	23 Saturday	Christmas recess begins.

WINTER TERM—1900.

Jan.	3 Wednesday	REGISTRATION for the Term.
Jan.	10 Wednesday	Ninety-four Memorial Prize Competition.
Jan.	11 Thursday	FOUNDER'S DAY.
Jan.	12 Friday	Latest date for announcing subjects of Theses in Sibley College.
Feb.	22 Thursday	WASHINGTON'S BIRTHDAY.
March	24 Saturday	Spring recess begins.

SPRING TERM—1900.

April	3 Tuesday	REGISTRATION for the Term. Latest date for presenting Woodford Prize Orations.
April	16 Monday	Latest date for receiving applications for Fellowships and Graduate Scholarships.
May	1 Tuesday	Latest date for presenting Theses for advanced degrees. Latest date for presenting Theses for baccalaureate degrees.
May	4 Friday	Woodford Prize Competition.
May	25 Friday	Eighty-six Memorial Prize Competition.
May	30 Wednesday	DECORATION DAY.
June	1 Friday	Latest date for receiving applications for Teachers' Certificates, for Special Mention, for degrees in History and Political Science and in Natural History.
June	6 Wednesday	COMMENCEMENT at Medical College in New York City.
June	14 Thursday	Instruction ends.
June	15 Friday	Entrance Examinations begin.
June	17 Sunday	Baccalaureate Sermon.
June	19 Tuesday	Class Day.
June	20 Wednesday	Alumni Day. Annual Meeting of the Trustees.
June	21 Thursday	THIRTY-SECOND ANNUAL COMMENCEMENT.

SUMMER SESSION.

June	27 Wednesday	Summer term (of ten weeks) in Entomology and Invertebrate Zoology begins.
July	5 Thursday	REGISTRATION for the Summer Session (of six weeks).
July	6 Friday	Summer Session begins.
Aug.	16 Thursday	Summer Session ends.
Sept.	5 Wednesday	Summer Term in Entomology ends.

FALL TERM—1900.

Sept.	18 Tuesday	Entrance Examinations begin.
Sept.	24 Monday	ACADEMIC YEAR BEGINS. REGISTRATION of matriculated students.
Sept.	25 Tuesday	Last day of REGISTRATION of matriculated students. Matriculation of new students. University Scholarship Examinations begin.
Sept.	26 Wednesday	MATRICULATION of new students.
Sept.	27 Thursday	INSTRUCTION BEGINS in all departments of the University. President's annual address to the students at 12:00 M.
Oct.	2 Tuesday	REGISTRATION of students in the Medical College in New York City.
Oct.	15 Monday	Latest date for announcing subjects of Theses for Baccalaureate degrees in the General courses.
Nov.	— Thursday	THANKSGIVING DAY.
Dec.	1 Saturday	Latest date for announcing subjects of Theses for advanced degrees, and for degree of C.E.
Dec.	22 Saturday	Christmas recess begins.

WINTER TERM—1901.

Jan.	3 Thursday	REGISTRATION for the 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 respectively prescribe, in order to promote the liberal and practical education of the industrial classes in the several pursuits and professions in life." The act forbade the use of any portion of the aforesaid fund, or of the interest thereon, for the purchase, erection or maintenance of any building or buildings; but the several states claiming and taking the benefit of the provisions of the act were required, by legislative assent previously given, "to provide, within five years at least, not less than one college" for carrying out the purposes of the act.

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

Meantime Ezra Cornell was dreaming of a project which he had

come to formulate in the memorable words: "I would found an institution where any person can find instruction in any study." By a union of his own resources with the proceeds of the land grant he saw a way to a realization of his purpose. This union was effected by the act of April 27, 1865, establishing Cornell University, and appropriating to it the income of the sale of public lands granted by congress to the State of New York; and the founder's broad conception of a university was reconciled with the narrower purpose of the act of congress donating public lands to the states establishing colleges for the benefit of agriculture and the mechanic arts, by providing in the charter that "such other branches of science and knowledge may be embraced in the plan of instruction and investigation pertaining to the university, as the trustees may deem useful and proper." In the same liberal spirit it was provided in regard to the board of trustees, that "at no time shall a majority of the board be of one religious sect, or of no religious sect;" in regard to professors and other officers, that "persons of every religious denomination, or of no religious denominations shall be equally eligible to all offices and appointments;" and in regard to students, that the university should admit them "at the lowest rates 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 the land should be paid to Cornell University. By act of the legislature passed April 10, 1866, the state had authorized the comptroller to sell the scrip remaining unsold, that is to say, scrip for eight hundred and thirteen thousand nine hundred and twenty acres, to the trustees of Cornell University at a price of not less than thirty cents per acre; and in case the trustees should not agree to make the purchase, the legislature had further authorized the sale "to any person or persons," on the terms above named, provided that proper security should be given that "the whole

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

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

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

him with college scrip, and paying at once in cash to the comptroller the full amount of Cornell's bonds 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 contract 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 chairman), have already realized a net return of about four million dollars. The absolute ownership by the university of the Cornell Endowment Fund was, on May 19, 1890, established by the decision of the Supreme Court of the United States, affirming a similar 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.*"

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* Term of office (5 years) expires in 1900, the next group of six in 1901, etc., etc.
(1) *B.*, elected by Board; (2) *A.*, elected by Alumni.

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DEPARTMENTS AND FACULTIES.

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

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

3. THE UNIVERSITY FACULTY.—The University Faculty consists of the President, who is *ex officio* the presiding officer, and the Professors and Assistant Professors of the University, including the Professors and Assistant Professors of the New York State Veterinary College and the New York State College of Forestry. It is the function of the University Faculty to consider questions which concern more than one Special Faculty, and questions of University policy. 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 guidance and government of its students; and to recommend to the Trustees such candidates for degrees as may have completed the requirements.

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

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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.

CASPAR RENE GREGORY, A.M., Ph.D., LL.D., *Leipsic, Germany.*
Religious Thought in Germany.

CHARLTON T. LEWIS, Ph.D., *New York City*
Insurance.

KARL BUDDE, D.D., *Strassburg, Germany.*
The Pre-exilic Religion of Israel.

I. The Origin of the Yahweh-Religion. II. Yahweh and His Rivals. III. Priests, Prophets and Kings as Champions of Yahweh. IV. Foreign Powers and the Written Prophecy of the Northern Kingdom. V. The Similar Conflict in the Southern Kingdom. VI. Judah's Collapse, and the Bases of its Re-establishment.

WILLIAM H. TOLMAN, Ph.D., *New York City.*
Municipal Problems.

WILLIAM H. BALDWIN, A.B., *New York City.*
Practical Business Management.

HENRY G. HANCHETT, *New York City.*
Analytical Recital.

WALTER F. FREAR, A.B., LL.B., *Hawaiian Islands.*
Hawaii: Its Government.

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

THOMAS M. OSBORNE, A.M., *Auburn.*
Business Management.
Beethoven and the Symphony.
Schubert and the Song.

ALBERTO F. LARCO, M.E., *Trujillo, Peru.*
Peru.

ANTONIA C. DE P. P. MAURY, *Cambridge, Mass.*
Stars and Stellar Evolution.

HENRY E. KREHBIEL, *New York City.*
Folk Song in America.

CHARLES GRAY WAGNER, B.S., M.D., *Binghamton.*
Insanity.

EDOUARD ROD, Ph.D., *Paris, France.*
Le Roman Français.
Cyrano de Bergerac.

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Plans of Towns.
Organization of Building Trades.
Stone Churches.

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Journalism.

CHARLES WALDSTEIN, Litt.D., Ph.D., L.H.D., *Cambridge, Eng.*
The Spirit of Greek Art.

JOHN W. FOSTER, A.B., LL.B., LL.D., *Washington, D. C.*
Diplomacy.

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Wagner and the Opera.

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II. The Distribution of Color in Decoration.
III. The History of the Craft in Stained Glass.
IV. The History of the Styles in Stained Glass.

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Pen and Ink Rendering.

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Patent Laws of the United States.

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On Masonry Structure.

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The Buffalo Breakwater.

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The Philadelphia Water Works System.

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The Engineer at Work.

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DAVID MOLITOR, *Washington, D. C.*
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EDWIN DURYEA, C.E., *Brooklyn*
Qualities and Habits of Work Necessary to attain Success in Civil Engineering.

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Wireless Telegraphy.

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Diesel and Other Gas-Engines.

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OBERLIN SMITH, M.E., *Bridgeton*
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AUGUSTA REDDINGTON, Assistant Nurse in the Cornell Infirmary, *Cornell Infirmary*

MIRIAM AURELIA SNAITH, Assistant Nurse in the Cornell Infirmary, *Cornell Infirmary*

MARIE LOUISE MACBETH, Assistant to the Warden of Sage College, *Sage Cottage*

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 seven representatives from the Trustees, Alumni, and Faculty of the University, who, together with eight students representing officially the different branches of athletics, constitute the Athletic Council. The Association owns Percy Field, the boats and boat houses, a steam-launch and other athletic equipment. The Athletic Council is charged with the general 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. The officers and members of the Athletic Council are as follows :

Officers.

E. W. HUFFCUT.....President.

R. H. TREMAN.....Graduate Treasurer.

F. S. PORTER.....Secretary.

Graduate Members:—R. H. Treman, L. M. Dennis, E. W. Huffcut, D. C. Lee, C. W. Pound, F. D. Colson. *Undergraduate Members:*—W. C. Dalzell, captain of the crew ; L. G. Robbins, manager of the navy ; J. K. Bole, baseball captain ; W. L. Wright, baseball manager; R. D. Starbuck, football captain ; F. S. Porter, football manager ; R. Deming, captain of the athletic team ; A. D. Warner, manager of the athletic team.

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. They must have certificates of good moral character, and students from other colleges or universities are required to furnish from those institutions certificates of honorable dismissal.

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

ENTRANCE EXAMINATIONS.

Examinations in all the subjects required for admission to the University are held, *at Ithaca only*, twice in the year as follows: 1. In June, at the end of the spring term; 2. In September, at the beginning of the fall term. No examination of candidates for admission will be held at any other time or place. Further information in regard to the time of examinations may be found on pp. 7 and 49. Specimen copies of examination papers will be sent on application to the Registrar.

ADMISSION ON EXAMINATION.

I. The Primary Entrance Examinations.

(*Required for all courses, [except as stated elsewhere] but not sufficient for admission to the University without the advanced examinations indicated on pp. 37–49*).

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

The books prescribed for 1900 are: *A*. Dryden, Palamon and Arcite; Pope, Iliad, Books i, vi, xxii, xxiv; The Sir Roger de Coverley Papers in the Spectator; Goldsmith, The Vicar of Wakefield; Scott, Ivanhoe; De Quincey, The Flight of a Tartar Tribe; Cooper, The Last of the Mohicans; Tennyson, The Princess; Lowell,

The Vision of Sir Launfal. *B.* Shakespeare, Macbeth; Milton, Paradise Lost, Books i and ii; Burke, Conciliation with America; Macaulay, Essays on Milton and on Addison.

For 1901: *A.* Shakespeare, Merchant of Venice; Pope, Iliad, Books i, vi, xxii, xxiv; The Sir Roger de Coverley Papers in the Spectator; Goldsmith, The Vicar of Wakefield; Coleridge, The Ancient Mariner; Scott, Ivanhoe; Cooper, The Last of the Mohicans; Tennyson, The Princess; Lowell, The Vision of Sir Launfal; George Eliot, Silas Marner. *B.* Shakespeare, Macbeth; Milton, Comus, Lycidas, L'Allegro, Il Penseroso; Burke, Conciliation with America; Macaulay, Essays on Milton and on Addison.

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

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

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

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

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

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

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

Regents' diplomas are not accepted in place of the entrance examination, unless they cover eight academic English counts, including English Composition, or three full years of the English course established by the Regents, February, 1893. 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 examina-

tion 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 count Regents' certificate are admitted to the College of Law without an examination in English.

The medical student's certificate issued by the Regents admits to the Medical College.

2. **In Physiology and Hygiene**; the equivalent of Martin's "The Human Body" (briefer course), and of Wilder's "Health Notes" and "Emergencies." The treatises of Blaisdell, Colton, Hutchinson, Huxley, Jenkins, Overton, Steele, and Walker are accepted as equivalents of Martin.

3. **In History** two of the four following subjects must be offered:

(a) The History of Greece to the death of Alexander, with due reference to Greek life, literature, and art.

(b) The History of Rome to the accession of Commodus, with due reference to literature and government.

(c) English History, with due reference to social and political development.

(d) American History, with the elements of Civil Government. It is expected that the study of American History will be such as to show the development and origin of the institutions of our own country; that it will, therefore, include the colonial beginnings; and that it will deal with the period of discovery and early settlement sufficiently to show the relation of peoples on the American continent, and the meaning of the struggle for mastery.

It is deemed very desirable that Greek and Roman History be offered as a part of the preparation of every candidate.

In addition to the examination, satisfactory written work done in the secondary school, and certified by the teacher, will constitute a considerable part of the evidence of proficiency required. This requirement may be met by the presentation at the examination of a note book or bound collection of notes.

Such written work should include practice in some of the following:

Notes and digests of the pupil's reading outside the text-books; written recitations requiring the use of judgment and the application of elementary principles; written parallels between historical characters or periods; brief investigations of topics limited in scope, prepared outside the class-room, and including some use of original material where available; historical maps or charts, made from printed data and comparison of existing maps, and showing movements of

exploration, migration or conquest, territorial changes or social phenomena.

The examination in history for entrance to the University 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 examinations will pre-suppose 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.

4. **Plane Geometry.** Including the solution of simple original exercises, numerical problems, and questions on the metric system; as much as is contained in the larger American and English text-books.

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

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

In **geometry** he should learn the definitions accurately, whether in the language of the text-book or not, and in proving a theorem or solving a problem he should be able to prove every statement made, going back step by step till he rests upon the primary definitions and axioms. He should be able to apply the principles of geometry to practical and numerical examples, to construct his diagrams readily with rule and compass, and to find for himself the solutions of simple problems and the demonstrations of simple theorems. To cultivate this power of origination, he should always, before reading the solution or proof given in his text-book, try to find out one for himself, making use, if necessary, of his author's diagram; and if successful, he should

compare critically his own work with his author's, and see wherein either is the better. Besides oral recitation, he is advised to write out his demonstrations, having regard both to the matter and to the form of his statements; and when written he should carefully study them to make sure, first, that he has a complete chain of argument, and secondly, that it is so arranged that without defect or redundance one step follows as a logical consequence of another.

II. Advanced Examination for Admission to the Various Courses.

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

TO THE COURSE LEADING TO THE DEGREE OF BACHELOR OF ARTS.

In addition to the primary entrance examinations as given on pages 33–37, the applicant must offer either A, B, *or* C, *as below.*

A.

1. **In Greek:** candidates are examined on (1) Grammar. A thorough knowledge of the common forms, idioms and constructions and of the general grammatical principles of Attic prose Greek, to be tested by an examination on a prescribed portion of Xenophon (for the next five years Xenophon's Anabasis, Books I and II). The test is to consist in part of questions, in part of simple sentences set for translation into Greek; it may include also translation from Greek into English. (2) Attic prose at sight. Ability to translate at sight a passage adapted to the proficiency of those who have read not less than 130 Teubner pages of Attic prose. The candidate is expected to show in his translation accurate knowledge of the forms and structure of the language, and an intelligent comprehension of the whole passage. (3) Homer. Ability to translate a passage from some prescribed portion of Homeric poems (for the next three years, Iliad, Book I and Book II, vv. 1–493), and to answer questions designed to test the candidate's understanding of the passage, as well as questions upon poetic forms constructions, and prosody.

2. **In Latin:** candidates are examined (1) in the following authors, with questions on subject-matter, constructions, and the formation and inflection of words: Vergil, six books of the Æneid, with the prosody; Cicero, six Orations, including the four against Catiline; the translation at sight of passages adapted to the proficiency of candidates who have studied Latin in a systematic course of at least five

lessons a week for three years, the passages to be selected from Nepos or Cæsar; and (2) Latin composition based on Bennett's or Jones's Latin Composition.

B.

1. **In Latin:** candidates are examined (1) in the following authors, with questions on subject-matter, constructions, and the formation and inflection of words: Vergil, six books of the Æneid, with the prosody; Cicero, six Orations, including the four against Catiline; the translation at sight of passages adapted to the proficiency of candidates who have studied Latin in a systematic course of at least five lessons a week for three years, the passages to be selected from Nepos or Cæsar; and (2) Latin Composition based on Bennett's or Jones's Latin Composition.

2. **In Advanced French or Advanced German:** (*The examination in advanced French or in advanced German covers the examination in the elementary requirement in each subject.*

Elementary French.—(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 conjugations 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 partitative constructions.

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

Advanced French: (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 of prose and verse from the writings of at least four standard authors. A considerable part of the amount read should be carefully translated into idiomatic English. (b) The translation into French of a connected passage of English prose. Candidates will be expected to show a thorough knowledge of accidence and familiarity with the essentials of French syntax, especially the uses of tenses, moods, prepositions, and conjunctions. Careful attention should be paid to pronunciation and the uses of spoken French.

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

Elementary German.—(a) The rudiments of grammar and especially these topics: The declension of articles, adjectives, pronouns, and such nouns as are readily classified; the conjugation of weak and of the more usual strong verbs; the commoner prepositions; the simpler uses of the modal auxiliaries; the elementary rules of syntax and word order. The proficiency of the applicant may 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.—(a) More 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 may be tested by questions on these topics, and by the translation into German of easy connected English prose. (b) Translation at sight of ordinary German. 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 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 English into German.

C.

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

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

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

The laboratory work offered must be chiefly quantitative in character, and must consist of at least forty exercises or experiments of the character given in Nichols's "Outlines of Physics," or other works similar to this in grade and method. The laboratory work prescribed above must have been performed by the student individually, in evidence whereof he must present his laboratory notebook 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.

2. **Chemistry.**—Remsen's "Introduction to the Study of Chemistry," or its equivalent, is to be taken as the basis of the examination. In addition to that, laboratory practice must have been taken with the

same book as a guide, or some other book of a similar character, representing eighty hours of actual work; the notes upon this, carefully written out, must be presented at the time of the examination, and this record should be endorsed by the teacher at the close of each day's work. Problems in the calculation of gas volumes, and in stoichiometry will be included in the examination. Finally the applicant will be examined on such on amount of qualitative analysis as can be accomplished in eighty hours of actual practice in the laboratory. A carefully written and endorsed note book of this work must also be presented at the time of the examination.

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

3. **Botany.**—The student should aim to acquire a knowledge of the general laws and fundamental principles of plant nutrition, assimilation, growth, etc., as exemplified by plants chosen from the different groups, as well as the general comparative morphology and the broader relationships of plants.

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

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

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

Study nutrition by comparison of soil and water cultures 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, elodaea, 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, oedogo-

nium; liverworts like riccia, marchantia, cephalozia; mosses like funaria, mnium; and a few of the higher plants, including lemna.

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

Study general morphology, reproduction and fruiting in the different groups. Examples are suggested as follows: Among the algae,—spirogyra, vaucheria, oedogonium, coleochatae; among the fungi,—mucor, saprolegnia, puccinia (wheat rust), one of the erisypheae (powdery 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 and the student can concentrate the mind upon processes and structures. The plants suggested are chosen for a purpose since they represent progression of form and structure. The student should study all the stages suggested from the actual material using text-books only as aids.)

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

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

4. **Geology.**—To meet the requirement in geology it will be necessary to devote to the study at least five periods a week for one year. Of this time not less than two periods a week must be given to laboratory and field work. The text-book used should cover the ground treated in such books as Scott's "Introduction to Geology," Geikie's "Class Book of Geology" and Tarr's "Elementary Geology;" but in addition to the subjects included in these books the student will be expected to do collateral reading in such works of reference as Geikie's "Text-book of Geology," Dana's "Manual of Geology," Lyell's "Principles of Geology" and LeConte's "Elements of Geology." It would also be well to refer to books treating portions of geology more specifically, such as Dana's "Characteristics of Volcanoes," Dana's "Corals and Coral Islands," Russell's "Volcanoes," Russell's "Lakes," Wright's "Ice Age in North America," Russell's "Glaciers," etc. The examination will test not merely the knowledge upon the text-book itself, but also the range and thoroughness of the work done with reference books. Carefully written digests of the parts read in the reference books, if certified 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 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."

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

The examination will call for a discussion of the habitat, mode of life, and post-embryonic development (transformations) 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: Mammals (cat, dog, monkey, rabbit, rat or opossum); Birds (common fowl, pigeon, or other convenient form); Reptile (serpent, and either a turtle or an alligator); Batrachian (salamander, toad or frog, and a tadpole); "Fishes" (sturgeon, amia or gar; cat-fish, sucker, carp or other soft-rayed fish; bass, perch or other spiny-rayed fish; shark or ray; lamprey or hag; lancelet (amphioxus), and a simple tunicate, *i. e.*, boltenia or molgula.

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

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

Besides the practical work above indicated, the student must gain

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

TO THE COURSE LEADING TO THE DEGREE OF BACHELOR OF LAWS.

In addition to the primary entrance examinatious as given on pages 33–37, the applicant must offer either A, B, *or* C, *as above. For equivalents see also under College of Law.*

TO THE COURSE LEADING TO THE DEGREE OF DOCTOR OF MEDICINE.

A medical student's certificate, issued by the Regents of the State of New York.

This certificate is granted by the Regents for 48 counts, as a result of Regents' examinations or on evidence of four years of satisfactory high school work or its equivalent. The credentials should be sent directly to the Regents' Office, Albany, N. Y., and application made for a medical student's certificate. This certificate should then be submitted to the Registrar for entrance to the medical course at the University.

[For admission to this course in New York City address the Secretary, 414 East 26th Street, New York City.]

TO THE COURSE LEADING TO THE DEGREE OF BACHELOR OF THE SCIENCE OF AGRICULTURE.

In addition to the primary entrance examinations as given on pages 33–37, the applicant must offer either A, B, *or* C, *as above, or an equivalent of one of them. See also under College of Agriculture.*

TO THE COURSE LEADING TO THE DEGREE OF DOCTOR OF VETERINARY MEDICINE.

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

TO THE FOUR-YEAR COURSE LEADING TO THE DEGREE OF BACHELOR OF THE SCIENCE OF FORESTRY.

In addition to the primary entrance examinations as given on pages 33–37, the applicant must offer Advanced French, Advanced German, and Advanced Mathematics, as on pages 38, 39 and 46. Latin as given on page 38 may be substituted for the Advanced French.

TO THE COURSE LEADING TO THE DEGREE OF BACHELOR OF ARCHITECTURE.

In addition to the primary entrance examinations as given on pages 33–37, the applicant must offer as below.

1. **In Advanced Mathematics** as much as is contained in the standard American and English text-books on the following subjects:

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

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

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

In algebra, theory and problem-solving have equal weight.

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

of triedral angles; and the solution of right and oblique spherical triangles, including the determination of the ambiguous cases.

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

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

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

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

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

On the other hand, most students who fail in their university mathematics fail because they are poorly equipped in the second requirement above mentioned. For example: they cannot perform the ordinary operations of algebra rapidly nor accurately, they do not know the theory of quadratic equations, they are lost among trigonometric formulæ, and they blunder when they use logarithms. Instead of spending their time and energy upon their new work, they must spend much of it in studying up those things with which they ought to be familiar, and, thus handicapped, they cannot keep up the pace set by men who are properly prepared, and they cannot do the work that must be done to fit them for the professional work that follows. They become discouraged and disheartened, and they soon rank as third-rate men, when a little care in their preparation might have made them first-rate men.

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

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

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

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

TO THE COURSE LEADING TO THE DEGREE OF CIVIL ENGINEER.

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

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

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

(a) History, or additional English language and literature.

(b) Additional modern languages or literatures.

(c) Freehand or linear drawing.

(d) Chemistry, physics, botany, zoology, descriptive astronomy, or additional physiology.

(e) Latin or Greek.

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

TO THE COURSE LEADING TO THE DEGREE OF MECHANICAL ENGINEER (INCLUDING ELECTRICAL, MARINE, AND RAILWAY MECHANICAL ENGINEERING.)

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

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

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

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

III. Time and Conditions of the Examinations.

The examinations are held in the following order. The dates may be found in the calendar on pages 6 and 7.

First Day.—English History, 8 A. M; Plane Geometry, 3 P. M.

Second Day.—American History, 8 A. M.; Physiology, 10:30 A. M.; Elementary Algebra, 3 P. M.

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

Fourth Day.—English, 8 A. M; Latin, Trigonometry, and Zoology, 3 P. M.

Fifth Day.—Elementary and Advanced French, 8 A. M.; Roman History, 11 A. M.; Advanced Algebra, Botany, and Geology, 3 P. M.

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

1. For the purposes of the division between two years the examinations in June and September in the same year may count as one series, the applicant at his option, taking a part in June and a part in September.

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

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

3. No account will be taken of the result of such preliminary examinations unless at least four subjects are satisfactorily passed.

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

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

ADMISSION WITHOUT EXAMINATION.

I. On the Regents' Diploma.

Diplomas 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 diplomas, including, upon the recommendation of the University departments concerned, the subjects of French, German, Physics, Chemistry, Botany, Geology, and Zoology. A statement from the teacher giving in detail the work done and the proficiency attained in these subjects, must be submitted by the holder of the diploma.

Certificates (for exceptions see under College of Law and Veterinary and Medical Colleges) and pass cards issued by the Regents are not accepted unless they are presented by the holder of a Regents' diploma.

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

To secure exemption from the entrance examination in English, (see page 33), the diploma must cover eight academic English counts, including English Composition, or three full years of the English course established by the Regents, February, 1893.

These Regents' diplomas, however, do not exempt from the entrance English examination prescribed for competitors for the University scholarships, see p. 59.

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

II. On Certificate.

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

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

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

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

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

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

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

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

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

All communications on this subject and all certificates must be ad-

dressed to the Registrar, from whom also blank forms for certificates may be obtained.

III. 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 deficiences 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 general course.

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

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

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

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

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

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

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

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

ADMISSION TO ADVANCED STANDING.

1. **On Examination.** On presenting evidence of good character, or, in case he comes from another college or university, a letter of honorable dismissal, a candidate may be admitted to any class at the

beginning of any term not later than the first term of the senior year, provided he appears, on examination, to be well versed in the following subjects:

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

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

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

2. **Without Full Examination.** Applicants for a baccalaureate degree coming from other colleges and universities, may be admitted provisionally to such standing and upon such terms as the Faculty concerned may deem equitable in each case, regard being had to the applicant's previous course of study, and to the evidence of proficiency exhibited. Every such candidate for a baccalaureate degree is required, at the time of making his application, to forward to the Secretary of the Faculty concerned, (application for admission to the Academic Department should be forwarded to the Registrar of the University) along with a catalogue of the institution in which he has studied, a careful statement, duly certified, 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 textbooks used. To avoid delay in arranging the course, these credentials should be presented at an early date in order that the status of the applicant may be determined as far as is feasible before his arrival. Applications for credit in all subjects for which credit is desired, must be made at the time of the admission of the applicant, and not be postponed to any later date in his course.

A student who has thus been admitted provisionally to a class, is considered to be in full and regular standing in that class, if, having taken the regular studies of the course he give proof, by passng 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 68.

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 Registration Day, except by special permission of the Faculty concerned.

REGISTRATION OF STUDIES.

Students in all 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 fall term except by special permission of the Faculty concerned.

EXERCISES OF THE TERM.

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

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

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

PAYMENTS TO THE UNIVERSITY.

The annual tuition fee, in the College of Law, in the State Veterinary College and the College of Forestry, (except as below) and in the courses in Arts, Philosophy, and Science, for both graduates and undergraduates, is $100, $40 to be paid at the beginning of the first term, $35 at the beginning of the second, and $25 at the beginning of the third ; in all other courses (except as below), for both graduates

and undergraduates (including candidates for advanced degrees *in absentia* in which case the whole fee is to be paid in advance), and for Special students, it is $125, $50 to be paid at the beginning of the first term, $40 at the beginning of the second, and $35 at the beginning of the third. The annual tuition fee in the Medical College is $150.

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

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

Students taking work in Sibley College are charged $5 per term for material and extra expenses.

An incidental fee of $5 per term, to cover cost of materials used, is required of all students in Agriculture, except those in the first two years of the regular course.

A fee of $5, to cover expenses of graduation, degrees, etc., is charged to each person taking the baccalaureate degree. This fee must be paid at least ten days before Commencement.

The fee charged for an advanced degree is $10, and it must in all cases be paid at least ten days before Commencement.

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 term in advance. All the members of the University are held responsible for any injury done by them to its property.

EXPENSES.

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

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

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

The cost for board, rent of furnished room, fuel and lights, in Sage College and 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 Philosophy, Bachelor of Science, Bachelor of Laws, Bachelor of the Science of Agriculture, Bachelor of the Science of Forestry, 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.

In the case of students entering the Academic Department in and after 1897, the single degree of Bachelor of Arts will be conferred.

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.

Special Mention.

Students in the Academic Department who shall devote at least five hours, with marked proficiency, during the last two years to any single subject, and pass the requisite examinations, may upon application on or before June 1, receive mention of the fact with their diplomas. The applicant must have taken an average of at least five

hours of work throughout the two years, and in no term have fallen below four hours.

Teachers' Certificates.

Certificates of scholarly fitness to teach, will, upon application on or before June 1, be given to such graduates of the Academic Department as have successfully pursued the first course on the Science and Art of Teaching, (see under Philosophy) or that portion of it which relates to the general theory of education, together with the course on the history of education, and have besides attained marked proficiency in at least five hours of advanced work for two years, in each subject for which the Teacher's certificate is given, in such subjects as offer five or more hours of such work.

Thesis.

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

SCHOLARSHIPS AND PRIZES.

STATE SCHOLARSHIPS.

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

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

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

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

UNIVERSITY UNDERGRADUATE SCHOLARSHIPS.

Pursuant to the action of the Trustees there will annually be thrown open to competition for all members of the freshman or first year

class who are registered in courses leading to first degrees, at a special examination held *at Ithaca* at the beginning of the freshman year, eighteen scholarships of the annual value of $200 each.

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

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

The statute in regard to scholarships is as follows:

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

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

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

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

5. These scholarships will be given for passing examinations which shall average the highest in any three of the following groups, of which group (a) must be one. Previous to entering this competitive examination, however, candidates are required to pass satisfactorily at the University the regular entrance examination in English. See page 33. *School certificates*, *Regents' diplomas*, *and Normal School diplomas* are not accepted in place of this English examination.

(a). Arithmetic, and algebra through quadratic equations.

(b). Plane and 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 36, 37, 38 and 39.

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. No one shall be eligible to these Scholarships who shall have received credit for more than twenty hours of work in advance of course. 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 the course. All persons shall be debarred from the competition for these Scholarships, who shall have participated in any previous competition for the same or shall have been in the previous year or years registered as a student in this University or in any other University or College.

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

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

10. The moneys due on Scholarships are paid at the office of the Treasurer of the University in three equal payments, on the 15th of December, the 15th of March, and the 15th of June.

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

PRIZES.

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

The prize may be competed for under the following conditions:

1. Any member of the graduating class who is to receive a degree at

the coming Commencement, and who does not already hold a first degree, may be a competitor.

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

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

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

5. The contest for the prize will take place on the evening of the fifth Friday of the spring term, under the direction of the President of the University.

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

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

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

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

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

2. The announcement of this selection is to be made not later than the middle of the third term.

3. The contest for the prize takes place on the evening of the fourth

Friday preceding Commencement, under the direction of the Assistant Professor of Elocution and Oratory.

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

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

Sibley Prizes in Mechanic Arts. See under Sibley College.

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

The subject of the Essay, for 1899–1900, will be: "Shakespeare's use of English history in the service of his own independent dramatic motives, in his English historical Plays, inclusive of the tragedies of Macbeth and King Lear, and exclusive of King Henry the Sixth, Parts I–III."

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

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

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

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

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

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

5. The prize shall be awarded by a committee of three judges

appointed annually by the President of the University, to that competitor who shall be deemed by them the most effective debater, account being taken both of his thought and of its expression.

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

The 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 benefitted by the financial aid of the scholarship.

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

The College of Law Thesis Prize.—A fund of two thousand dollars has been given by a friend of the College, the income of which is devoted each year, under the direction of the Law Faculty, either for prizes for graduating theses or for printing theses of special merit, or for both such purposes. The way in which the income is to be applied is determined each year upon the presentation of theses. All theses submitted for this prize must be delivered to the Secretary on or before May 1st. See under College of Law.

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 avail himself 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, a copy 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 too full in the case of students not personally known to the appointing body.

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

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

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

(b). Five University Fellowships.

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

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

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

(e). Two Fellowships in Political Economy.

(f). Two Fellowships in Greek and Latin.

(g). One Fellowship in American History.

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

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

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

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

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

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

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

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

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

6. The moneys due on Fellowships and Graduate Scholarships are paid at the office of the Treasurer of the University in three equal payments, on the 15th of December, the 15th of March, and the 15th of June.

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

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

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

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

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

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

SPECIAL FELLOWSHIP IN ARCHITECTURE.

See under College of Architecture.

Honorary Fellowships.

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

Admission.

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

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

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

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

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

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

After the status of the applicant is determined by the general com-

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

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

Advanced Degrees.

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

Candidates for advanced degrees must present themselves for examination in one major and two minor subjects (except for the Master's degree, for which one major and one minor are required), which must have been determined upon, with the approval of a committee of the University Faculty, as early as October 15 of the year in which the degree is expected to be given, if it be the Master's degree, or of the year preceding that in which the degree is expected to be given, if it be the Doctor's degree.

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

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

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

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

Successful candidates for the degree of Doctor must print their 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. This type-written copy is to become the permanent property of the University.

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

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

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

The degree of Master of Civil Engineering, Master of Mechanical Engineering, or Master of Science in Agriculture is conferred, after at least one year of resident study, on candidates who have received the corresponding first degree, upon presenting a satisfactory thesis and passing the required special final examination as above. In special cases graduates of this University, on the recommendation of the special committee that would have charge of their work, may, by vote of the University Faculty in each case, become candidates for the degree of M.C.E., M.M.E., and M.S. in Agr., after two years of professional practice and study *in absentia*.

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

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

The Degree of Doctor of Philosophy.

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

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

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

2. The candidate is expected to spend at least three years at the University, pursuing a course of study marked out by the University Faculty. In cases of exceptional proficiency a candidate may be recommended for the degree at the expiration of a shorter period. A year of graduate work in a University elsewhere, may, by a special vote of the University Faculty, be accepted in place of a year's work in this University.

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. [See also p. 70.]

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

ACADEMIC DEPARTMENT.

FACULTY OF ARTS AND SCIENCES.

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

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

THE REV. WILLIAM DEXTER WILSON, D.D., LL.D., L.H.D., Professor of Moral and Intellectual Philosophy, Emeritus.

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

SAMUEL GARDNER WILLIAMS, A.B., Ph.D., Professor of the Science and Art of Teaching, Emeritus.

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

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

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

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

HORATIO STEVENS WHITE, A.B., Professor of the German Language and Literature, and Dean of the University Faculty.

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

THE REV. MOSES COIT TYLER, A.M., L.H.D., Professor of American History.

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

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

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

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

JER EMIAH WHIPPLE JENKS, A.M., Ph.D., Professor of Political Economy and Civil and Social Institutions.

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

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

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

HENRY MORSE STEPHENS, M.A., Professor of Modern European History.

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

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

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

EDWARD BRADFORD TITCHENER, A.M., Ph.D., Sage Professor of Psychology.

GEORGE FRANCIS ATKINSON, Ph.B., Professor of Botany with special reference to Comparative Morphology and Mycology.

RALPH STOCKMAN TARR, B.S., Professor of Dynamic Geology and Physical Geography.

THE REV. NATHANIEL SCHMIDT, A.M., Professor of Semitic Languages and Literatures.

GEORGE PRENTICE BRISTOL, A.M., Professor of Greek.

†WALTER FRANCIS WILLCOX, LL.B., Ph.D., Professor of Social Science and Statistics.

CHARLES DEGARMO, Ph.D., Professor of the Science and Art of Education.

EVANDER BRADLEY McGILVARY, A.M., Ph.D., Sage Professor of Moral Philosophy.

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

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

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

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

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

†WILLIAM ALEXANDER HAMMOND, A.M., Ph.D., Assistant Professor of Ancient and Mediæval Philosophy.

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

JOSEPH ELLIS TREVOR, Ph.D., Assistant Professor of General Chemistry and Physical Chemistry.

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

† Absent on leave.

CHARLES HENRY HULL, Ph.D., Assistant Professor of Political Economy, and Secretary of the University Faculty.

DUNCAN CAMPBELL LEE, A.M., Assistant Professor of Elocution and Oratory.

FREDERICK BEDELL, Ph.D., Assistant Professor of Physics.

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

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

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

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

GRANT SHERMAN HOPKINS, D.Sc., Assistant Professor of Veterinary Anatomy and Anatomical Methods.

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

EVERETT WARD OLMSTED, Ph.B., Ph.D., Assistant Professor of French.

MARK VERNON SLINGERLAND, B.S. in Agr., Assistant Professor of Economic Entomology.

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

BENJAMIN FREEMAN KINGSBURY, A.B., Ph.D., Assistant Professor of Microscopic Methods, Histology, and Embryology.

ARTHUR FAIRBANKS, A.B., Ph.D., Acting Assistant Professor of Ancient and Mediæval Philosophy.

HARRY HUNTINGTON POWERS, M.A., Ph.D., Acting Assistant Professor of Social Science.

GEORGE DAVIS CHASE, Ph.D., Assistant Professor of Comparative Philology.

LOUISE SHEFFIELD BROWNELL, A.B., Ph.D., Warden of Sage College, and Lecturer on English Literature.

ARTHUR FARWELL, B.S., Lecturer in Music.

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

FREDERICK JOHN ROGERS, M.S., Instructor in Physics.

ERNEST ALBEE, A.B., Ph.D., Instructor in Philosophy.

HENRY HAYDEN LANNIGAN, Instructor in Gymnastics.

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

DANIEL ALEXANDER MURRAY, Ph.D., Instructor in Mathematics.

LEWIS LEAMING FORMAN, Ph.D., Instructor in Greek.

JOHN IRWIN HUTCHINSON, A.B., Instructor in Mathematics.
FRANK EMIL LODEMAN, A.M., Ph.D., Instructor in French.
VIRGIL SNYDER, D.Sc., Instructor in Mathematics.
BERT BRENETTE STROUD, D.Sc., Instructor in Physiology, Vertebrate Zoology, and Neurology.
ELIAS JUDAH DURAND, A.B., D.Sc., Instructor in Botany, and Assistant Curator of the Cryptogamic Herbarium.
ALFRED AUSTIN MOORE, A.B., Instructor in French.
GEORGE BURRIDGE VILES, A.M., Instructor in German.
BLIN SILL CUSHMAN, B.S., Instructor in Chemistry.
ELLEN BRAINARD CANFIELD, Instructor in Physical Culture at Sage College, in charge of the Gymnasium for Women.
THEODORE WHITTLESEY, Ph.D., Instructor in Chemistry.
CHARLES LOVE DURHAM, Ph.D., Instructor in Latin.
CLARK SUTHERLAND NORTHUP, A.B., Ph.D., Instructor in English.
JACOB SEGALL, Ph.D., Instructor in French.
DAVID IRONS, A.M., Ph.D., Instructor in Philosophy.
GEORGE ABRAM MILLER, A.M., Ph.D., Instructor in Mathematics.
ISAAC MADISON BENTLEY, B.S., Ph.D., Instructor in Psychology.
CHARLES HENRY RAMMELKAMP, Ph.B., Instructor in American History.
HEINRICH RIES, Ph.B., A.M., Ph.D., Instructor in Economic Geology.
MARCUS SIMPSON, A.M., Ph.D., Instructor in German.
OSCAR MILTON STEWART, Ph.B., Ph.D., Instructor in Physics.
HECTOR RUSSELL CARVETH, A.B., Ph.D., Instructor in Chemistry.
KARL McKAY WIEGAND, B.S., D.Sc., Instructor in Botany, and Assistant Curator of the Phanerogamic Herbarium.
GEORGE NIEMAN LAUMAN, B.S.A., Instructor in Horticulture.
JAMES ALBERT WINANS, A.B., Instructor in Elocution and Oratory.
CHARLES NELSON COLE, A.M., Instructor in Latin.
ANDREW EDWARD TUCK, Ph.B., Instructor in Military Science and Tactics.

EUGENE PLUMB ANDREWS, A.B., Curator of the Museum of Casts.
FRED CLARKSON FOWLER, Mechanician in the Department of Physics.
ROBERT SHORE, Assistant to the Professor of Botany, and Head Gardener.

ALEXANDER DYER MACGILLIVRAY, Assistant in Entomology.
CHARLES ROBERT GASTON, Ph.B., Assistant in English.
ALFRED ERNEST TAYLOR, A.M., Ph.D., Assistant in Chemistry.
GEORGE ARMSTRONG SMITH, B.S. in Agr., Assistant in Chemistry.
BENTON SULLIVAN MONROE, A.M., Assistant in English.
GUY MONTROSE WHIPPLE, A.B., Assistant in Psychology.
ARTHUR LYNN ANDREWS, M.L., Assistant in English.
GEORGE TRACY HASTINGS, B.S., Assistant in Botany.
AGNES MARY CLAYPOLE, Ph.B., M.S., Assistant in Microscopy, Histology, and Embryology.
ERNEST BLAKER, B.S., Assistant in Physics.
GEORGE MATTHEW DUTCHER, A.B., Assistant in English History.
MORRIS ROGERS EBERSOLE, B.S., Assistant in Chemistry.
HEINRICH HASSELBRING, B.S.A., Assistant in Botany.
ROBERT CLARKSON BROOKS, A.B., Assistant in Political Economy.
NATHAN AUSTIN WESTON, M.L., Assistant in Political Economy.
JUDSON FREEMAN CLARK, B.S. in Agr., A.M., Assistant in Botany.
WILLIAM ALBERT RILEY, B.S., Assistant in Entomology.
GEORGE ABRAM EVERETT, A.B., Assistant in Elocution and Oratory.
FRANK HOWARD HAUSNER, Assistant in Elocution and Oratory.
CHARLES F FLOCKEN, Assistant in Microscopy, Histology, and Embryology.
WILLIAM FAIRFIELD MERCER, Ph.M., Assistant in Microscopy, Histology, and Embryology.
JOHN EDGAR TEEPLE, B.S., Assistant in Physiological Chemistry.
GEORGE WALTER STEWART, A.B., Assistant in Physics.
ROBERT BYRON BLAKESLEE, M.E., Assistant in Physics.
ROLLA ROY RAMSEY, A.M., Assistant in Physics.
EDMUND SEWALL SMITH, B.S., Assistant in Chemistry.
DARWIN ABBOTT MORTON, B.S., Ph.B., Assistant in Chemistry.
ROBERT FISCHER, B.S., Assistant in Chemistry.
CHARLES GEORGE LEWIS WOLF, B.A., C.M., M.D., Assistant in Chemical Research.
JAMES OTIS MARTIN, B.S.A., Assistant in Geology.
ANDREW CURTIS WHITE, Ph.D., Reader in Greek.
EDWARD GODFREY COX., A.B., Reader in English.

SPECIAL LECTURERS.

CASPAR RENE GREGORY, A.M., Ph.D., LL.D., *Leipsic, Germany.*
Religious Thought in Germany.

CHARLTON T. LEWIS, Ph.D., *New York City.*
Insurance.

KARL BUDDE, D.D., *Strassburg, Germany.*
The Pre-exilic Religion of Israel.
I. The Origin of the Yahweh-Religion. II. Yahweh and His Rivals. III. Priests, Prophets and Kings as Champions of Yahweh. IV. Foreign Powers and the Written Prophecy of the Northern Kingdom. V. The Similar Conflict in the Southern Kingdom. VI. Judah's Collapse, and the Bases of its Re-establishment.

WILLIAM H. TOLMAN, Ph.D., *New York City.*
Municipal Problems.

WILLIAM H. BALDWIN, A.B., *New York City.*
Practical Business Management.

HENRY G. HANCHETT, *New York City.*
Analytical Recital.

WALTER F. FREAR, A.B., LL.B., *Hawaiian Islands.*
Hawaii: Its Government.

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

THOMAS M. OSBORNE, A.M., *Auburn.*
Business Management.
Beethoven and the Symphony.
Schubert and the Song.

ALBERTO F. LARCO, M.E., *Trujillo, Peru.*
Peru.

ANTONIA C. DE P. P. MAURY, *Cambridge, Mass.*
Stars and Stellar Evolution.

HENRY E. KREHBIEL, *New York City.*
Folk Song in America.

CHARLES GRAY WAGNER, B.S., M.D., *Binghamton.*
Insanity.

EDOUARD ROD, Ph.D., *Paris, France.*
Le Roman Français.
Cyrano de Bergerac.

WILLIAM CUNNINGHAM, D.D., LL.D., *Cambridge, Eng.*
Plans of Towns.
Organization of Building Trades.
Stone Churches.

A. R. MARSH, A.B., *Cambridge, Mass.*
Dante.

EDWARD ROSEWATER, *Omaha, Nebr.*
Journalism.

CHARLES WALDSTEIN, Litt.D., Ph.D., L.H.D., *Cambridge, Eng.*
The Spirit of Greek Art.

JOHN W. FOSTER, A.B., LL.B., LL.D., *Washington, D. C.*
Diplomacy.
ROBERT T. HILL, B.S., *Washington, D. C.*
Porto Rico.
ARTHUR FARWELL, B.S.
Wagner and the Opera.
FELIX ADLER, Ph.D., *New York City.*
Scholarship and Manhood.

REQUIREMENTS FOR ADMISSION AND GRADUATION.

The following subjects are required for admission: English, Physiology and Hygiene, History [two of the four following divisions in History: (a) American, (b) English, (c) Grecian, (d) Roman,] Plane Geometry, Algebra, and either *A*, *B* or *C*, as follows:

A. Greek and Latin.

B. Latin and Advanced French or Advanced German.

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

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

[*For details as to subjects and methods of admission see pages 33-53.*

For admission to the freshman class, communications should be addressed to the Registrar. See pages 33-53.

For admission to advanced standing from other colleges and universities, communications should be addressed to the Registrar. See pages 52 and 53.

For admission to graduate work and candidacy for advanced degrees, communications should be addressed to the Dean of the University Faculty. See pages 64-72.]

Degrees. The degree of Bachelor of Letters will not be conferred after June, 1899.

The degrees of Bachelor of Science and Bachelor of Philosophy will not be conferred after June, 1900.

In and after June, 1901, the single degree of Bachelor of Arts will be conferred, irrespective of the studies elected.

Students in the Course of Philosophy who, in the last two years

elect continuously not less than nine hours of studies in history and political science, will, upon application on or before June 1, receive the degree of Bachelor of Philosophy in History and Political Science.

Students in the Course in Science who in their sophomore year elect invertebrate and vertebrate Zoology, and at least two terms of freehand drawing, and who in the last two years elect continuously not less than nine hours in natural history, and pass an examination before the beginning of the senior year in Latin equivalent to four books of Cæsar's Commentaries, and in Greek sufficient to show ability to recognize and analyze scientific technical terms, will, upon application on or before June 1, receive the degree of Bachelor of Science in Natural History.

General Conditions for Graduation. For graduation, 180 hours of instruction, besides military drill and physical training during the freshman and sophomore years, are to be completed. In the case of students relieved from military drill and physical training, an equivalent in hours is added to the 180 hours. For those entering in and after 1897 the work of the entire course is elective, except as regards military drill, and gymnasium, and is subject only to the limitations prescribed by each department of instruction. Students are, however, advised to lay out definite and systematic lines of study.

LIST OF COURSES OPEN TO FRESHMEN.

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

Semitic Languages and Literatures.—Courses 1, 2, 8 and 13.

Classical Archæology.—Course 4.

Greek.—Courses 1, 1a, and A.

Latin.—Courses 1 and 15.

Germanic Languages.—Course 1, and under certain restrictions, courses 2, 3, 4, 5, and 6.

Romance Languages.—Course 1, and under certain restrictions, courses 2, 3, 4, 6, 8, 9, 11, 12, 14, 16, and 17.

English.—Courses 1, 3, 10, 30, and 31.

History.—Courses 4, 8, 21, 22.

Music.—Course 1.

Bibliography.—Course 1.

Mathematics.—Courses 6, 8, and 9.

Physics.—Courses 2a and 2b if advanced mathematics be offered at entrance.

Chemistry.—Courses 1 and 2.
Botany.—Courses 1, 2, 3, 4, and 5.
Entomology and General Invertebrate Zoology.—Courses 1, 2, 3, 4, 5 and 7.
Physiology, Vertebrate Zoology, and Neurology.—Courses 1–7.
Anatomical Methods and Human Anatomy.—Courses 1, 2, and 3.
Microscopy, Histology, and Embryology.—Courses 1, 2, and 3.
Geology.—Courses 1–6, 21.
Military Science.—Course 4.
Hygiene and Physical Culture.—Course 2.
Freehand Drawing.—Course 1.

Juniors and seniors in good standing in the Academic Department are allowed, with the permission of the Faculty of Arts and Sciences, and with the consent of the Faculty concerned in each case, to elect studies in other Colleges which shall count towards graduation in the Academic Department, but the sum total of hours elected cannot exceed the number required for one year's work in such Colleges, nor exceed nine hours per week in any term.

DEPARTMENTS OF INSTRUCTION.

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, one term 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 author-

ship, date, literary composition and historical value, and in part to a translation and elucidation of the texts themselves. Much attention will be bestowed on the Old Testament. Thus an opportunity will be afforded to students who are not familiar with the Hebrew to become acquainted with the results of scientific Bible-study. The Hebrew apocrypha and pseudepigrapha, the Mishnah and the Talmud, the Quran and the Arabic poets, the Babylonian Gilgamish epic and the Book of the Dead will be discussed in a similar manner.

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

Bracketed courses will not be given in 1899–1900, but may be expected in 1900–1901.

Office of the department, White 3 B. Consultation hours, M., W., 5.

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

2. **Arabic.** Grammar (Socin, Wright, Caspari-Müller). Earlier Suras in the Quran and selections from the poets. M., W., 4, *White 3 B.* Professor SCHMIDT.

[3. **Aramaic.** Grammar (Marti, Duval, Petermann). Selections from Ezra, Daniel, the Targums, the Edessene Versions and the Samaritan Pentateuch. T., Th., 3, *White 3 B.* Professor SCHMIDT.]

[4. **Egyptian and Coptic.** Grammar (Erman, Steindorff). Selections from historical texts, the Book of the Dead, and Pistis Sophia. T., Th., 4, *White 3 B.* Professor SCHMIDT.]

[5. **Semitic Seminary.** Interpretation of Isa. xl–lxvi, fall term; the Elihu speeches in Job, winter term; Phoenician inscriptions in the Corpus Inscriptionum Semiticarum and the Zinjirli, Daibon and Siloam inscriptions, spring term. M., 8–10 P. M. Professor SCHMIDT.]

[6. **Geography and Antiquities of the Semites.** F., 3, *White 3 B.* Professor SCHMIDT.]

[7. **Semitic Literature.** The Minor Prophets, fall term; Samuel and Kings, winter term; Quran, spring term; M., W., 3, *White 3 B.* Professor SCHMIDT.]

[8a. **Oriental History.** Susiana, Persia, Media and Armenia, fall term; Arabia and Ethiopia, winter term; the Bagdad Caliphate, spring term. T., Th., 2, *White 6.* Professor SCHMIDT.]

8b. **Oriental History.** Syria, fall term; Carthage and Asia Minor,

winter term; Assyria and Babylonia, spring terms. T., Th., 2, *White 6*. Professor SCHMIDT.

9. **Assyrian.** Grammar (Lyon, Delitzsch). Selections from Meissner's Chrestomatie and the Amarna tablets. T., Th., 3, *White 3 B*. Professor SCHMIDT.

10a. **Ethiopic.** Grammar (Praetorius, Dillmann). Enoch xxxvii–lxxi and Ascensio Isaiae. Or, 10b. **Advanced Aramaic.** Grammar (Dalman, Luzzato, Nöldeke). Selections from the Palestinian Talmud, the Babylonian Talmud and the Mandaic Qolasta. T., Th., 4, *White 3 B*. Professor SCHMIDT.

11. **Semitic Seminary.** Interpretation of the Books of Samuel, fall term; Ezra–Nehemiah, winter term; Hebrew text of Ecclesiasticus and Aboda Zara, spring term. M., 8–10 P. M. Professor SCHMIDT.

12. **Comparative Semitic Philology.** Moods and Tenses, fall term; origin of the cuneiform signs and the alphabet, winter term; Gen. i–iv in Hebrew, Aramaic (Targumic, Samaritan and Edessene), Arabic and Ethiopic, spring term. F., 3, *White 3 B*. Professor SCHMIDT.

13. **Semitic Literature.** The Book of Isaiah, fall term; Ecclesiastes and Proverbs, winter term; the Apocrypha, spring term. M., W., 3, *White 3 B*. Professor SCHMIDT. Open to all students. No knowledge of the original languages is required.

CLASSICAL ARCHÆOLOGY AND HISTORY OF ART.

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

Course 3, the shorter course of lectures on Greek sculpture in the museum, will give the student a knowledge of the general history of the development of Greek art, such a knowledge as will enable him to view the treasures of the larger museums of this country and of Europe intelligently. The two 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 pre-supposes ability to read Greek prose readily. The Archæological Seminary is intended primarily for those who desire specializing work in Greek architecture and Greek epigraphy. Courses 1, 2, 4, and 5 will prepare for the examinations for the Athens fellowships.

Office of the department in the tower-room of the Cast Museum. Consultation hours, M., W., 12.

1. **Greek Archæology.** Lectures and readings. Mycenæan art and civilization, Greek terracottas, coins, bronzes, jewels, and vases. The coins and vases in the Museum of Classical Archæology will be used as material for study. Lectures illustrated by lantern-slides. T., Th., 11.

2. **History of Greek Sculpture.** Lectures in Museum of Casts. T., Th., 12.

3. **Outline History of Greek Sculpture.** Lectures in the Museum of Casts, F., 12, Mr. ANDREWS.

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

5. **Archæological Seminary.** Greek architecture and Greek Epigraphy. The architectural monuments of the Acropolis of Athens, their history and their problems. Greek epichoric alphabets and dialectal inscriptions. M., 3–5, *White 3a.*

COMPARATIVE PHILOLOGY.

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

To the first mentioned class of students, course 1 is especially adapted. For those who propose to be teachers of other than the classical languages, courses 2 and 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 prelim-

inary study of the elements of Sanscrit is considered desirable though not absolutely essential. The course in Gothic grammar is intended both for students of comparative philology and for specialists in Teutonic, including English, philology. 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 Romanic languages.

Bracketed courses are not given in 1899–1900.

1. **General Introduction to the Science of Language.** The essential principles of the life and growth of language; outlines of the science of phonetics; history of the science of comparative philology; historical and ethnological results of the science; classification of languages; salient characteristics of the various branches of the Indo-European family of languages; methods of investigation. Fall term. W., F., 11, *White 6.* Professor WHEELER.

2. **Greek Dialects.** Lectures on the characteristics of the dialects, their relation to each other, and to the formation of the literary idioms. Winter term. W., F., 11, *White 6.* Professor WHEELER.

3. **Gothic Grammar.** Lectures on the relation of the Teutonic languages to the Indo-European parent-speech. Spring term. W., F., 11, *White 6.* Professor WHEELER. See also English course 13a, which should precede this, if possible.

[4. **Comparative Grammar of the Greek and Latin Languages.** Historical treatment of the sounds and inflexions of the Greek and Latin languages in their relation to the other Indo-European languages. W., F., 11, *White 6.* Professor WHEELER.]

5. **Sanskrit.** The first twenty-five lessons of Perry's Sanskrit Primer; the essentials of the grammar, given in the form of lectures; reading of selections from Lanman's Reader. T., Th., 9, *White 3.* Professor BRISTOL.

6. **Advanced Sanskrit.** Reading of selections from the Rig-Veda. Grammatical discussions. Lectures on the private and religious antiquities of the ancient Hindoos. Fall and winter terms. T., 11, *White 6.* Professor WHEELER.

7. **Philological Seminary.** Preparation and discussion of papers by members of the seminary. Study of inscriptions. Open to graduates. W., 3–5, and an additional hour at the pleasure of the instructor. Professor WHEELER. See under Greek, course 20, for further description.

For courses in Semitic, in Romanic, in Teutonic, and in English Philology, see under Semitic Languages, Romance Languages, Germanic Languages, and English, respectively.

GREEK.

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

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 and with the characteristics of Greek thought.

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

1. The literature. Eleven reading courses accompanied by lectures are offered, nine of which are given this year, viz., a supplementary sophomore course, a junior course, a course in the orators, a course in the elegiac and lyric poets, a course in the tragedians, a course in Aristophanes, a course in Plato, a course in Aristotle, a course in Theophrastus, a course in Pausanias, a course in New Testament Greek. Besides these the study of some one Greek author is taken up in alternate years in the Seminary.

2. The antiquities. Course 9 treats of the entire equipment and environment of ancient Greek life, its usage and occupations, its ideas and institutions. Course 10 offers a history of the literature, course 11 of the political and legal antiquities, course 12 of the religion. The department of Classical Archæology offers also courses in Greek art and archæology, and in epigraphy, and the department of Architecture a course in ancient architecture.

3. The language. A course in Advanced Prose Composition will give maturer students an opportunity for practicing 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 the course, if possible, both in the junior and senior years. The Teachers' Course in Greek is also adapted to the needs of undergraduates who expect to teach the classics. Lectures on Greek grammar from a historical point of view are given in alternate years and are intended for seniors and graduates.

The 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. The seminary room in the new library building has been equipped with a reference library of over two thousand volumes and will be used as a regular study-room and laboratory by the more advanced students.

A course in Elementary Greek has been added for the advantage of non-Greek students, who for any reason may have found it, though late in their college course, desirable to acquire at least a rudimentary knowledge of the language, and are willing to incur the labor incident to doing two years' work in one. The acknowledged purpose of the course is to attain within one year of extraordinary effort a reading knowledge of Attic prose and all other objects are made secondary to this. The course cannot, without much additional study, serve as a preparation for the entrance examinations in Greek. 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.

Bracketed courses will not be given in 1899–1900.

Office of the department, White 3a. Consultation hours as follows: Professor ———, W., F., 10, and T., Th., 11–11:15; Professor Bristol, T., Th., S., 11; Dr. Forman, T., Th., S., 11.

A. **Elementary Greek.** The essentials of the grammar. Simple exercises in composition. The reading of selections from the Anabasis of Xenophon, and from Plato. M., W., F., 8, *White 13*. 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.

1. **Freshman Course.** Reading of selected orations of Lysias, accompanied by a careful review of the Attic inflections and syntax. Six books of Homer's Odyssey. Selections from Plato. Greek composition during fall and spring terms. T., Th., S., 10, *White 3* and *4*. Professor BRISTOL and Dr. FORMAN.

Open to all students who have presented Greek for admission to the University. The class will be divided into sections on the basis of scholarship at the beginning of the winter and of the spring term. See also 1a.

1a. **Supplementary Course.** Hellenica of Xenophon. Selections from Books V–VII. Herodotus, Books VI and VII. Selections from Lucian. W., F., 10. Dr. FORMAN.

Open to students in course 1 who wish to take as many as five hours a week in Greek, and to students who have completed course 1 and are taking course 2.

2. **Sophomore Course.** The Philippics of Demosthenes. The Antigone of Sophocles. The Frogs of Aristophanes. Extra reading required. The Olynthiacs of Demosthenes, or Lucian's Vera Historia, the Iphigenia in Tauris of Euripides, and the Plutus of Aristophanes. Greek composition for two terms. M., W., F., 9, *White 6.* Professor WHEELER and Dr. FORMAN.

Open to students who have passed in course 1.

3. **Junior Course.** Thucydides, portions of Books VI and VII. Demosthenes on the Crown. Aeschylus, Prometheus Bound. Euripides, Alcestis. M., W., F., 10, *White 3.* Professor BRISTOL.

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

[5. **Oratory.** Selected orations of Lysias and Demosthenes. Lectures on the development of Attic oratory, and on Athenian legal antiquities.

Open only to those who have passed in courses 1 and 2. W., F., 9, *White 3.* Professor BRISTOL.]

[6. **Elegiac and Lyric Poetry.** Fall term, the elegiac and iambic poets. Winter term, the melic poets in Hiller's Anthologia Lyrica. Spring term, Theocritus. W., F., 9, *White 3.* Professor BRISTOL.]

7. **The Tragedy.** Aeschylus, Agamemnon. Sophocles, Oedipus Tyrannus, Oedipus at Colonus, and Trachiniae. W., F., 9, *White 3.* Professor BRISTOL.

Open to seniors and graduates.

8. **Aristophanes.** The Knights, Clouds, Wasps, Peace, Birds, Frogs. Lectures on the development of Greek comedy and its scenic representation. T., Th., 8, *White 3.* Dr. FORMAN.

Open to seniors and graduates.

[9. **Greek Life.** Fall term, the land and the people. Winter term, home life and private antiquities. Spring term, 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 WHEELER. This course is open to all students of the university except freshmen.]

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

11. **Political and Legal Antiquities of the Greeks.** Lectures. Theories of the state. Political mechanism. Courts and legal procedure. Winter term. T., Th., 10, *White 6.* Professor WHEELER. This course is open to all students of the university except freshmen.

12. **The Religion of the Greeks.** Lectures. The leading cults in their historical relations. Types of the gods. Faith and superstition. Priests and ritual. Spring term. T., Th., 10, *White 6.* Professor WHEELER. This course is open to all stndents in the university except freshmen.

13. **Theophrastus.** Critical interpretation of the Characters of Theophrastus. Spring term. T., Th., 12, *White 6.* Professor WHEELER. Intended primarily for juniors and seniors.

14. **The Dialogues of Plato:** the Republic in the original text. This course is intended for students of Greek literature as well as of Greek philosophy. The dialogue above named will be read rapidly through, attention being directed both to matter and to form. The text of Adam (published by The Macmillan Co., New York) is recommended, and Pater's *Plato and Platonism* (also published by The Macmillan Co.) will be used as a commentary. M., W., F., 11, *White 5.* Acting Assistant Professor FAIRBANKS. This course is intended primarily for juniors and seniors.

15. **Aristotle's Nicomachean Ethics.** The Ethics will be read in the original Greek, and will be interpreted with special reference to its philosophical significance. The text of Susemihl (published by Teubner, Leipzig) is recommended. M., W., F., 12, *White 5a.* Acting Assistant Professor FAIRBANKS. This course is intended primarily for seniors and graduates.

16. **New Testament Greek.** Fall term, the Gospel and Epistles of John. Winter term, The Revelation. Spring term, the Second Apology of Justin Martyr and the Epistle of Diognetus. Each member of the class should be provided with Wescott and Hort's Greek Testament (either with or without Hickie's Lexicon), and Gildersleeve's edition of Justin Martyr. Recommended are also the volumes of the Cambridge Greek Testament covering the work of the first two terms, and Thayer's Greek-English Lexicon of the New Testament. *Barnes Hall, Library Room.* W.,F., 8. Dr. A. C. WHITE. The course is open to all students who have completed courses 1 and 2.

17. **Pausanias.** A reading course in the sources of the knowledge of Greek topography. Supplemented by illustrated lectures and by readings from Thucydides, Herodotus, and Xenophon. Each member of the class will be expected to own a Teubner text of Pausanias,

of Thucydides, and of Herodotus. T., Th,, 9, *White 6*. Mr. ANDREWS. Open to all students who have completed 1 and 2.

18. **Modern Greek**. The literary language as found in Athenian newspapers and the spoken idiom as presented in Gardner's *Practical Method of Modern Greek*. W., F., 10, *White 6*. Mr. ANDREWS. Open to all students who have completed 1 and 2.

19. **Advanced Greek Composition**. Weekly practice in the writing of more difficult Greek, in two sections. A. For undergraduates. B. For graduates, and for undergraduates who have passed in the work of A. S., 8, 9, *White 3a*. Dr. FORMAN.

20. **Teacher's course in Homer**. The work of the course will center in the Iliad. Portions of the Iliad chosen to present the complete story and to include the more famous episodes of the poem will be interpreted by the instructor and by members of the class. Further work will include the study of the language of the poem in its chief characteristics, and of its relation to the Attic dialect; the epic hexameter, its origin and development; the principles of interpretation; some features of life in the "Homeric period"; the value of archæology for the understanding of the poem; aims and methods in translating; 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 of Greek. M., Th., 11, *White 3*. Professor BRISTOL. This course is intended for seniors.

21. **Greek Dialects**. Summary of their peculiarities. Reading of selected inscriptions. Winter term. W., F., 11, *White 6*. Professor ————. Course intended for seniors and graduates.

22. **Philological Seminary**. Preparation and discussion of papers by members of the seminary. Study of inscriptions. W., 3–5, and an additional hour at the pleasure of the instructor. Professor ————. Open to graduates. Seniors are recommended to take as a pro-seminary or introduction to seminary work, a combination of courses, Compar. Philol. 1, Greek 21, and Greek 13.

For Greek Grammar, treated from the historical point of view, see under Comparative Philology, course 4.

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

LATIN.

The aim of the work in Latin covers several distinct heads:

1. To teach students of fair ability and of industry to read Latin understandingly and rapidly, without translating.

2. To give to students who acquire this power the opportunity of making a considerable acquaintance with the literature of the language, through the reading of large amounts of the important writers; with the history of the development of the literature, through a brief course given in the sophomore year, and a more detailed study in connection with the authors read in later years, and in the last years through the collateral reading of history in connection with the Roman writers.

3. To afford a more thorough and sympathetic knowledge of Roman private life than the courses in literature alone would give, through systematic lectures, illustrated abundantly, mainly by lantern views, and photographs, from the remains of Roman civilization preserved in Pompeii, Herculaneum, Rome, and elsewhere.

4. To offer to students whose interest extends to the scientific aspect of the language (and especially to those who are preparing to be teachers) advanced courses, partly by lectures, and partly by work in the seminary, in the study of the origin and development of the syntactical uses of the language, and of the beginnings of their decay. The seminary room with its special library affords the best opportunities for advanced work.

Provision for the study of Latin grammar on the side of forms and inflections is made by the Department of Comparative Philology.

Bracketed courses are not given in 1899–1900.

1. **Livy, Book I. Cicero, de Senectute. Horace, Selections from the Odes.** Latin Writing. Roman History. Reading of How & Leigh's History of Rome to the Death of Caesar. In five sections. M., W., F., 9, *Morrill 3*. Mr. COLE. M., W., F., 9, *Morrill 6*. Assistant Professor ELMER and Dr. DURHAM. M., W., F., 10, *Morrill, 13*. Mr. COLE. M., W., F., 10, *Morrill 3*. Dr. DURHAM. M., W., F., 11, *Morrill 3*. Mr. COLE.

2. **Terence, Phormio. Horace, Selections from the Satires, Epistles, the Ars Poetica. Tacitus, Germania and Dialogus de Oratoribus.** Collateral reading upon the history of Rome for the period covered by the life of Horace. Latin Writing. Wilkins' Primer of Roman Literature. Two sections. First section: T., Th., S., 9. Fall term: *Morrill 21*. Assistant Professor ELMER. Winter term: *Morrill 3*. Professor BENNETT. Spring term: *Morrill 21*. Assistant Professor ELMER. Second section: T., Th., S., 10, *Morrill 21*. Assistant Professor ELMER.

3. **Course in Latin Poetry**. Catullus, Selections. Virgil, Bucolics and Georgics. Martial, Selected Epigrams. Collateral reading upon Roman history. T., Th., S., 10, *Morrill 13*. Dr. DURHAM.

Open to students who have completed course 1.

[4. **Selections from Cicero's Letters. Cicero de Oratore.** W., F., 11, *Morrill 21*. Assistant Professor ELMER.]

This course is open to students who have completed course 1, and is especially recommended to those who may be planning to elect Latin later. It alternates with course 5.

5. **Selections from Cicero's De Officiis. Virgil, Aeneid, Books vii-xii.** W., F., 11, *Morrill 21*. Assistant Professor ELMER.

This course is open to students who have completed course 1, and is especially recommended to those who may be planning to elect Latin later. It alternates with course 4.

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

Open to students who have completed courses 1 and 2 or 1 and 3.]

7. **The Literature and History of the Early Empire**; Pliny the Younger, Juvenal, and Tacitus. History of Roman Literature; Capes' Early Empire. T., Th., S., 9, *Morrill 3*. Fall term: Professor BENNETT. Winter term: *Morrill 21*. Assistant Professor ELMER. Spring term: Professor BENNETT.

Open to students who have completed courses 1 and 2 or 1 and 3.

Courses 6 and 7 are given in alternate years.

8. **Advanced course in Latin Writing**. Open to students who have completed course 2 or 3, and who have maintained a high grade of scholarship in their previous Latin work. S., 11, *Morrill 3*. Assistant Professor ELMER.

[9. **Teachers' Training Course**.

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 exercises in the study of the Grammar, Caesar, Nepos, Cicero, and Virgil. W. F., 12, *Morrill 3*. Professor BENNETT.

The general aim of this course is to prepare students who intend to teach to enter upon their first year of work with confidence.

Course 9 is open only to students who have had courses 1 and 2 or 3, and who either have taken or are taking course 4, 5, 6, or 7. Special students in Latin are also admitted.]

10. **Roman Antiquities.** Fall and winter terms: A systematic consideration of the constitution of the Roman family, status of women, marriage, children, education, slavery, the Roman house and its furniture, food, dress, baths, games and amusements, books, trade, travel, religion, death, burial, etc. Lectures copiously illustrated by

lantern views, photographs and material in the Museum of Casts Spring term : The Political and Legal Antiquities of the Romans. Lectures, W., F., 12, *Morrill 3*. Professor BENNETT.

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

Course 10 alternates with course 9.

11. **Latin Seminary.** The work of the seminary for 1899–1900 will consist of a textual and exegetical study of the Stichus of Plautus combined with the more rapid reading of twelve selected plays of Plautus.

The object of the seminary is to familiarize its members with the methods and habits of independent investigation. The work, therefore, so far as possible, is thrown into the hands of the students themselves. The seminary is open to graduates. Students intending to take these courses should confer with the instructor before Commencement, that the necessary books may be ordered from abroad in due season. The textual and exegetical work will come T., 4–5:30, counting as two hours. The reading will come Saturday at 10. *Greek and Latin Seminary*. Professor BENNETT.

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

13. **Study of Latin Inscriptions, with special reference to the sounds, inflexions, and word formation of the Latin language**. Discussion of disputed Latin etymologies. Second half-year. Open to graduates. Professor BENNETT. Th., 10, *Morrill 3*.

[14. **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. M., Th., 10, *Morrill 3*. Professor BENNETT.]

15. **Sight Translation.** Exercises in translating simple Latin at sight. Open to freshmen. Caesar, Civil War; Plautus, Aulularia; Apuleius, Cupid and Psyche. Four sections. S., 9, *Morrill 11*. Dr. DURHAM. S., 10, *Morrill 11*. Mr. COLE. S., 11, *Morrill 11*. Dr. DURHAM. S., 12, *Morrill 11*. Dr. DURHAM.

[16. **Sight Translation.** Exercises in translating simple Latin at sight. Cicero, Selected Letters; de Amicitia; Plautus, Amphitruo.]

17. **Italic Dialects.** Oscan and Umbrian. Second half-year. T., Th., 9, *Latin Seminary Room.* Dr. DURHAM. Open to graduates.

18. **Latin Palæography.** An actual study of mediæval manuscripts and fac-similes in the possession of the University. Winter. W., 4–6. Professor BURR.

For Latin Grammar with reference to the history of sounds and inflexions, see under Comparative Philology, course 4.

For Roman History, see under Ancient History.

THE GERMANIC LANGUAGES.

The aim of the first two years 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.

During the first year Joynes-Meissner's Grammar and Brandt's Reader are used, accompanied by exercises in writing German and translation at sight. Later in the year easy novels or plays are translated.

In the second year standard German classics are translated, and special attention is paid to the study of etymology and syntax, and to reading at sight.

During the later years occur lectures and recitations, with elective classes, on German history, literature, and mythology; and courses are given, varying from year to year, embracing the works of the leading authors. Classes are also formed in composition and conversation, and recent dramatic literature and the writings of living novelists are read. Instruction is further provided in Old and Middle High German and other Germanic dialects.

The seminary system of study for advanced students has been employed in the department for several years with satisfactory results. To different members of the seminary classes different portions of the same general subject are assigned, with references to the proper authorities or sources; or individual members pursue individual courses of reading under the supervision of the professor in charge. Lectures for those intending to be teachers are also given on class-room methods and theories of instruction in the modern languages; and generous provision has been made by the University for the use of lantern slides for illustrative purposes. The seminary room in the general library building is already equipped with a good working library, which is steadily increasing in extent. The gift to the University of the

Zarncke library has materially enlarged the resources of the seminary and leaves little to be desired.

Bracketed courses are not given in 1899–1900.

Course 1, which cannot be taken to make up an entrance deficiency, is for beginners in German.

Course 2, which cannot be taken to make up an entrance deficiency, is otherwise open to those who have had the equivalent of course 1.

Courses 3–18 are open, under the restrictions hereafter noted, to those only who have had at least the equivalent of courses 1 and 2.

Course 1, and, under certain restrictions, courses 2, 3, 4, 5, and 6, are open to Freshmen.

1. **German Grammar and Reader.** Harris's German Composition. Easy plays and tales. M., W., F., 9, 12; T., Th., S., 11, *Morrill 21*. Dr. SIMPSON. M., W., F., 10, 11, *Morrill 6*. Mr. VILES.

2. **Schiller's Maria Stuart. Goethe's Prose. Lessing's Minna von Barnhelm.** M., W., F., 10, *Morrill 21*. Dr. SIMPSON. T., Th., S., 9, 10, 11, *Morrill 6*. Mr. VILES.

3a. **Elementary German composition and conversation.** Translation into German of selected passages adapted from German originals, and conversation on the texts thus prepared. M., 12, *Morrill 21*. Dr. SIMPSON. Open to those who have had course 1 or an equivalent.

3b. **Intermediate course in German composition and conversation.** Translation of easy English extracts into German; during the early part of the course considerable attention will be given to conversation. W., 12, *Morrill 21*. Dr. SIMPSON. Open, by application, to those who have had course 3a, or an equivalent.

3c. **Advanced German composition.** Those intending to teach German are specially advised to elect this course. F., 12, *Morrill 21*. Dr. SIMPSON. Open, by application, to those who have had courses 3a and 3b, or an equivalent.

4. **Schiller's lyric poems**; with some examination of the sources utilized, and the relation of the poems to his life and intellectual growth. Fall and winter terms. M., W., F., 9, *Morrill 5*. Professor WHITE.

5. **Goethe's life and works, poems, dramas and prose.** M., W., F., 11, *Morrill 13*. Professor HEWETT. Open to students who have had courses 1 and 2 or who have passed up German on admission.

6. **Deutsche Volkslieder.** Selections from songs of sentiment and of religion, of various callings, including soldier and student

songs, children's rimes, and legendary and narrative ballads. Spring term. M., W., F., 9, *Morrill 5*. Professor WHITE.

7. **Heine's life and works**, with lectures on the Romantic School. T., Th., 11, *Morrill 13*. Professor HEWETT.

[8. **Goethe's Faust.** Parts I and II. Three hours weekly, 1900–1901. *Morrill 5*. Professor WHITE.]

[9. **Schiller's life and works**, especially his dramatic and prose writings, correspondence with Goethe, the Xenien, etc. M., W., F., 11. 1899–1900. Professor HEWETT.]

10. **Life and writings of Richard Wagner.** Selections from the texts of Richard Wagner's musical dramas, including Tannhäuser, Lohengrin, Parsifal, Tristan und Isolde, der fliegende Holländer, and the Nibelungenring ; with a study of the legendary background and with illustrations and elucidations from Wagner's other writings. T., Th., 9, *Morrill 5*. Professor WHITE.

11. **German Seminary.** The study of the formation of the modern German language. Readings from the original texts of the period of the Reformation, Luther, Hans Sachs and Fischart. Special attention will be paid to German phonetics, syntax and the development of word-forms. Primarily for advanced students and teachers. Admission only upon application. *German Seminary Room, Library.* T., Th., 12. Fall and winter terms. Professor HEWETT.

[12. **The modern novel and drama** as illustrated by the works of Sudermann and Hauptmann. Two hours weekly. 1900–1901. Professor WHITE.]

13. **German life and art.** The country, early institutions, religion, public and social life, customs, dress, art in different periods, castles and monuments, illustrated by lantern views, photographs, etc. Spring term. T., Th., 12, *Morrill 13*. Professor HEWETT. Open to all students of the university except freshmen.

14. **Icelandic (Old Norse).** Sweet's Primer and Wilken's prosaische Edda. Fall and winter terms. Portions of the elder Edda. Spring term. Text books: Hildebrand's Lieder der älteren Edda, Gering's Glossar zu den Liedern der Edda, and Noreen's altnordische Grammatik. Two hours weekly on days to be arranged by consultation. *Morrill 21*. Dr. SIMPSON.

15. **The modern drama.** Grillparzer, Kleist, Hauptmann and Sudermann. M., W., 12, *Morrill 13*. Professor HEWETT. Open to students who have had two years of German and are prepared to read rapidly.

16. **German Seminary.** History of the German language. Methods of modern language study and teaching, including questions of pronunciation, syntax, etymology, prose composition, German

chirography and school equipment. Open, by application, to those intending to teach. Tuesday afternoons at 2.30, *Morrill 5*. Professor WHITE.

[18. **German Seminary.** Middle High German; epic and lyric poetry. 1900–1901. Professor WHITE.]

THE ROMANCE LANGUAGES.

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

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

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

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

The following courses are offered in 1899–1900.

Course 1, which cannot be taken to make up an entrance deficiency, is for beginners in French.

Course 2, which cannot be taken to make up an entrance deficiency, is otherwise open to those who have had the equivalent of course 1.

Courses 3, 4, 6, 8, 9, 11, 12, 14, 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, 4, 6, 8, 9, 11, 12, 14, 16, 17, are open to Freshmen.

1. **French Grammar and Reader.** Chardenal's Complete French Course. Super's French Reader. M., W., F., 9, *White 13.* Dr. LODEMAN. 10, *White 13.* Dr. LODEMAN. 11, *White 10.* Dr. SEGALL. 12, *White 10.* Dr. SEGALL. *White 13.* Mr. MOORE. T., Th., S., 10, *White 11.* Assistant Professor OLMSTED. 11, *White 10.* Mr. MOORE. 12, *White 10.* Mr. MOORE.

2. **Alphonse Daudet, Morceaux Choisis,** (*Ed. Freeborn*), **Pierre Loti, Le Pêcheur d'Islande,** (*Ed. Morich*), **Les Poètes Français du XIX^e^ Siècle,** (*Ed. C. Fontaine*). M., W., F., 10, *White 10.* Dr. SEGALL. 11, *White 11.* Assistant Professor OLMSTED. T., Th., S., 9, *White 13.* Dr. LODEMAN. 10, *White 10.* Mr. MOORE.

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

This course is open to all who have had courses 1, 2.

4. **The Precursors of the Romantic School.** Rousseau, Mme. de Staël, Chateaubriand. T., Th., 9, *White 10.* Professor CRANE.

[In and after 1900–1901 this course will alternate with a similar course on the French Romantic School.] Open to those who have had courses 1, 2.

5. **French Seminary.** The Classical Drama in the Eighteenth Century. Theories of Voltaire, Diderot and Mercier. Introduction to the history of the drama of the Romantic School, which will be the subject of the Seminary for 1900–01. W., F., 8. *French Seminary Room, Library.* Professor CRANE. Open only to those who have had courses 1, 2, 3 [Literature of the Eighteenth Century 1898–99.]

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

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

7.* **French Language and Literature of the Sixteenth Century.** Lectures and recitations based on Darmesteter and Hatzfeld's Le Seizième Siècle en France. W., F., 10, *White 11.* Assistant Professor OLMSTED.

Open to those who have had courses 1, 2, 3, or their equivalent.

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

Open to those who have had courses 1, 2.

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

9. **French Lyric Poetry.** A study of French versification as exemplified in Lyric poetry. Lectures and recitations based on Canfield's French Lyrics. T., Th., 11, *White 11.* Assistant Professor OLMSTED.

Open to those who have had courses 1, 2.

10.* **Romance Seminary.** Phonetics, Old-French, or Provençal texts, etc. M., W., 8, *French Seminary Room, Library.* Dr. LODEMAN.

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

11.* **Modern French Criticism.** Sainte-Beuve, Taine, Faguet. W., F., 9, *White 11.* Mr. MOORE.

Open to those who have had courses 1, 2.

12. **Literature of the Nineteenth Century.** Prose and verse from the principal writers since Hugo. Lectures and recitations based on Pelissier's Le mouvement littéraire au xix^e^ siècle. T., Th., 10, *White 13.* Dr. SEGALL.

Open to those who have had courses 1, 2.

13. **The Theatre of the Nineteenth Century.** Readings in French. S., 10. *White 13.* Dr. SEGALL.

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

14. **French Conversation and Composition.** T., Th., 11, *White 13.* Dr. SEGALL.

This elementary course will be continued in 1900–1901, and is open to those who have had courses 1, 2, or their equivalent, and in the judgment of the instructor are capable of pursuing the course with profit.

15. **Italian Reading.** Selections from Dante, Petrarch and Boccaccio. T., Th., 8, *White 10.* Professor CRANE.

Open to those who have had course 16.

16.* **Italian Grammar and Reading.** W., F., 12, *White 11.* Assistant Professor OLMSTED.

This course cannot be taken in the same year with course 17, and is open to those who have had advanced entrance French or Latin.

17.* **Spanish Grammar and Reading.** T., Th., 8, *White 13.* Dr. LODEMAN.

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

18.* **Spanish Reading.** Cervantes, Calderon, Lope de Vega. T., Th., 12, *White 13.* Dr. LODEMAN.

Open to those who have had course 17.

ENGLISH.

Rhetoric.

Course 1 is fundamental. Thorough instruction is given in the structure of the sentence and the paragraph; the general principles of diction are also taught and illustrated. Course 2 is a training in daily observation and reflection and in rapid practical writing.

Courses 1*b*, 4, 5, and 8 are literary in substance, but are shaped with a view to the acquisition of a more finished prose style.

Courses 3 and 9 are designed for persons intending to become high school teachers or desirous of studying literary expression more systematically.

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

Course 7 is designed to supplement Courses 3, 4, and 8.

1. **The technique of narrative, descriptive, and expository writing.** A three-hour course, open to all students in Arts and in the regular course in Agriculture. One lecture weekly and two exercises in paragraphing, essay-draughting, and the interpretation of illustrative texts, in connection with Hart's Handbook of English Composition. M., W., 9, 10, T., Th., 11, *White 1b.* Mr. GASTON. M., W., T., Th., 9, T., Th., 10, *White 1a.* Mr. MONROE. T., Th., 9, M., W., 11, *White 1b*, T., Th., 11, *White 1a.* Mr. ANDREWS. Th., 12, *Library Hall.* Professor HART.

1*b*. **Exposition.** Open to students who have had Course 1. An introduction to methods of research and the arrangement of material. Lectures, with written exercises in the draughting and elaboration of expository themes. M., W., 11, *White 1a.* Dr. NORTHUP.

2. **English Composition.** Counts as three hours. Open to students who have had Course 1. Each member of the class will write every week a fixed number of papers of prescribed length upon subjects chosen by himself. Consultation hours for the discussion and criticism of papers. One lecture weekly: either, W., 11, *White 2*, Assistant Professor PRESCOTT; or, F., 10, *White 2*, Assistant Professor STRUNK; or, Th., 12, *White 2*, Dr. NORTHUP.

2*a*. **English Composition.** Counts as two hours. For regular students in the College of Agriculture who have had Course 1. Students who expect to take this course should consult Assistant Professor PRESCOTT.

3. **Literary Forms.** Open to all members in the course in Arts. Lectures, discussions, and collateral reading. Designed to enable the

student to recognize and classify the leading species of literary composition, and to learn their history and underlying principles. Fall term: Poetry, the principal topics being metre, the ballad, the epic, the lyric, and the sonnet. Winter term: the Drama, an account of its principal types, with their theory. Spring term: Prose, the principal topics being the essay and the novel. T., Th., 10, *White 2*. Assistant Professor STRUNK.

[4. **English Prose,** Seventeenth Century. Assistant Professor STRUNK.]

5. **English Prose,** Eighteenth Century. Open to students who have had Course 1. Lectures upon the leading prose writers, with special reference to style. T., Th., 11, *White 2*. Assistant Professor PRESCOTT.

6. **Argumentative Writing.** Open to students who have attained good rank in Course 1, or have had Courses 1 and 2. Preparatory to Course 22. Six written arguments, preceded by briefs. Study of masterpieces of argumentation. Lectures on argumentative writing and on the use of evidence. M., W., F., 10, *White 1a*. Assistant Professor PRESCOTT.

7. **Origin and Development of English Dramatic Theory and Forms.** Open to students who have had Courses 1 and 10 [or 11] and as much Latin and French as may be offered for admission in Group B. Lectures on the influence exerted by the Church Plays (Latin–French), and upon the relation of English dramatic forms to classic. Readings in Manly, Specimens of the Pre-Shaksperean Drama. M., W., F., 12, *Morrill 22*. Professor HART.

8. **French Influences in English Literature.** Open to students who have had Course 1 and as much French as may be offered for admission in Group B. Lectures and readings. T., Th., 9, *White 2*. Assistant Professor STRUNK.

9. **Advanced Rhetoric.** Open to students in Arts who have had Courses 1 and 2 (or 1b) and either 3 or 4 or 5 [5 *a*]. A special study of paragraphing and sentence-structure. For students intending to become high-school teachers or writers. Lectures and written exercises in criticism. M., F., 9, *Morrill 22*. Professor HART.

Philology.

Course 10 is elementary, for persons intending to become high-school teachers or desirous of studying early English history or Elizabethan literature.

Course 12 is for the special training of high-school teachers.

Courses 13 and 14 give thorough training in the methods of philo-

logical science as applied to English. The language is studied in its historical evolution, from the earliest recorded movements down to the seventeenth century. Stress is laid upon the relations between English and the cognate languages of the continent. The collections of books and other material in the University (and Seminary) libraries and in the possession of the head of the department are quite complete and afford ample facilities for the most advanced research.

10. **The History of the English Language**. Open to all students in Arts. An elementary course, complete in itself, but also furnishing a useful introduction to more systematic study. Lectures, in connection with Emerson, Brief History of the English Language; readings in Sweet, Primers of Anglo-Saxon, Middle English, and Chaucer. M., W., F., 10, *White 2*. Dr. NORTHUP.

12. **Grammar of Modern English**. Open to students in Arts who have had Course 10. Planned especially for students intending to become high-school teachers of English. A careful study of Sweet, A New English Grammar, with practical exercises. W., F., 10, *Morrill 22*. Professor HART.

13. **Old English Philology**. For students engaged in the systematic study of the language. A knowledge of Greek, Latin, and German is required for admission. Students are also advised to take Course 10 in preparation.

a. Fall term. Gothic, its phonology and inflections, with readings in Wright, Gothic Language Primer, and lectures upon the relations of Gothic to Indo-European and Germanic, based chiefly upon Streitburg, Urgermanische Grammatik.

(Students pursuing General Comparative, or Germanic, Philology, and not wishing to specialize in English, may discontinue at the end of this term.)

b. Winter and spring terms. Anglo-Saxon, its phonology and inflections, with a study of Cook-Sievers, Old English Grammar, and MacLean's Old and Middle English Reader. Lectures upon word-formation and inflection in Gothic and Old English. M., W., F., 9, *English Seminary Room*. Assistant Professor STRUNK.

[14. **Middle English Philology**. For students who have had Course 13. A critical study of the changes in the language, 1100–1500. Readings in Morris-Skeat, Specimens of Early English, Part I, with lectures upon Middle English phonology, based chiefly upon the treatises of Sweet, Kluge, and Morsbach. Professor HART.]

15. **Seminary in Old English**. Studies in Wulfstan's Homilies. Hours to be announced hereafter. Professor HART.

16. **Seminary in Middle English**. Studies in Layamon. Hours to be announced hereafter. Professor HART.

17. **Phonetics**, with especial reference to Modern English. Lectures upon the methods of Passy and Roussilot. One hour weekly, to be announced hereafter. Assistant Professor STRUNK.

Courses 1, 1b, 2, 3, 4, 5, 6, 10, 12, are for undergraduates only and may not be taken as graduate studies.

Courses 14, 15, 16, are primarily graduate studies, but 14 may be taken by undergraduates.

Courses 7, 8, 9, 13, are primarily undergraduate studies, but may be taken as minor subjects for advanced degrees.

Courses 1, 3, 10, are open to freshmen.

Courses 1, 2 (or 1b), or (1b), 3, 9, 10, and 12, are required of students who desire to be recommended—by the department—to high-school teacherships of English. For other teacherships, 1, 2 (or 1b), and 9 are required.

Oratory.

Office of the department, White 16a.

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

The essentials of good speaking are taught in five elective courses, two elementary and three 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 Elocution and Oratory, and an Instructor. 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 selections from orations and speeches of public men. 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 inter-

pretation 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 spring term, 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 course in oratory gives an acquaintance with the masters and masterpieces of the oratorical art and to develop on the part of the student such an appreciation of true oratorical style that his writing may be more vigorous and better adapted to public delivery. The course comprises 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 are then delivered before the class and the public.

A seminary for the study of English style in oral discourse is conducted during the second term.

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

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

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

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

The following courses are offered for 1899–1900.

20. **Public Speaking.** An elementary course prescribed for admis-

sion to courses 21, 22 and 23. A practical training in public speech. A study of the elements of beauty and power in the language and the principles upon which the communication of thought and feeling depend. Extracts from orations, interpreted and assimilated, and delivered in class and in public with criticism and suggestion. Weekly speaking exercises last half of year; each exercise preceded by a written report following "How to study a declamation" and by individual instruction under one of the teachers of the department. Open to juniors who have pursued one or more courses in the department of rhetoric for at least one year, and to sophomores whose record in English 1 is of a high grade and who purpose specializing in the department during junior and senior years. Three sections, three hours. M., W., F., 9, 10, 11, *White 16.* Assistant Professor LEE and Mr. WINANS.

20a. **Public Speaking.** Adapted to the special needs of students in the College of Law. Open to all law students who are not deficient in the English prescribed for admission to the College. Three sections. M., W., F., 8, 12; T., Th., S., 8, *White 16.* Assistant Professor LEE and Mr. WINANS..

Supplementary to both courses, personal instruction throughout the year by appointment. Messrs. WINANS and EVERETT.

The '86 Memorial Prize in declamation is awarded annually in connection with courses 20 and 20a, the first competition being held about the middle of February.

21. **Formal Oratory.** The writing and delivering of orations; theory and practice. Fall and winter terms. Three hours. Fall term, lectures upon the history of oratory and the structure of orations; the study and analysis of British and American masterpieces; exercise in writing orations, speeches and addresses. Each production read and criticised with the author. T., Th., 12. Winter term, public delivery of orations weekly. M., 7:30. Seminary. T., 12. Other exercises as assigned. *White 16.* Open to seniors who have passed in English 1 and 2 and have pursued with distinction English 20, or its equivalent. Assistant Professor LEE and Mr. WINANS.

Instruction in this course keeps in view the Woodford Prize in oratory.

22. **Debate.** The theory of the preparation of debates and brief-writing, with practice in the oral discussion of questions of present interest. Winter and spring terms. Winter term, lectures and briefs; spring term, debates; each debate preceded by briefs. Open, in order of merit, to a limited number of juniors and seniors who have passed in English 6 and have pursued English 20 or 20a with distinction.

The course will be continued through the fall term of the following year to enable the more proficient to carry on advanced study. Two hours. S., 9–11, *White 16*. Assistant Professor LEE and Mr. HAUSNER.

23. **Extempore Speaking.** Weekly addresses thoroughly outlined and mastered. Exercises based upon assigned topics in the fields of American history, political science, education and current events. Study of vocabulary and systematic treatment. Open, in order of merit, to a limited number of seniors who have pursued English 20 or 20a with distinction. Two sections. Two hours. M., W., 4–6, *White 16*. Assistant Professor LEE.

Application for admission to this course should be made before registration day of the fall term.

Instruction in courses 22 and 23 is directed toward the acquisition of a proficiency in that field in which the University offers the '94 Memorial Prize.

In connection with all the above courses, ample provision is made for personal conference between each student and his instructors.

English Literature.

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

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

The following courses are offered in 1899–1900.

30. **General Lectures on English Literature.** Lectures and collateral readings. Two hours. Fall: Spenser, Sidney, Lyly, etc. Winter: Marlowe, Shakespeare, Ben Jonson, etc. Spring: Milton, and 17th and 18th Century literature. T., Th., 12, *Morrill 5*. Miss BROWNELL.

This course is intended primarily for freshmen, and aims at giving a wide course of reading in the masterpieces of English Literature, to serve as a basis for later work and study.

31. **Lectures on English Poets of the Romantic School.** Two hours. Fall: Shelley and Byron. Winter: Keats and Coleridge. Spring: Wordsworth. T., Th., 10, *Morrill 5*. Miss BROWNELL.

The greater part of the poetry, and selections from the prose of of these authors will be read, and each member of the class will present a paper on some assigned topic.

32. **Lectures, with readings, on American poetical and prose literature,** from Bryant to the present time. T., Th., 11, *Barnes Hall.* Professor CORSON.

33. **Lectures on the English Poets of the 19th Century,** of whom Wordsworth, Coleridge, Southey, Byron, Shelley, Keats, Tennyson, Matthew Arnold, Mrs. Browning, and Robert Browning, will be specially treated. M., W., F., 10, *Barnes Hall.* Professor CORSON.

The course will begin with Browning's, The Ring and the Book, and will continue in an inverse order, ending with Wordsworth's Prelude.

34. **Lectures on English Dramatic Literature.** Special Studies: Marlowe's Jew of Malta and Edward the Second; Shakespeare's Merchant of Venice, Romeo and Juliet, King John, Much Ado About Nothing, Hamlet, Macbeth, Antony and Cleopatra, King Lear, Winter's Tale, and the Tempest; Ben Johnson's The Alchemist; Beaumont and Fletcher's Philaster; Fletcher and Shakespeare's The Two Noble Kinsmen; Webster's The Duchess of Malfi. (Examinations in Shakespeare will be based on Corson's Introduction to the Study of Shakespeare.) Included in this course will be lectures on the Drama of the Restoration, the Collier Controversy, the Sentimental Drama, the reactionary plays of Goldsmith, and the plays of Richard Brinsley Sheridan. T., Th., 10, *Barnes Hall.* Professor CORSON.

35. **Lectures on Chaucer's Canterbury Tales and Troilus and Criseyde,** and readings from the Canterbury Tales (Corson's Selections), and from the Vision of William concerning Piers the Plowman (Dr. Skeat's Selections, Clarendon Press Series). F., 11, *Barnes Hall.* Professor CORSON.

Graduate Seminary. Studies will be assigned at the meeting which will be called of the graduate students in the department, soon after the beginning of the Fall term. Two hours. Professor CORSON. No student is admitted to the Seminary for a less period than a year, and only those graduate students are admitted whose previous literary education has fitted them for the work.

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. At a meeting of the Board held Oct. 22d, 1890, Mr. Sage

signified his intention of adding to the endowment of the Susan Linn Sage philosophical professorship, which he had established in 1886 in memory of his wife, a further gift of $200,000 to the Department of Philosophy. His object was to provide permanently at Cornell University for philosophical instruction and investigation of the most varied kind and of the highest order. To that end he stipulated that the Trustees should, whenever it was needed, 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, a professor of the science and art of education, an assistant professor of Greek philosophy, two instructors in philosophy, and an instructor and an assistant in psychology. Thus all sides of philosophy are represented in the courses of instruction. Furthermore every method of discovering truth—observation, experiment, historical investigation, reflection, and speculation—is welcomed within its appropriate domain.

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

The Psychological Laboratory (Morrill Hall) consists of a suite of ten rooms, occupying a space of approximately 140 x 45 feet. Every room is connected with every other by an elaborate system of telegraph wires, so that two or more rooms can be employed in a single investigation. Two rooms are devoted to work in psychological optics

(one of them a dark room, 18 x 24 feet); and one each to acoustics, haptics, and chronometrical registratiou. A large lecture-room is used for experimental drill-work and demonstration. There are further a workshop and storeroom, a room for olfactometry, 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.

"The Philosophical Review" 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 a very powerful stimulus to students, whose constant intercourse with the members of the staff who are engaged in writing and planning for it, enables them to keep abreast of current philosophical problems and discussions. The "Review" also furnishes advanced students with a ready medium of publication. The results of original investigations which have been accepted for doctor's degrees are, in some cases, published in it.

With the "Review" for publishing and a large faculty of specialists for investigating, the school lays great stress upon original research and inquiry. While much of the instruction is intended for undergraduates, the larger part of it is adapted to the needs of graduates of this and other institutions who are preparing themselves for positions as teachers, professors, etc. A student who has made a special study of philosophy during his junior and senior year, may still take a graduate course of three years' work with psychology, or metaphysics, or ethics, or any other single philosophical discipline as his major subject. And for the encouragement of higher studies and research in every branch represented by the School of Philosophy there have been established for award to distinguished graduates of this and other Universities, six scholarships of the annual value of $300 each, and three fellowships of the annual value of $500 each, both scholarships and fellowships being tenable for one year, but subject to renewal in exceptional cases. (A full account of these scholarships and fellowships will be found on page 64.) 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.

Bracketed courses are not given in 1899–1900.

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

Psychological courses (*consultation hours: Professor Titchener, T., Th., S., 12, Psychological Seminary Room, Morrill 16*), will be found under the numbers 1, 2, 11, 13, 14, 28; courses in *Logic* and *Metaphysics*, under numbers 1, 18, 20; courses in *Ethics* under numbers 1, 6, 7, 21, 31: courses in the *History of Philosophy* under numbers 3, 4, 5, 10, 12, 15, 16, 17, 18, 19, 22, 23, 24, 29, 30; courses in the *History and Philosophy of Religion* under numbers 8, 25, 33; courses in the *Science and Art of Education* under numbers 9, 9a, 26, 27, 32; *Reading Courses* under numbers 11, 12.

I. Course Primarily for Sophomores.

1. **Introduction to Philosophy: Psychology, Logic, Ethics.** T., Th., S., 11, *Library Lecture Room.* Psychology, Fall term, Professor TITCHENER. Logic, Winter term, Professor CREIGHTON. Ethics, Spring term, Professor MCGILVARY.

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

In the fall term the class meets for lectures on Psychology by Professor Titchener, whose aim is at once to give an outline of what is established in the subject, and to remove obstacles from the path of beginners in mental science. Students who intend to enter upon this course are advised to take work in Physiology during their freshman year. The lectures will be supplemented by experimental illustrations, and Titchener's *Outline of Psychology* used as a text-book in the course.

On the completion of this course at Christmas, Logic is taken up for the winter term. The lectures will present in an elementary way what is known regarding the general character of the thinking

processes, 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 to practice in the detection of fallacies. Creighton's *Introductory Logic* will be used as a text-book.

In the spring term, Professor McGilvary will give a series of lectures on the development of moral ideals among mankind in primitive, ancient, and modern times. The object will be, through a concrete and historical study of actual moral conceptions, to awaken reflection upon the chief problem of Ethics—the nature of the Moral Ideal.

II. Courses Primarily for Juniors and Seniors.

2. **Experimental Psychology.** Lectures and laboratory work. M., W., F., 3, *Laboratory Lecture Room.* Professor TITCHENER, Dr. BENTLEY, and Mr. WHIPPLE.

The course falls into three parts. (1) In the fall term, the lectures deal with some province of sensation and perception selected by the class. The laboratory work is qualitative in character, and consists in the repetition by the student of the classical experiments in the fields of sensation and perception. (2) In the winter term, lectures are given, with demonstrations, upon the chief psychological measurement methods. The laboratory work is quantitative : verification of Weber's law in the various sense-departments, determination of stimulus limina, measurement of memory, attention, etc. (3) In the spring term, the lectures are concerned with the psychology of action and emotion. The laboratory hours are devoted to a drill-course in the psychophysics of action (reaction time experiments), which affords training in introspection, and in the control and rapid adjustment of the attention. Occasionally, the original investigation of simple psychological problems is substituted in this term for the regular work of the course.

2(a). **Mental Derangement.** Spring term. One hour, M., (p. m.), *Botanical Lecture Room.* Dr. WAGNER.

A course of lectures, dealing with the general history of the insane and the provision made for their care ; the manifestations of insanity, and the nature and significance of delusions, hallucinations and illusions ; the forms of mental derangement, and principles of classification ; the conditions of insanity, and the treatment of the insane.

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

This is an elementary course, and is intended primarily for the gen-

eral 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.

3(a). **The Influence of Philosophic Ideas upon Nineteenth Century Literature.** Lectures. Winter term. One hour (to be arranged). Dr. ———.

This course, open both to graduate and undergraduate students, will trace the general influence of philosophical conceptions, and particularly of German Idealism, upon English and American Literature.

4. **The Dialogues of Plato.** In English. One hour (to be arranged). Fall term. *White 5.* Acting Assistant Professor FAIRBANKS.

This course is intended for students of Philosophy, of Greek, and of English literature. Some of the most important dialogues will be read in the translation of Jowett, and discussed with reference to their philosophic content and their literary art.

4(a). **Social Ethics of the Ancient Greeks.** One hour (to be arranged). Winter term. *White 5.* Acting Assistant Professor FAIRBANKS.

This course will consist of a series of lectures on the ethical and social ideals of the Greeks as reflected in their literature.

4(b). **History of Ancient and Mediæval Philosophy, with special reference to Aristotle and Aristotelianism.** Lectures. T., Th., 12, *White 5a.* Acting Assistant Professor FAIRBANKS.

This course will consider the various problems of philosophy which presented themselves to the Greek mind, and the solutions which the Greeks offered in their historical systems, or fragments of systems, from Thales to the Neo-Platonists. Some time will also be given to the development of Greek thought in Rome—especially to Stoicism and Epicureanism. The course will further treat the leading features of Scholasticism.

5. **The Theory of Evolution: Its History and Significance.** Lectures. F., 12, *White 5.* Dr. IRONS.

These lectures are intended primarily for undergraduates. They do not presuppose acquaintance with the history or special terminology of philosophy. The opening lectures will trace the history of the theory of evolution from the first appearance of the concept among

the Greeks to its formulation in modern times by Darwin. It is then proposed to discuss the recent modifications of the theory, and to indicate the application of the evolutionary method to the various sciences, special attention being directed to its bearing on biology, sociology, ethics, and religion.

6. **Systematic Ethics.** Lectures, discussions, and text-book study. T., Th., S., 11 (fall and winter terms), 8 (spring term), *White 9.* Professor McGILVARY.

An outline of ethical theory, based upon a critical study of the chief systems of ethics, in the light of their historical development. The course will deal with the Moral Ideal, with its application to the regulation of life, individual and social, and with the metaphysical implications of morality. It will be founded upon Seth's *Study of Ethical Principles*, with collateral reading.

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

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

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

These lectures will be given in two courses, one hour each. They may be taken separately. The course on Mondays will deal with Primitive Religion, the origin of religious ideas, cults, and rites of Syro-Arabic and other peoples. The *History of Religions* by Dr. Allan Menzies will be used as text-book. The course on Wednesdays will deal with Comparative History of Religion: the religions of India, Egypt, China, Greece, and Rome. Hopkins, Rhys Davids, Oldenburg, C. P. Tiele, Brinton, and others will be consulted as authorities.

9. **The Philosophy of Education.** Lectures, discussions, and text-book study. M., W., F., 2, *White 10.* Professor DE GARMO.

9 (a). **The Teaching of University Subjects in the High**

School. Lectures. F., 3, *White 10.* By Professors of the University.

10. **Selections from the Republic of Plato and the Ethics of Aristotle: Readings in the Greek.** M., W., F., 11, *White 5a.* Acting Assistant Professor FAIRBANKS.

This course is intended for students of Greek Literature as well as of Greek Philosophy. Books i-iv and x of the *Nicomachean Ethics* and the most important parts of the *Republic* will be read carefully through, attention being paid both to subject-matter and manner of statement. The text of Adam (The Macmillan Company, New York) is recommended for Plato, and the text of Susemihl (Teubner, Leipzig) for the *Nicomachean Ethics.*

Reading Courses:—

11. **Reading of Psychology, in French, German, or Italian.** T., 9, *Laboratory Lecture Room.* Professor TITCHENER or Dr. BENTLEY.

The aim of this course is to introduce students to the terminology and literature of foreign psychology.

12. **Rapid Reading of German Philosophy.** S., 12, *White 5a.* Dr. IRONS.

The primary aim of this course is to aid the student in acquiring facility in translation, and a knowledge of German philosophical terminology. Schopenhauer's Essay *Ueber die vierfache Wurzel des Satzes vom zureichenden Grunde* will be translated.

III. Courses Primarily for Seniors and Graduates.

13. **Systematic Psychology.** Lectures, essays, and experimental illustrations. M., W., F., 9, *Laboratory Lecture Room.* Professor TITCHENER and Dr. BENTLEY.

The object of the course is twofold: to give the student a complete, if tentative, system of psychology, based upon the results of the experimental investigation of consciousness; and at the same time, by copious references to rival theories, to orientate him in experimental psychological literature.

14. **Psychological Theory.** Th., 9, *Laboratory Lecture Room.* Dr. BENTLEY.

The object of this course, which will be offered in the Winter and Spring terms, is to present, with critical commentary, the views held by modern psychologists upon fundamental psychological questions.

[15. **Aristotle's Nicomachean Ethics.** Three hours. Acting Assistant Professor FAIRBANKS.]

This course was given in 1898–99, and will be repeated in 1900–1901.

16. **Empiricism and Rationalism.** Lectures, discussions, and essays. T., Th., 10, *White 5a*. Dr. ALBEE.

The design of this course is to prepare juniors and seniors, and graduate students who have not had a similar course, for more advanced work in Philosophy.

17. **The Critical Philosophy of Kant.** Lectures and discussions. M., W., 10, *White 5a*. Dr. ALBEE.

18. **Problems of Metaphysics.** Fall term. Lectures and discussions. M., W., 12, *White 5*. Professor CREIGHTON.

[19. **Post-Kantian Idealism.** Lectures. Two hours. Professor CREIGHTON.]

This course was given in 1898–99, and will be repeated in 1900–1901.

20. **Logical Theory.** Lectures, examination of prescribed authors, and discussions. M., W., 11, *White 5*. Professor CREIGHTON.

21. **History of Ethics.** Lectures, essays, and discussions. W., F., 11, *White 9*. Professor MCGILVARY and Dr. ALBEE.

A study of the course of ethical reflection, with special reference to the development of the several theories in their relations to one another and to the general influences of their time. This class will use Sidgwick's *History of Ethics* as a general text book.

22. **German Pessimism, with special reference to Schopenhauer and E. von Hartmann.** Lectures and discussions. Winter and Spring Terms. T., Th., 11, *White 5a*. Dr. IRONS.

In this course attention will be directed, not only to the ethical and social import of the outburst of Pessimism in this century, but also to the significance of the metaphysical systems of Schopenhauer and von Hartmann in the history of philosophy. Special attention will be devoted to the system of Schopenhauer. In connection with this course students will be expected to read Scophenhauer's *World as Will and Idea*, and von Hartmann's *Philosophy of the Unconscious*.

[23. **The Philosophy of Lotze.** Lectures and discussions. Winter and Spring Terms. Two hours. Dr. IRONS.]

This course was given in 1898–9, and will be repeated in 1900–1901.

24. **Recent French Philosophy.** Lectures. One hour (to be arranged). *White 5a*. Dr. IRONS.

[24 (a). **Recent English Philosophy.** Lectures. One hour. Dr. IRONS.]

This course was given in 1897–8, and will be repeated in 1900–1901.

[24 (b). **Recent German Philosophy.** Lectures. One hour. Dr. IRONS.]

This course was given in 1898–9, and will be repeated in 1901–1902.

25. **Philosophy of Religion.** Two courses: (a) lectures, T., 12; (b) discussions and essays, Th., 4–6, *White 9*. Professor TYLER.

In section (a) the grounds of religious belief—metaphysical, ethical, aesthetical, and spiritual—will be treated in as popular a style as the nature of the subject will permit. Agnosticism, Pantheism, and Theism will be compared with each other. The last few minutes of the lecture hour may be occupied by the asking of questions. In section (b) Martineau's *Study of Religion* and Lotze's *Outlines of the Philosophy of Religion* will be made the basis of work. Pfleiderer, Max Müller, Renouvier, Reville, Campbell Fraser, and other writers will be consulted. In this section there is extended the privilege of free discussion, and short papers will from time to time be read and discussed.

26. **Psychologic Foundations of Education.** Lectures, discussions, and text-book study. M., T., Th., 3, *White 10*. Professor DE GARMO.

This course will trace the outlines of the history of psychological theory as bearing upon education. Courses 1, 2, and 9 are desirable as a preparation.

27. **History of Education.** Lectures, prescribed reading, discussions, and essays. T., Th., 2, *White 10*. Professor DE GARMO.

This course should be preceded by courses in history and in the history of philosophy.

IV. Seminaries.

28. **Seminary for Psychology, and Advanced Laboratory Work.** Afternoons, except S., 2–6; M., W., F., 10–12. Professor TITCHENER, Dr. BENTLEY, and Mr. WHIPPLE.

The Seminary will meet weekly, in three sections for the critical and historical discussion of psychological questions. These will, for the most part, be chosen with reference to theses-subjects for the baccalaureate and advanced degrees.

29. **Seminary in Ancient and Mediæval Philosophy.** Two hours. In this seminary, which is open to graduates and seniors, the *Theætetus* of Plato will be read, and students will be directed in thesis work, or in any investigations they may be carrying on in this department. Acting Assistant Professor FAIRBANKS.

30. **Seminary in Modern Philosophy.** Th., 3-5. Professor CREIGHTON and Dr. ALBEE.

During 1899–1900 both graduate and undergraduate sections of this seminary will meet together, and the Philosophy of Spinoza made the subject of study.

31. **Ethical Seminary.** Two hours. Professor MCGILVARY and Dr. IRONS.

The subject will be in alternate years: (a) A topical study of one or more of the chief problems of Ethics, with special reference to recent and contemporary solutions. (To be given in 1900–1901.)

(b) A study of one of the great ethical treatises, or of some movement of ethical thought, chosen with reference to the needs of students, especially those engaged in thesis work. (To be given in 1899–1900.)

32. **Seminary for the Science and Art of Education.** W., 3–5. Professor DE GARMO.

The work of the seminary will consist of reports and theses upon educational problems, and of discussions upon the theory and practice of teaching. It must be preceded by the course on the Philosophy of Education, or by that upon Educational Psychology.

33. **Seminary for the History and Philosophy of Religion.** Two hours. Professor TYLER.

In this course, graduate students who have undertaken theses on the History or Philosophy of Religion will be assisted in the work of investigation.

MUSIC.

1. **Chorus.** Course in chorus singing. Chorus work, including chanting and the study of chorales and choruses.

This course is open to students passing a required test examination in reading music. Examination held at the opening of the University year. Attendance at two rehearsals each week and at the morning service in Sage Chapel is required.

Rehearsals, Tuesday, 5:00 to 6:15; Thursday, 7:15 to 8:15 p.m., *Sage Chapel.* Two hours. Mr. CHADWICK.

2. **Advanced Chorus.** Sight reading, study, interpretation, and public presentation of the best choral works. This course is offered as advanced training to students possessing good voices and who have had elementary instruction in musical notation. Examination for admission will be held at the opening of the university year. Members of this class will unite with the Conservatory Chorus, which will participate in the weekly vesper services. Two hours. Hours to be arranged. Mr. BEALL.

3. **Orchestra.** Study of orchestral compositions and accompaniments. For strings and full orchestra. The orchestra will assist at the Sunday afternoon vesper services. Two hours. Hours to be arranged. Mr. EGBERT.

HISTORY AND POLITICAL SCIENCE.

By action of the Board of Trustees, in view of the gift to the University by ex-President Andrew D. White of his valuable historical library, the departments of History and Political Science have been named THE PRESIDENT WHITE SCHOOL OF HISTORY AND POLITICAL SCIENCE. The work of these departments is carried on by five professors, one assistant professor, and two instructors.

A.—Ancient and Mediæval History.

As a general introduction to the study of history a seminary course of two hours weekly deals with the scope, the materials, and the methods of the study, with the sciences auxiliary to history, and with the elements of historical geography. This course is meant, however, not for beginners but for those fitting themselves for the teaching or writing of history. A two-hour course of alternate lectures and examinations, running through two years, is devoted to the history and civilization of ancient Greece and Rome. It is intended only for those who have not had pre-university training in these subjects. (Courses on the life and the antiquities of the Greeks and the Romans are offered by the professors of Greek and of Latin; and the history of the Orient is treated in a course of two years by the professor of Semitics.) The general history, political, social, and ecclesiastical, of the Middle Ages, is dealt with in a lecture course of three hours throughout the year, alternating with a similar course on the Age of the Renaissance and the Reformation. For training in historical research in this field there is offered a year's seminary course; the class is first familiarized with the mediæval Latin which is the language of the sources, then taught to read the manuscripts and to interpret the documents of the Middle Ages, and, thus fitted, is in the third term set at the critical study of some event, period, or author, in free use of the resources of the library.

B.—Modern European History.

The department of Modern European History, which includes English History in its entirety, offers four courses of lectures, each extending through the academic year. In Modern European History the general course, which is intended for Juniors, covers from the beginning of the 17th century to the present time, devoting one term to the 17th, 18th, and 19th centuries, respectively. Students who have taken this course are permitted to attend the more advanced lectures, devoted to special periods, such as the French Revolution, the Napo-

leonic Era, the Reign of Frederick the Great, etc., and are trained in the use of primary authorities. In English History a general course, intended for Sophomores, is given, which covers the entire history of the nation, while there are advanced courses, given in alternate years, in English Constitutional History, with special reference to the growth of those institutions, legal and political, which have been perpetuated and developed in America; and in the history of the British Empire, dealing in turn with India, the other dependencies, and the self-governing colonies. An undergraduate seminary meets once a week, in which special work is done in connection with their baccalaureate theses by those writing them in this department. Graduate students meet once a week for special work in a seminary room equipped for the purpose.

C.—American History.

In American History are eight principal courses, each one extending through an entire year. The first four courses are designed to give a systematic view of the general history of our country, including also the Commonwealth of New York, from the earliest times to the present; with constant reference to the primary sources of knowledge on the subject, to the principles of historic criticism, and to the proper estimation and use of the leading secondary authorities.

The fifth course, which is open only to those who have already taken at least one of the introductory courses just mentioned, is intended to furnish a special and somewhat technical study of American Constitutional History during the colonial, revolutionary, and national periods.

Besides these, there are three courses for training in historical research and in the formulation of results; two being seminaries for undergraduates, the third being the American History Seminary proper, and open to graduates only. For the exclusive use of this graduate seminary is a suitable room in the library, where ample facilities are provided for historical research in the primary documents. Each seminary holds a meeting every week for reports of work done, with criticisms of methods and discussions of results.

D.—Political Science.

In Political Economy an elementary course is offered of three hours a week for two terms. The course is divided into two parts: (a) Work based on Bullock's "Introduction to the Study of Economics," two hours a week. The class will be divided into several sections so as to afford ample opportunity for questions and discussions. An outline

of the whole subject will be given. (b) A course of lectures on "The Relation of the State to Business" will be given to the whole class once a week. In this course the field of Economics is approached from a different side so as to give the student a clearer view of the relations of Economics to the cognate sciences. During the third term the course is continued by lectures introductory to the whole field of Political Science, explaining the nature of Politics, Social Science, Economics, and Finance and their relations to cognate sciences. The students in engineering, of whom the elementary course is required, take in the spring term a course in Transportation, which is open to other students also.

In the advanced courses the study of the historic development of economic theories and of the relations between economic and philosophical speculation aims to give a thorough knowledge of the science from the theoretic side, while other courses : Money, Credit, and Banking with a History of Financial Legislation in the United States; Modern Industrial Organization ; Taxation, Public Credit and Financial Administration emphasize the practical side of the study. The courses in the Industrial and Economic History of Europe and the United States and in Commercial Geography will supply a much needed knowledge of economic facts with their causal relations. In the course in Economic Legislation, a study of some economic questions that are at present subjects of legislation, with the use of bills actually before a legislature, and a comparative study of the laws of other states and countries, will serve not merely to throw light upon the subjects discussed, but also to explain why many laws on such subjects seem so imperfect and to show the complex nature of the task of the conscientious, trained legislator.

The course in Political Institutions by a study of the nature of the State and by a somewhat detailed comparison between the chief systems of government in Europe and the United States, with especial reference to the practical working rather than to the mere letter of the law, aims to give needed knowledge of these important facts, 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. A special course is given to the subject of local and municipal government.

The course in the History of Political Ideas and those in International Law and General Jurisprudence aim to give information of general interest and value to all thoughtful citizens, while the one discussing Modern Questions in International Politics, besides helping to make clear the political relations of modern states, may afford also present day illustrations of political principles in action.

The elementary course in Social Science begins with an effort to determine the social significance of the theory of evolution. In the light of this analysis the rest of the year is given to a survey of some important social questions (such as pauperism, crime, immigration, and race problems). The aim is to present the changes and principles of change in society and to encourage the disinterested investigation of social questions. At least one essay embodying the results of personal research is required of each student. There are two advanced courses which are given in alternate years. The theoretical course is a study of the logic of the social sciences and especially of sociology. The practical course is a detailed study of a few closely related social questions. It will presuppose a familiarity with the simpler statistical methods and is thus a natural continuation of the elementary course in statistics. This last runs parallel to the elementary course in social science and the two may be profitably taken the same year. It is occupied in 1899–1900 mainly with a critical study and analysis of the statistics of prices and of international trade. It aims to exemplify sound methods, to point out erroneous methods of statistical investigation, and to prepare students for independent statistical research. The library has recently secured a number of sets of standard statistical periodicals and is now exceptionally well supplied. It has complete sets of the Zeitschrift des königlichen preussischen statistischen Bureaus, Zeitschrift des königlichen sächischen statistischen Bureaus, Statistische Monatschrift, Jahrbücher für Nationalökonomie und Statistik, Journal de la Société de Statistique de Paris, Journal of the Royal Statistical Society, as well as many more recently started series. The statistical laboratory is equipped with slide rules, a comptometer, Hollerith's electric tabulating machine, etc., and students are trained to familiarity with their use.

The elementary course in Anthropology aims by reading, discussion and investigation to give a more definite idea of the significance for the social sciences of the theory of evolution and of studies iuspired by it.

Throughout the department, while economic and political theories are not neglected, the effort is to make the courses of much direct, practical value to students about to enter active life as citizens. This purpose is kept in view not merely in the selection of subjects for the courses, but also in the methods employed in teaching. Independent, unprejudiced, scientific habits of thinking on even partisan questions are aimed at rather than the inculcation of the doctrines in which the teacher may believe.

Besides the emphasis laid on questions of the day in several of the

regular courses there have been secured a number of special lectures on Banking, Investments, the Stock Exchange, Diplomacy. the Government of the State of New York by the State Officials, and other subjects, as announced in detail on p. 129. Students who expect later in life to enter the professions of the law or journalism or to engage in business or politics, can readily elect courses that will be of practical assistance ; and frequently collateral courses in law or history should be taken in combination with those of this department, by students whose aims are thus clearly fixed. The professors in the department are always glad to suggest courses that will be especially helpful.

The seminaries of the department afford excellent opportunities to advanced students to carry on special investigations along economic, social or political lines. The seminary room in the new library building is well supplied with sets of periodicals and collections of works chosen with reference to the needs of students in these branches ; the White Library is especially rich in certain subjects treated ; the special collection of foreign statutes and the Moak Library of the Law Department are of great value for the study of many political questions, while new works are at times purchased to aid in special investigation.

Bracketed courses are not given in 1899–1900.

I. History.

Students intending to devote themselves especially to the study of History are advised to elect in their freshman year one or more of the courses numbered 4, 8, 21, and to devote as much as possible of the rest of their time to the study of language. Latin, French, and German will be found indispensable in much of their later work. In the sophomore year they are advised to elect course 13 and course 22; in the junior year, course 14 and course 23. Other courses in History should be elected as early as the student is in possession of the qualifications required.

A. Ancient and Mediæval History.

Consultation hours : Professor BURR, *M., W., F., 12:10–1:10. For Professors* BRISTOL *and* BENNETT, *see under* GREEK *and* LATIN. *For Professor* SCHMIDT, *see under* SEMITIC LANGUAGES.

[1a. **Ancient Greece.** Lectures and examinations. Fall term; to the end of the Persian wars. Winter term : to the march of Alexander. Spring term : to the absorption by Rome. Designed for those who have not passed an examination in Greek History at entrance to the university. W., F., 9. Professor BURR.]

1b. **Ancient Rome.** Lectures and examinations. Fall term : to the end of the Punic wars. Winter term : to the death of Nero. Spring term : to the loss of the West. Designed for those who have not passed an examination in Roman History at entrance to the university. W., F., 9. Professor BURR.

Courses 1a and 1b are given in alternate years.

[2a. **Greek Life.** Fall term : the land and the people. Winter term : home life and private antiquities. Spring term : 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 ————.]

2b. **Greek Literature.** Lectures. A summarizing history of the development of the literature in connection with the political and social history of the people. Fall term. T., Th., 10, *White 6*. Professor ————. This course is open to all students of the university except freshmen.

2c. **Political and Legal Antiquities of the Greeks.** Lectures. Theories of the state. Political mechanism. Courts and legal procedure. Winter term. T., Th., 10. *White* 6. Professor ————. This course is open to all students of the university except freshmen.

2d. **The Religion of the Greeks.** Lectures. The leading cults in their historical relations. Types of the gods. Faith and superstition. Priests and ritual. Spring term. T., Th., 10, *White 6*. Professor ————. This course is open to all students in the university except freshmen.

3. **Roman Antiquities.** Fall and winter terms : a systematic consideration of the constitution of the Roman family, status of women, marriage, children, education, slavery, the Roman house and its furniture, food, dress, baths, games and amusements, books, trade, travel, religion, death, burial, etc. Lectures copiously illustrated by lantern views, photographs and material in the Museum of Casts. Spring term : The Political and Legal Antiquities of the Romans. Lectures. W., F., 12, *Morrill 3*. Professor BENNETT.

See under Latin 10.

4a. **Europe during the Middle Ages** (300–1300 A.D.). Lectures and discussions. Open to all students. T., Th., S., 9, *Barnes Hall*. Professor BURR.

[4b. **The Renaissance and the Reformation** (1300–1600 A.D.). Lectures and discussions. Open to all students. T., Th., S., 9, *Barnes Hall*. Professor BURR.]

Courses 4a and 4b are given in alternate years.

5. Courses 5a, 5b, and 5c, while they have no necessary dependence

on each other and may be taken singly, are arranged to form a year of continuous seminary work in mediæval history. They are meant for any who have taken course 4a or 4b and wish preparation for research in this field. A reading knowledge of Latin is required.

5a. **Seminary in Mediæval History.** The reading of some mediæval chronicler, with a view to an acquaintance with mediæval life and a familiarity with mediæval Latin. For the year 1899–1900 the chronicler will be Rodulfus Glaber. Fall term. W., 4–6, *European Historical Seminary.* Professor BURR.

5b. **Palæography and Diplomatics** (the reading of historical manuscripts and the interpretation of historical documents, especially those of the Middle Ages). The course is one of actual study of the manuscripts and facsimiles in the University's possession. Winter term. W., 4–6, *European Historical Seminary.* Professor BURR.

5c. **Seminary in Mediæval History.** The critical study of some author, period, event, or phase of mediæval history. For the present year the topic will be : The Genevan Terror and the Earliest Champions of Tolerance. Spring term. W., 4–6. *European Historical Seminary.* Professor BURR.

7. **Introduction to the Study of History** : a seminary, open only to seniors and graduates and meant especially for training in historical method. *a.* History : its scope, its materials, its methods. *b.* The sciences auxiliary to history. *c.* Historical Geography. F., 4–6. *European Historical Seminary.* Professor BURR.

[8. **Oriental History.** Fall term. Susiana, Persia, Media, and Armenia. Winter term. Arabia and Ethiopia. Spring term. The Bagdad Caliphate. T., Th., 2, *White 6.* Professor SCHMIDT.]

8. **Oriental History.** Fall term. Syria and Asia Minor. Winter term. Carthage. Spring term. Assyria and Babylonia. T., Th., 2, *White 6.* Professor SCHMIDT.

See Semitic Languages, Course 8.

B. Modern European History.

13. **General History of England.** Lectures and examinations on text-book. M., W., F., 12, *Boardman Hall, Room A.* Designed especially for sophomores. Open to sophomores and juniors. Professor MORSE STEPHENS.

14. **General History of Europe from the Commencement of the 17th Century to the present time.** Lectures, essays, and examinations. M.. W., F., 11, *Library Lecture Room.* Designed especially for juniors. Open only to those who have had course 13. A reading knowledge of French or German is required. Professor MORSE STEPHENS.

[15. **History of the French Revolution, 1789–1799.** Lectures and essays. T., Th., 11. Open only to those who have had course 14. Professor MORSE STEPHENS.]

16. **History of the Napoleonic Era, 1799–1815.** Lectures and essays. T., Th., 11, *Morrill 3*. Open only to those who have had course 14. Professor MORSE STEPHENS.

Courses 15 and 16 are given in alternate years.

[17. **Constitutional History of England.** Lectures and examinations. Open only to those who have had course 13. T., Th., 12, *Boardman Hall, Room A*. Professor MORSE STEPHENS.]

18. **History of the British Empire.** Fall term, India. Winter term, The other Dependencies. Spring term, The Self-governing Colonies. Lectures and examinations. Open only to those who have had course 13. T., Th., 12, *Boardman Hall, Room A*. Professor MORSE STEPHENS.

Courses 17 and 18 are given in alternate years.

19. **Undergraduate Seminary.** For advanced study and research in the subjects connected with the history of Europe. The work of the fall term is designed to give a knowledge of materials and authorities; of the winter term is devoted to the examination of authorities and the study of the laws of historical evidence; and of the spring term deals with the conceptions of jurisprudence and their application to history. Open only to graduates and to seniors who are writing their theses in this department. M., 4–6, *European Historical Seminary Room*. Professor MORSE STEPHENS.

20. **Graduate Seminary.** Open only to graduates. Th., 4–6, *European Historical Seminary Room*. Professor MORSE STEPHENS.

Baccalaureate Theses. Seniors desiring to write theses in this department must have taken courses 13 and 14, and must have given satisfactory evidence in their term essays of their ability to do advanced work.

C. American History.

[*Consultation hours: Professor M. C. Tyler, Daily, 4, Morrill 11. Mr. Rammelkamp, T., Th., 11, Morrill 11.*

Students intending to take several courses in this department are advised to pursue them, as far as possible, in the order given below.]

21. **General History of the Commonwealth of New York, from its Settlement to the Present.** Lectures, topical reports, and examinations on text-book. T., Th., 10, *Morrill 11*. Open to all students. Mr. RAMMELKAMP.

22. **American History from the Earliest Discovery to the**

End of the War for Independence. Lectures, topical reports, and examinations on text-book. Open to all students. M., W,, F., 8. *Morrill 11.* Mr. RAMMELKAMP.

[23. **American History from the End of the War for Independence to the Year 1829.** Lectures, topical reports, and examinations on text-book. Open only to students after freshman year. M., W., F., 3, *Morrill 11.* Professor M. C. TYLER.

Open only to students who have already taken either course 13, 21, 22 or 24. This course is given every second year, alternating with course 24. It will not be given in 1899–1900.]

24. **American History from the Year 1829 to the Present, with especial reference to the political and military conflict over the Slavery Question.** Lectures, topical reports, and examinations on text-book. Open only to students who have taken either course 13, 21, 22, or 23. M., W., F., 3, *Morrill 11.* Professor M. C. TYLER.

[25. **American Constitutional History.** The criticism of constitutional documents, with special reports. Th., 3, *Morrill 11.* Professor M. C. TYLER.

Open only to graduates and to such undergraduates as have had either course 22, 23, or 24.]

26. **Junior Seminary.** Open to members of the sophomore and junior classes, who are also taking at least one other course in American History. W., 4, *Morrill 11.* Mr. RAMMELKAMP.

The object of this course is to organize and carry on scientific work in historical research, as a preparation for work in senior year on baccalaureate theses in American History.

27. **Senior Seminary.** Intended for seniors who have already taken course 27, and who are making their baccalaureate theses in American History. Th., 4, *Morrill 11.* Professor M. C. TYLER.

No senior will be accepted for thesis work in American History who does not do such work as a member of this seminary.

28. **American Historical Seminary.** Open only to graduates. T., 3–5. Professor M. C. TYLER.

II. Political Science.

[*Consultation hours for students as follows: Professor Jenks, M., W., 11. President White Library; Professor Hull, M., W., 12. Political Science Seminary; Professor Powers, M., W., 12. Political Science Seminary.*]

The general courses in Political Science are 34, 69.

Students who expect to elect several courses in the departmeut are

advised to take courses 51 and 34 in their sophomore year, and to elect French or German in their Freshman year.

a. Politics.

31. **Political Institutions.** *a.* Nature and historical development of political institutions. *b.* The government of the United States including local government, studied with especial reference to its practical working. *c.* Comparative study of the governments of Europe, especially those of England, France, Germany and Switzerland. M., T., W., 10, *Morrill 12.* Professor JENKS.

[32. **History of Political Ideas.** A critical study of leading writers on Politics. Lectures and reports. Alternates with course 33. Professor JENKS.]

33. **Modern Questions in International Politics.** Especial attention will be given to international questions arising through colonies, as well as to colonial administration. W., 12, *Morrill 12.* Professor JENKS.

34. **Introduction to Political Science.** Lectures regarding the nature of Politics, Social Science, Economics and Finance and their relations to cognate sciences. Spring term. M., W., F., 9. *Boardman, Room B.* Professors JENKS, HULL, POWERS.

35. **Municipal Government in Europe and the United States.** F., 11. *Morrill 12.* Mr. BROOKS.

b. Social Science and Statistics.

41. **Elementary Social Science.** An introductory course upon the nature and methods of social science and upon certain social problems, such as those connected with the family, with race and immigration, and with the dependent classes. Lectures and reports. T., Th., 9, *Morrill 11.* Acting Assistant Professor POWERS.

[42. **Advanced Social Science.** This course is open only to those who have taken the preceding or its equivalent. The subject is a study of the theories upon the evolution of the family and the changes now influencing the institution. Readings and reports. T., Th., 8, *Morrill 24.* Not given in 1899–1900.]

[43. **Anthropology.** An introduction to the methods and conclusions of anthropology and ethnology and their relations to the social scences. The work will be based upon Keane's "Ethnology" with collateral reading. T., Th., 8, *Morrill 24.* Not given in 1899–1900.]

45. **Advanced Social Science** (theoretical). This course is given in alternate years with course 58 and is open to those who have had either course 41 or related courses in philosophy. Its aim is to ex-

amine the theories, methods and results of the social sciences and especially of sociology. W., 4–6, *Morrill 12*. Acting Assistant Professor POWERS.

48. **Statistics.** A course in statistical methods and results, with practical work in investigation and tabulation. Especial attention is given to interpreting the statistics of prices and of international trade. Lectures. W., 9. Laboratory hours to be arranged after the class meets. Two hours credit. *Morrill 24*. Assistant Professor HULL.

c. Political Economy and Finance.

51. **Political Economy.** Elementary course. Principles of Political Economy. Designed especially for beginners in the department. Fall and winter terms. a. Lectures: The Relation of the State to Business. M., 9, *Library Hall*. Professor JENKS. b. Text book, Bullock's "Introduction to the Study of Economics," with class in six sections. T., Th., 8; T., Th., 9; W., F., 9; *Morrill 12*. Mr. WESTON. T., Th., 8; W., F., 9; *Morrill 11*. W., F., 8, *Morrill 3*. Mr. BROOKS.

Each member of the class is required to attend the lecture and will be assigned to one of the sections for text-book work. It is expected that students will elect with 51 either 34 or 62. Civil engineers are required to take 62. Other students will regularly elect 34.

52. **The Development of Economic Theories, chiefly in England, to 1848.** Reading, abstracts and lectures. Open to those who have passed in 51. T., Th., 11, *Morrill 11*. Acting Assistant Professor POWERS.

[53. **Advanced Economics.** Text-book, abstract and lectures. Open to those who have passed in course 51. T., Th., 11, *Morrill 11*. Assistant Professor HULL. This course alternates with course 52 and will not be given in 1899–1900.]

54. **Money, Credit and Banking.** An historical course, with especial reference to the monetary experience of the United States. M., W., F., 11, *Morrill 11*. Assistant Professor HULL.

55. **Modern Industrial Organization.** A study of the modern tendency toward industrial centralization and of socialistic theories regarding it. M., W., 11, *Morrill 12*. Acting Assistant Professor POWERS.

56. **Economic Legislation.** Study of current economic problems, especially from the standpoint of practical legislation. Comparative study of legislation in other states and countries, with preparation and discussion of legislative measures. In 1899–1900 legislation regarding monopolies,, taxation and labor will receive special attention. Open

to those who have passed in course 51 or its equivalent. M., W., 8, *Morrill 12*. Professor JENKS.

57. **The Economic History of England and the United States.** Text books, lectures, and collateral reading. No previous training in economics is required. M., W., 12, *Morrill 11*. Mr. WESTON.

[58. **Philosophy and Political Economy.** An historical survey of the relations between philosophical and economic speculation. Bonar's "Philosophy and Political Economy" will be used as a guide. Reports and discussions. W., 4–6, *Morrill 24*. Alternates with course 41. Professor ———.]

59. **Finance: Taxation, Financial Administration, Public Debts.** Text book, lectures and reports. Open to all who have passed in course 51. Th., F., 10, *Morrill 12*. Assistant Professor HULL.

60. **Economic and Commercial Geography.** Economic conditions and products; routes of trade and commercial relations between various countries. Text book, reports and lectures. Fall and winter terms. M., W., 10, *Morrill 11*. Assistant Professor HULL.

61. **Economic Readings in German.** This course is designed both to give facility in reading and to introduce members of the class to economic writings not as yet translated. Open to students who have passed in course 51 and who have a knowledge of German equivalent to courses 1 and 2 in that language. T., 10, *Morrill 24*. Assistant Professor HULL.

62. **Railroad Transportation.** Text book, lectures and reports. Spring term. M., W., F., 9, *Morrill 12*. Assistant Professor HULL.

69. **Graduate Seminary in Political Science.**. For graduates engaged in special investigations in Political Science. Questions in Politics, Social Science, Statistics, Economics, Finance, may be taken. Also some one subject will probably be investigated by the Seminary as a whole, and the fundamental principles of the various social sciences will be discussed. M., 4–6. *Political Science Seminary*. Professors JENKS, HULL, and POWERS.

Special Courses; Collateral Work in Other Departments.

1. **The Government of the State of New York.** Twelve lectures. These lectures will be given by the leading executive officers of the State of New York, each one explaining in a single lecture the work of his department and its significance as a part of the government. One hour credit for the fall term. Hours to be arranged, ordinarily Tuesdays, at 5 p. m. *Boardman A*.

2. **Banking and Investments.** A course of lectures explaining

the practical work of banks, including foreign exchange, gold exports and imports; the nature of investments in real estate, in city bonds, in railway bonds; the stock exchange and speculation. One hour credit for winter term. Joseph G. Cannon, Vice-president of the Fourth National Bank, New York City; Judge Meyer Isaacs, New York City; Mr. Louis Marshall, New York City, and others. Hours to be arranged, mostly on Tuesdays at 5 p. m. *Boardman A.*

3. **American Diplomacy.** Five lectures by Hon. John W. Foster, LL.D; five other lectures to be arranged. One hour credit for spring term.

4. **Synoptical Course in Forestry.**. Economic Nature and Political Aspects. (See Course 1 in Forestry). Fall term. Two hours. Professor FERNOW.

5. **Forestry History and Politics.** (See Course 11 in Forestry.) Winter term. Two hours. Assistant Professor GIFFORD.

6. **International Law.** Syllabus and lectures. Spring term. T., Th., 10, *Boardman, Room C.* Professor HUFFCUTT.

7. **History and Evolution of the Law.** Half-year. M., W., 10, *Boardman, Room C.* Dean FINCH.

8. **American Constitutional Law.** W., 9, *Boardman, Room C.* Professor POUND.

BIBLIOGRAPHY.

1. **Introductory survey of the historical development of the book,** illustrated by examples of manuscripts and incunabula: explanation of book sizes and notation; systems of classification and cataloguing; bibliographical aids in the use of the library. Winter and spring terms. Lectures. M., 11. Mr. HARRIS.

MATHEMATICS AND ASTRONOMY.

Pure Mathematics.

The work in mathematics prescribed for students in ENGINEERING and ARCHITECTURE, in general, takes one year. It presupposes a good knowledge of plane and solid geometry, of elementary and advanced algebra, and of plane and spherical trigonometry; and it consists of elementary courses in analytic geometry and the calculus.

For students in ARTS and SCIENCES 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 differ-

ential equations. These courses may all be taken by a good student, well qualified, during his freshman and sophomore years. They serve as a sufficient preparation for the ordinary work in physics and physical chemistry, and they mark the minimum of attainments that a teacher of mathematics in a high school or academy ought to possess.

The advanced courses are for juniors, seniors, and graduates. Together they would take one's entire time for four or five years; they give a general survey of the field of mathematical science, and serve as an introduction to any special field one might wish to cultivate.

The sequence and interdependence of these courses, and the order in which they may best be taken up, are shown in the detailed statement of the courses themselves. In their topical relations they fall into three groups which may be entitled:

1. The theory of discontinuous (discrete) operations.
2. The theory of continuous (differential) operations.
3. The theory of functions.

In the first group may be placed higher algebra, analytic and projective geometry, higher plane curves, the geometry of three dimensions including Plücker's line geometry; the theory of numbers, substitution groups, quantics including the modern algebraic theories of elimination, canonical forms and their invariants; quaternions and vector analysis; and non-Euclidian geometry.

In the second group are included the calculus, differential equations, differential geometry, finite differences, Fourier's series and spherical harmonics, and probabilities with applications to insurance and to the theory of errors.

In the third group are included the general theory of functions, with the special theories of elliptic, hyperelliptic, Abelian, and automorphic functions.

Astronomy and Celestial Mechanics.

The course in descriptive and physical astronomy considers the phenomena of the heavenly bodies and their probable conditions and histories. The work in celestial mechanics deals mainly with the figures of the planets, the tides, the elliptic motion, and perturbations.

Practical astronomy is taught by the College of Civil Engineering.

Mathematical Physics.

The subjects offered in this connection fall into two main groups.

In the first group are the calculus, differential equations, probabili-

ties and the theory of errors, vector analysis, and function-theory. These have already been mentioned under pure mathematics; but they are necessary, as introductions to most of the subjects in the second group, and they are important in themselves to the student of physics, much of whose work without their aid would be too purely empirical, no less than to the student of pure mathematics, whose outlook is enlarged by the physical concepts and interpretations involved. Most of the courses in this group are open to any good student who has had the elementary courses named above.

The second group consists of (1), two general introductory courses, one in theoretical mechanics with special reference to the dynamical principles needed for the subsequent work, and the other in Fourier's series and spherical harmonics, in which various typical physical problems are treated, the appropriate differential equations being derived from physical laws, and the most important solutions of these equations discussed; (2), the mathematical theories of definite branches of physics, such as sound, including the general vibrating system, with Rayleigh's treatise as the basis; hydrodynamics, including mechanics of the atmosphere and vortex-motion; electricity and magnetism; theories that have all been extensively developed by aid of the higher analysis.

Courses in light and thermodynamics are given by the Department of Physics, and courses in electricity and magnetism less mathematical in character than course 46.

The Mathematical Club, Essays, and the Library.

The Oliver Mathematical Club, composed of teachers and advanced students, has for its objects: the systematic presentation by the members, in turn, of some specified mathematical theory of recent development; and the hearing of reports from different members on noteworthy articles in current journals, and on the results of special reading and investigation. During the academic year 1899–1900 the club will meet every other week.

In addition to the courses of instruction definitely announced, special reading in pure and applied mathematics is assigned to advanced students desiring it; provision is made for the writing and criticism of mathematical essays, and students are encouraged to follow up special inquiries by aid of the University Library, which now contains several thousand volumes on pure mathematics, mathematical physics, and astronomy, including many of the principal mathematical journals, and transactions of scientific societies.

Mathematical Models.

The collection of models, about three hundred in number, includes:

1. Plaster models of the quadric and cubic surfaces, of several forms of the Kummer surface, of the cyclides, of surfaces of centers of quadrics, and of minimum surfaces.

2. Plaster models illustrating positive, negative, and parabolic curvature, and constant measure of curvature.

3. Plaster models illustrating the theory of functions: among them models of simply and multiply connected surfaces and of several forms of Riemann's surfaces, and models representing the real parts of algebraic, exponential, logarithmic, and elliptic functions.

4. Wooden and glass models of crystals and polyhedra.

5. Wire and thread models of twisted curves and ruled surfaces, and skeleton frames for minimum surfaces.

The following schedule of hours is made out as nearly as possible for the coming year; but necessary changes will be made at any time.

I. Elementary Courses Prescribed for Students in Engineering and Architecture, and open to Election by Students in Arts and Sciences.

2. For Freshmen in Engineering.

Ten sections, daily, ex. Sat.

At 8, *White 13*, Dr. MILLER; *White 17*, Dr. HUTCHINSON; *White 24*, Dr. MURRAY.

At 10, *White 22*, Professor WAIT; *White 18 A*, Assistant Professor TANNER; *White 24*, Dr. MURRAY.

At 11, *White 18*, Assistant Professor MCMAHON; *White 17*, Dr. HUTCHINSON; *White 21*, Dr. Snyder; *White 22*, Dr. MILLER.

(*a*) Fall term, Analytic Geometry.

(*b*) Winter term, Differential Calculus.

(*c*) Spring term, Integral Calculus.

3. For Freshmen in Architecture.

M., W., F., at 8, *White 22*, Professor WAIT.

(*a*) Fall term, Analytic Geometry.

(*b*) Winter term, Differential Calculus.

(*c*) Spring term, Integral Calculus.

4. For Freshmen in Engineering.

Daily ex. Sat., *White 18 A*, Assistant Professor TANNER.

(*b*) Winter term, Analytic Geometry.

(*c*) Spring term, Differential Calculus.

II. Elementary Courses open to Freshmen and Sophomores in Arts and Sciences.

6. For Freshmen who enter the University on the minor requirements in mathematics (plane geometry and elementary algebra). This course is substantially equivalent to the major entrance requirements in mathematics, and it is sufficient for elementary work in physics. Two sections, M., W., F., at 8, *White 21*, Professor JONES; *White 18 A*, Assistant Professor TANNER.

(*a*) Fall term, Solid Geometry.

(*b*) Winter term, Advanced Algebra.

(*c*) Spring term, Plane Trigonometry.

7. For Freshmen who enter on the major requirements (solid geometry, advanced algebra, and plane and spherical trigonometry). Supplementary to those requirements and necessary to further elective work in mathematics. T., Th , at 8, *White 21*, Professor JONES.

(*a*) Fall term, Solid Geometry.

(*b*) Winter term, Advanced Algebra.

(*c*) Spring term, Plane and Spherical Trigonometry.

8. For Freshmen who enter on the minor requirements. Equivalent to courses 6 and 7 combined. Daily, ex. Sat., at 9. *White 21*. Professor JONES.

(*a*) Fall term, Solid Geometry.

(*b*) Winter term, Advanced Algebra.

(*c*) Spring term, Plane and Spherical Trigonometry.

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. The problems in geometry occupy the fall term ; those in algebra the winter term ; and those in trigonometry the spring term. Two hours. Sat. 8–10. *White 21*. Professor JONES.

10. **Analytic Geometry and Calculus.** For sophomores who have had courses 7 or 8, but may be taken by freshmen who are well qualified, at the same time with course 7. M., W., F., at 8. *White 18*. Assistant Professor MCMAHON.

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 on this course. Murray's *Differential Equations* is used as a text book. Two hours. Dr. MURRAY.

III. Advanced Courses open to Juniors, Seniors, and Graduates.

For these courses, hours will be arranged to suit the members of the classes. In some cases the courses stated as necessary in a given course may be taken at the same time with it. A course may not be given if not more than two persons call for it.

12. **Higher Algebra and Trigonometry.** A continuation of courses 7 and 8. It covers continued fractions, limits and derivatives, imaginaries, series, theory of equations, applications of imaginaries and exponentials to circular and hyperbolic trigonometry, and determinants. Necessary for most of the courses that follow. T., Th., Sat., 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, 32, 33, and very useful in courses 15, 20, 41, 43, and in certain problems in mathematical drawing. T., Th., S., at 8. *White 18.* Dr. SNYDER.

(*a*) Fall and winter terms : Cremona's Elements of Projective Geometry. Two recitations a week and one lesson in drawing.

(*b*) Spring term : Quadric surfaces, cubic curves, and the relations between projective and metric geometry. Based on Reye, Durège, and Clebsch.

14. **Mathematical readings in German.** Vol. I of Weber's Algebra will be the first book used ; other books will be selected as they are needed. Requires courses 2 or 10, and 12. Two hours. Assistant Professor TANNER.

15. **Advanced work in Analytic Geometry.** Requires courses 2 or 10, 12, and preferably 13. Necessary in most of the courses that follow. Professor WAIT.

(*a*) Lines of the first and second orders, based on Salmon's Conic Sections. Three hours.

(*b*) Surfaces of the first and second orders based on Salmon's Analytic Geometry of Three Dimensions, and Aldis' Solid Geometry. Two hours.

17. **Advanced work in Calculus.** Requires courses 2 or 10, and 12. Necessary to all the courses that follow.

(*a*) Differential Calculus based on McMahon and Snyder's, and Todhunter's, Differential Calculus. Three hours. Professor WAIT.

(*b*) Integral Calculus. This course will be given by lectures accompanied by mimeograph notes, frequent illustrative problems being assigned to the class as exercises.

A short drill on the integration of various forms will be followed

by a full discussion of the conditions and criteria for integrability of any given function. Definite integrals, and methods for their evaluation. Various functions defined by definite integrals such as the gamma function and the logarithmic integral. Curvilinear and multiple integrals. Two hours. Dr. HUTCHINSON.

[18 **Theory of Groups of a Finite Order.** Begins with a study of the substitution groups that can be represented by a small number of elements. This is followed by a study of the abstract groups whose orders involve a small number of prime factors, the cyclical groups, the groups whose order is a power of a prime number, etc. The latter part of the course is devoted to applications, the Galois theory of equations receiving the most attention. Requires courses 12 and preferably 29. To be given in 1900–'01. Three hours. Dr. MILLER.]

19. **General Theory of Algebraic Curves and Surfaces.** Requires courses 12, 13, 15, and 17. Necessary to courses 25, 32, 33, and preferably to all the courses that follow.

(*a*) **Algebraic Curves.** Based on Clebsch and Salmon. The principal subjects treated will be : systems of coördinates ; conditions which determine a curve ; Plücker's numbers ; symbolic notation ; poles and polars ; singularities ; the forms of curves of the third and fourth order. Two hours. Dr. SNYDER.

[(*b*) Surfaces and Twisted Curves. Winter and spring terms. Three hours.]

20. **Algebraic Invariants.** Requires courses 12, 15, and 17; courses 11, 13, 14, and 18 are also desirable. This course is given chiefly by lectures. The general linear transformation is applied, first to a single binary quantic, and later to a system of simultaneous quantics in n variables ; and the necessary and sufficient conditions for invariants, covariants, etc., are investigated. Simultaneous invariants are shown to include covariants as a special case, and such invariants are represented as functions of the coefficients, of the roots, and also in the symbolic notation. Hilbert's proof of Gordan's theorem on the finiteness of the number of irreducible invariants is given, both for the binary quantics, and also for any number of quantics in n variables. Much of Elliott's Algebra of Quantics is read by the class in connection with the lectures, and some attention is paid to the geometric side of the subject. Two hours. Assistant Professor TANNER.

21. **Differential Equations.** A course devoted (*a*) to the integration of special equations not discussed in course 11 ; and (*b*) to the general theory of linear differential equations.

Part (*a*) requires course 11 as a prerequisite; and part (*b*), an elementary knowledge of the theory of functions of a complex vari-

able. The latter part of the course is based upon the works of Craig, Jordan, Picard, and Schlesinger. Necessary to all the courses that follow: and particularly useful in mathematical physics. Three hours. Dr. MURRAY.

22. **Finite Differences.** This course treats of factorials, interpolation formulas, summation of series and difference equations, with practical applications. The course is based on the treatises of Boole and Markoff on finite differences. An elementary knowledge of the differential and integral calculus is a prerequisite for this course. Requires course 21. Two hours. Dr. MURRAY.

23. **Theory of Groups of an Infinite Order.** Begins with the study of the linear substitution groups, the congruence groups, etc. This is followed by a study of the theory of Lie's continuous groups and their application to the theory of differential equations. Requires courses 11, 17, and preferably 18 and 29. Three hours. Dr. MILLER.

25. **Theory of Functions.** Requires courses 12, 17, 19, 21, and preferably 23. Useful in all the courses that follow.

(*a*) First year. General Function-theory. Based on Forsyth's Theory of Functions. Three hours. Dr. SNYDER.

(*b*) Second year. *Theta and Abelian Functions.* Theta functions of p variables with rational characteristics will be studied in detail with reference to their classification and the relations existing among them, special attention being given to functions of two and three variables with half integer characteristics. Classification and properties of abelian integrals, and the application of the theta functions to the solution of the inversion problem. Double abelian integrals. Applications to geometry, particularly to hyperelliptic surfaces and the generalized Kummer surface. Three hours. Dr. HUTCHINSON.

29. **Theory of Numbers.** Includes theory of congruences, quadratic residues, quadratic forms and cyclotomic numbers. Based on the works of Bachman, Dirichlet, and Dedekind. Requires course 12, and preferably 17, 20. Two hours. Dr. MILLER.

30. **Quaternions and Vector Analysis.** Requires courses 12, 17, and something of mechanics. Two hours. Assistant Professor MCMAHON.

31. **Theory of Probabilities and Least Squares;** with some applications to insurance and the theory of errors. Requires course 2 or 10. Two hours. Professor JONES.

[32. **Non-Euclidian Geometry.** Requires courses 12, 13, 15, 17, 19, 25(*a*). Two hours.]

33. **Line Geometry.** Requires courses 13, 15, 17, 20, 21. Two hours. Dr. SNYDER.

(*a*) Fall term. Line coördinates, systems of linear complexes, and cubic scrolls.

(*b*) Winter term. Infinitesimal geometry, normal correlation, surfaces of singularities, focal surfaces, asymptotic lines, developable surfaces.

(*c*) Spring term. Transformation of coördinates, Klein's fundamental complexes, the quadratic complex, and the Kummer surface.

The subject will be presented both synthetically and analytically, by lectures and mimeograph notes.

[36. **Introduction to Mathematical Chemistry.** Open to students of physical chemistry who have completed a course in calculus.

(*a*) Fall term. The Theory of Surfaces, as applied in geometric representations of the thermodynamic properties of bodies;

(*b*) Winter term. Spherical Harmonics, as applied in the theory of diffusion;

(*c*) Spring term. The Principles of Least and Varying Action, as applied to reversible scalar phenomena, *i. e.*, to the problems of chemical and electro-chemical equilibria.]

Astronomy and Mathematical Physics.

40. **Descriptive and Theoretical Astronomy.** Dr. MURRAY.

(*a*) Descriptive Astronomy. Two hours.

(*b*) Physical and Mathematical Astronomy. Requires courses 2 or 10, and courses 1 or 2 of Physics. Two hours.

41. **Theoretical Mechanics.** Includes kinematics, statics, and kinetics with special reference to the dynamical principles needed for subsequent work. Requires courses 11 (or preferably 21), 12, 15, 17. Necessary to all the courses that follow. Two hours. Assistant Professor MCMAHON.

42. **Potential Function, Fourier's Series, and Spherical Harmonics** with applications to physical problems. Introductory to mathematical physics. Requires courses 17, 21. 41. Necessary to all the courses that follow. Two hours. Assistant Professor MCMAHON.

[43. **Celestial Mechanics.** Requires courses 12, 17, 21, 40, 41, and preferably 42. Two hours.]

44. **Mathematical Theory of Sound;** including the general theory of vibrating systems. Based on Rayleigh's treatise. Requires courses 12, 17, 21, 41, 42, and preferably 15, 20, 25(*a*). Two hours. Assistant Professor MCMAHON.

(*a*) First year. General theory with applications to strings, bars, membranes, and plates.

(*b*) Second year. Aërial 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.

Other courses in Mathematical Physics are given by the Department of Physics.

PHYSICS.

Lecture Courses in Elementary Physics.—The instruction in the elements of physics is by means of lectures given twice a week throughout the year. In these lectures the general laws of mechanics and heat, electricity and magnetism, and acoustics and optics, are presented. The very large collection of lecture room apparatus possessed by the department 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.

Three courses are given, which consist respectively of two, four, and five exercises a week. The ground covered in these courses is essentially the same, but the methods of treatment differ, being adapted in each case to the needs and previous training of the class of students for which the course is designed. The successful completion of the freshman mathematics is in all cases requisite for admission to these courses.

Courses of Laboratory Instruction.—The first year of laboratory work is devoted to the experimental verification of physical formulæ, to practice in the use of instruments of precision and to the attainment of some knowledge of the simpler methods of physical manipulation. Students who have completed the first year's work make a more extended study of various physical constants. They learn the use of standard instruments, and become acquainted with the methods employed in research. For students of engineering complete courses in photometry, in the calibration of instruments and in the study and testing of direct, alternating and polyphase current machinery are arranged. The opportunities afforded for advanced work in electricity are unusual.

Every encouragement is offered to advanced students for the carrying on of original investigations, and every opportunity is taken to stimulate a spirit of scientific inquiry. Courses of reading are suggested to such students, in connection with their experimental work;

and they are brought together in seminary at frequent intervals for the discussion of topics of scientific interest. Several courses in mathematical physics are given for the benefit of such students. It is the aim of the department to furnish every possible facility for research.

The Laboratory of Physics.—Franklin Hall is devoted exclusively to the use of the department of Physics. It is of red sandstone, and is three stories in height above a well-lighted basement. The building contains, in addition to the amply equipped laboratories of the department, a lecture room, seating about two hundred students, and four recitation rooms for the use of classes. Piers are provided in several of the rooms for apparatus requiring immovable support, and some of the rooms in the basement and in the annex have solid floors of cement, upon any part of which galvanometers, etc., may be used. The arrangements for experimental work are most complete. Gas, water, steam, oxygen, hydrogen, compressed air, blast and vacuum cocks are within easy reach, and dynamo and battery currents are available. A masonry pier, four by twelve feet, permits the use in the lecture room of apparatus that could otherwise only be used in the laboratory. A small turbine on the lecture-table furnishes power for a variety of experiments. Lanterns with the lime or electric light are always in readiness for use when they can in any way aid a demonstration. Adjacent to the lecture-room are three large apparatus rooms.

The laboratory rooms in the lower portions of the main building are devoted to advanced work, those on the upper floors of the west end to elementary practice. On the fourth floor is a suite of rooms arranged for the study of photography, with special reference to its application to physical investigation. Work in applied electricity is carried on chiefly in the basement laboratories, in the annex, and in the dynamo rooms of the department.

The equipment of the Department of Physics comprises many fine instruments of precision. Among the latter is the large tangent galvanometer, constructed at the University, with coils, respectively one and six-tenths and two meters in diameter, and giving deflections to ten seconds. 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*.

The following courses are offered in 1899–1900:

Undergraduate Courses.

1. **Mechanics and heat.** Electricity and Magnetism. Acoustics and Optics. Four hours a week. [Two lectures a week. M. W., or T. Th., 12. Professor NICHOLS and Assistant Professor MERRITT. Two recitations by the class in sections, at hours to be arranged.] Messrs. HOTCHKISS, SHEARER, STEWART, ———, and ———.

Course 1 is intended to meet the needs of students in Civil Engineering, Electrical Engineering, Mechanical Engineering, and of such others as have the requisite mathematical preparation. An elementary knowledge of the calculus is required.

2a. **Short elective course in Experimental Physics.** Two hours, lectures. M., W., or T., Th., at 12. Professor NICHOLS and Assistant Professor MERRITT.

Course 2a is offered for the benefit of students who do not intend to pursue the subject further nor to devote especial attention to the sciences of Mathematics, Chemistry or Geology, but who desire to acquire some knowledge of the simpler phenomena of Physics. It is accepted as the required work in the course in Agriculture and in the course in Medicine, but students in those courses are urged, whenever practicable, to substitute course 2b. Course 2a is not open to freshmen, excepting in those cases where advanced mathematics has been presented for entrance to the University.

The completion of this course does not qualify the student to enter course 3 or any subsequent course in Physics.

2b. **Longer courses in Experimental Physics.** Two lectures a week, M., W., or T., Th., 12. Professor NICHOLS and Assistant Professor MERRITT ; two recitations a week and one afternoon in the laboratory, Mr. ROGERS. Course 2b is intended for students selecting physics and who desire to gain an adequate knowledge of the elements of the subject. It should be chosen in preference to course 2a by all who wish to prepare for any of the more advanced courses in Physics or who intend to study Mathematics, Chemistry, Geology or the Biological Sciences. The lectures are the same as in course 1. Students of whom course 1 is required may substitute course 2b by registering for 5 hours. A knowledge of plane trigonometry is required. Freshmen who have presented Advanced Mathematics for entrance may elect this course.

3. **Physical Experiments.** Theory and methods of physical measurements. Two to six hours. The laboratory will be open M., W., Th., F., 2 to 5; T., 9 to 5 and S., 9 to 1. Messrs. O. M. STEWART, BLAKER, G. W. STEWART and ———.

Course 3 includes laboratory experiments illustrating general laws

in all branches of Physics, and instruction in the adjustment and use of the instruments of precision employed in mechanics, heat, light and electricity. It is open to students who have passed satisfactorily in courses 1 or 2b. All students desiring this course are strongly advised to prepare themselves by first taking courses in analytical geometry and calculus. Each student usually devotes to the course two afternoons each week, and pursues it in such order as the appointments of the laboratory may require. Students in Mechanical Engineering and Electrical Engineering are required to take the equivalent of two hours a week only.

4. **Electrical Measurements.** Tests of electrical instruments and determination of constants. Theory and experimental study of dynamo machines, including tests of efficiency. Alternating and polyphase currents. [For special work in alternating current testing, see course 24.] Photometric and electrical tests of electric lamps. Four hours, laboratory work. Daily. Assistant Professors MOLER and BEDELL, and Messrs. HOTCHKISS and BLAKESLEE.

Course 4 is open to all students who have completed course 3 and two terms (including winter term) of course 1. Taken together with course 8, it forms a part of the prescribed work of the senior year in Electrical Engineering.

5. **A shorter course in Heat and Applied Electricity** for students in Mechanical Engineering. Two hours, laboratory work, daily. Assistant Professor MOLER and Mr. ———.

Students taking course 5 are advised to attend the lectures announced under course 8.

6. **Advanced laboraory practice** in general Physics for undergraduates who have completed course 3. This course is preparatory to graduate course 18. It is intended to meet the wants of those who expect to teach experimental physics, and may occupy from three to six hours per week. Professor NICHOLS, Assistant Professor MERRITT and Mr. SHEARER.

Students in course 6 are expected to devote at least a term to a single problem, studying the literature of the subject exhaustively and performing the experimental work with all the care and thoroughness of an original research.

8. **Theory of the Galvanometer.** Fall. Application of photometry to electric lighting. Winter. Theory of the telephone. Spring. Professor NICHOLS. One hour, lectures, F., 12.

9. **Practical Photography.** Two hours. One lecture a week with laboratory practice, during the spring term. Assistant Professor MOLER and Messrs. HOTCHKISS and ———.

Course 9 is open only to students who have the requisite knowledge of chemistry and physics. The requisite knowledge of these subjects is in general that possessed by those who have completed Chemistry Course 1 and two terms of Physics, 1, 2a or 2b. Freshmen are therefore not eligible to elect this course.

Courses for Graduate Students.

10. **Thermodynamics** (based upon Clausius). Two hours. Mr. ROGERS.

11a. **Theoretical Physics.** Mechanics and Thermodynamics. Assistant Professor MERRITT. Three hours lectures and one hour seminary throughout the year. [1899–1900.]

11b. **Theoretical Physics.** Electricity and Magnetism. Assistant Professor MERRITT. Three hours lectures and one hour seminary throughout the year. [1900–1901.]

Courses 11a and 11b, together with course 14, are intended to give an outline of theoretical physics for students who expect to specialize in this subject.

12. **Recent advances in Experimental Physics.** Professor MERRITT. One lecture a week. F., 9 or 10. This course will be devoted to such of the more important developments in physics as have not yet found their way into the text books. The lectures will be illustrated by experiments whenever the nature of the subject permits.

13. **Electricity and Magnetism.** Assistant Professor MERRITT. Lectures and seminary. For advanced students who have completed courses 11b or its equivalent. This course is capable of modification to suit the needs of those electing it. Some treatise such as Boltzman, Maxwell, or J. J. Thomson will be used as a basis.

14. **Theory of Light.** Four hours. Mr. SHEARER. Three recitations per week based on Preston's Theory of Light. One experimental lecture per week by members of the class under the direction of the instructor.

15. **Wave Motion.** Two hours. Lecture on the theory of wave motion in optics, electricity, etc., with problems suited to the requirements of the class. Mr. SHEARER.

16. **Advanced Photography,** with especial reference to its application to research. Two hours. Fall and winter. Assistant Professor MOLER.

Students who have completed courses 1 or 2, 3 and 9, or an equivalent, will be admitted to this class.

17. **Physical Seminary.** Two hours. Critical reading of original memoirs relating to physics; followed in the spring term by

reports upon original work done in the department. Tuesday evenings, 7:30 to 9:00. PROFESSOR NICHOLS.

Course 17 is a colloquium in which all members of the teaching staff of the department, as well as graduate students of physics, take an active part.

18. **Advanced laboratory practice in general physics** preparatory to research. This course is open to undergraduates who have completed courses 3 and 6 or 3 and 4; also to graduates who have had the above courses or their equivalent. The amount of time to be given and hours of attendance will be arranged to suit each individual case. Professor NICHOLS, Assistant Professors MERRITT, and BEDELL and Mr. SHEARER.

21. **Magnetism of Iron.** Spring term only. One hour. Assistant Professor BEDELL.

This course may be taken by Juniors or Seniors; it is recommended to Juniors as preparatory to Senior work in electrical design, the theory of alternating currents, and laboratory courses in transformer testing and the transmission and transformation of polyphase currents.

22. **Theory of Alternating Currents;** inductive circuits, condensers and transformers. Fall and winter terms. Two hours. Assistant Professor BEDELL.

This course will deal with the elements of the subject, special attention being given to graphical methods.

23. **Magnetism and Electricity.** Winter and spring terms. Two hours. Special reading and seminary work for those taking course 22. Assistant Professor BEDELL.

24. **Alternating Current Measurement:** testing of transformers, rotaries, and induction motors for single phase, two phase, and three phase circuits, and the transmission and transformation of polyphase currents. Course 24 is to be taken by students with experimental theses upon the above subjects. Two hours throughout the year. M., 2–5. (Requires course 22). Assistant Professor BEDELL.

By permission, course 24 may be substituted for equivalent hours in course 4.

25. **Theory of Dynamo and Motor,** and allied topics of interest to electro-technical students. Two hours. Fall and winter. Mr. ———.

CHEMISTRY.

Inorganic Chemistry. The elements of inorganic chemistry are taught by recitations from the text-book, and by lectures and laboratory work. Careful attention is required to the writing of chemical equations, and the solution of chemical problems. In the laboratory,

experiments illustrating the principles discussed in the text-books are performed by each student.

Advanced courses of lectures, both with and without laboratory practice, are given for students intending to specialize in chemistry, but are open to all who have completed certain earlier chemical courses. In these lectures prominence is given to the history of chemistry and to the study of the elements on the basis of their classification according to the periodic law. For the special student ample opportunity is afforded for advanced study, and research in inorganic chemistry.

Organic Chemistry. The general subject of organic chemistry is taught by a course of lectures, recitations, and laboratory work, extending through one year. The theoretical basis of the study is made as thorough as possible, while the full illustration of the lectures by specimens, and constant laboratory practice in the preparation and purification of typical compounds, prevent the study from becoming an abstract exercise of memory. On the completion of the first year, the subject of organic chemistry is continued by courses of lectures on special chapters of the subject, and by further laboratory work in the preparation of specimens for the museum, and in following out reactions of particular interest, in the course of which constant reference is made to papers published in the leading American, French, and German periodicals. As soon as the necessary proficiency in manipulation and theoretical knowledge is attained, the student is given every encouragement to devote himself to original investigation, for which organic chemistry offers a promising field.

Physical Chemistry. One group of the courses of lectures in physical chemistry aims to present an ordered account of the experimental facts of this branch of physical science; while the aim of the other is to teach the mathematical theory of the subject. These two groups stand to each other in about the same relation as that which obtains between experimental physics and mathematical physics.

The topics considered in the first group, the experimental courses, are arranged in a progressive order. One course, that on the Phase Rule, deals with the classification of chemical equilibria, and the application to them of the general laws known as the Gibbsian Phase Rule and the Theorem of Le Chatelier. Another, that on the Law of Mass Action develops the quantitative side of the subject by application of the Mass Law and the Theorem of van't Hoff. Further courses are devoted to special topics, in particular to the important and rapidly growing one of electro-chemistry.

The second group of courses, those on mathematical theory, are in-

troduced by a general account of the thermodynamic theory of chemical equilibria and the analytic treatment of the time-rates of chemical change. This introductory course is followed by one of more advanced character, in which the historical development of mathematical chemistry is outlined, and acquaintance is made with the original literature of the subject.

Both groups of courses are supplemented by laboratory training in methods and manipulation, while every opportunity and encouragement for original research is offered in laboratories especially equipped for this purpose.

Agricultural Chemistry. A course of lectures on this subject, extending through the year, treats of the chemistry of the plant and its growth, of the atmosphere, soil, fertilizers, the feeding of farm crops and animals, and the composition and utilization of the products of the farm. An advanced course, partaking also in part of the nature of a seminary, is offered on current topics in the journals, and also a very elementary series of lectures for the winter course students.

Seminaries. All advanced students specially interested in any of these branches of the science meet with the various professors, at stated times, for the discussion of special topics suggested by recent chemical literature or otherwise.

Qualitative and Quantitative Analysis. Two beginning courses are given in chemical analysis, each extending through one year, one of which is required of students in mechanical and electrical engineering and occupies three University hours per week ; the other, required of all students specializing in chemistry and of other students in science electing this work, occupies six University hours per week. The quantitative work is taken up after the completion of the qualitative course, and comprises a small number of simple gravimetric, volumetric, and electrolytic determinations, together with the study of the chemistry of the operations involved.

This work in the laboratory is supplemented by lectures and recitations, the latter including practice in writing chemical equations explanatory of the actual operations of the analytical work. Beyond this the work of each student is adapted to the particular purpose for which it is taken, thorough practice in their respective fields being offered to students of agricultural, engineering, medical, and sanitary chemistry.

Advanced Quantitative Analysis. For students intending to devote themselves chiefly to the study of chemistry there is provided an extended course in quantitative analysis, especially designed to give them as wide an acquaintance as possible with analytical manipu-

lation. This work comprises the determination of the more important elements; the analysis of ores, minerals, and alloys; the detection and determination of poisons; analysis by electrolysis; gas analysis; and practice in the use of the polariscope, spectroscope, and refractometer. To these students occasional lectures may be given on the recent literature of chemical analysis.

Assaying. To students who have studied quantitative analysis there is offered a short course in assaying, in which practice is given in the sampling and assay of ores of lead, silver, and gold, and in the assay of gold and silver bullion. A special laboratory is provided for this work, and is fully equipped with all necessary furnaces and tools.

The chemical building, named Morse Hall, consists of two structures connected by corridors on each floor. It contains four lecture rooms, one seating three hundred and fifty students, another eighty, and each of the other two, sixty-two students. They are furnished with all the necessary appliances for the illustration of the lectures by experiments and the lantern. In addition to these rooms, with their adjacent apparatus and preparation rooms, there are three large student laboratories for the elementary work in general chemistry and in qualitative and quantitative analysis, ten private laboratories for professors and instructors, a room for the chemical library, a large museum room and four balance rooms.

There are also a number of rooms for special kinds of analytical work; one is for spectroscopy, including a dark room for photography; three rooms are devoted to assaying, two with northern exposure to gas analysis, one to organic ultimate analysis by combustion, one to the distillation in the analysis of water and of foods, two to bacteriological work in connection with the analysis of water and foods, one to microchemical analysis, and one to physiological and toxicological practice and analysis.

For other lines of laboratory work not purely analytical there are three rooms for the organic chemistry, for advanced inorganic chemistry one large room for work with electric furnaces, another one for general research, and two smaller ones for graduate work; for physical chemistry there is a large room for general elementary work, one for electrochemistry, one for undergraduate research, and one for graduate work.

In addition to the rooms already mentioned there is a fire-proof room for work which might endanger the building if done in a room not thus protected, a room with strong ventilation for work that evolves offensive or unwholesome gases, a general supply room from which all the students draw their apparatus and chemicals, and the

laboratory of the University Experiment Station. In the sub-basement there are a large constant temperature room, dynamo rooms, the ore crusher room, a large stock room, etc.

Distilled water is conducted in block tin pipe to all the more important rooms on each floor, from a tin-lined tank in the uppermost story where the distilling apparatus is placed. Every student's place is furnished with all the essential apparatus for his general work and with water and gas, and with suction in the quantitative and organic laboratories; oxygen, hydrogen, and air-blast are supplied wherever required, from reservoirs in the basement. The oxygen and hydrogen are made by the electrolytic decomposition of water by means of a dynamo current, the gases being collected in tanks of about fifty cubic feet capacity, and thence piped to the various rooms of the building.

The museum contains collections for the illustration of lectures upon general, organic and applied chemistry. These collections include specimens of the elements, their compounds, and the ores from which they are obtained, a full series of typical organic compounds, and also specimens illustrating the leading chemical industries, such as the manufacture of the various acids, alkalies and salts, pigments, glass, pottery, soap and stearine, and the chemical processes of bleaching, and 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 8:30 to 1, and 2:30 to 5:30.

Forty-eight courses in chemistry are offered, as below.

Bracketed courses are not given in 1899–1900.

General Chemistry.

1. **General Inorganic Chemistry, elementary,** as follows, all the subdivisions of the work being required.

a. Lecture. Two sections. T., Th., 12, *Ch. L. R. 1.* Professor CALDWELL, and Mr. G. A. SMITH.

b. Recitation. In sections, as assigned. Assistant Professor TREVOR, Dr. CARVETH, and Dr. TAYLOR and Mr. EBERSOLE.

c. Laboratory practice. One hour (two and one-half hours actual

practice), in sections, as assigned. Assistant Professor TREVOR, Dr. CARVETH, and Dr. TAYLOR and Mr. EBERSOLE.

2. **General Inorganic Chemistry.** Six hours. Fall term. This course is designed to give in one term the equivalent of course 1. All students intending to specialize in chemistry are advised to take it in their first year. Required of freshmen in medicine. (*a*) Lectures, M., W., 12, *Ch. L. R. 4*; (*b*) Recitations, two hours, as assigned; Assistant Professor TREVOR. (*c*) Laboratory Practice, T., Th., 2–4:30; Assistant Professor TREVOR, Dr. CARVETH, and Dr. TAYLOR and Mr. EBERSOLE.

Analytical Chemistry.

3. **Qualitative Analysis.** Elementary Course. Three hours. Fall and winter. Required of students in the mechanical and electrical engineering courses. Associate Professor DENNIS, Dr. WHITTLESEY and Messrs. CURTIS and E. S. SMITH.

Lectures and recitations, in sections, by appointment. Laboratory work in sections as arranged for Sibley College Sophomores. Dr. WHITTLESEY.

Course 3 is open only to those who have taken course 1 or 2.

4. **Quantitative Analysis.** Elementary Course. Three hours. Spring. Associate Professor DENNIS, Messrs. CUSHMAN, CURTIS, and E. S. SMITH.

Lectures and recitations, in sections, by appointment. Mr. CUSHMAN.

Course 4 must be preceded by course 3, and is required of students in the courses mentioned above.

5. **Qualitative Analysis.** Six hours. Winter and spring. (Three hours, winter, for freshmen in medicine.) Students in science are advised, and those specializing in chemistry are required, to take this course, instead of the qualitative analysis of course 3. Associate Professor DENNIS, Dr. WHITTLESEY, and Messrs. CURTIS and E. S. SMITH.

Recitations. Winter and spring. T., 2, F., 2:30. Lecture. S., 10, *Ch. L. R. 2*. Dr. WHITTLESEY.

This course is open only to those who have had course 1 or 2.

6. **Quantitative Analysis, elementary**, for those who have had course 5. Six hours. Fall. Associate Professor DENNIS, Messrs. CUSHMAN, CURTIS and E. S. SMITH.

Lectures and recitations. Spring. T., 2, S., 10, *Ch. L. R. 2*. Mr. CUSHMAN.

7. **Quantitative Analysis, advanced courses.** Open only to those who have had courses in qualitative and elementary quantitative

analysis. Unless otherwise specified no student will be allowed to register for less than three hours in any of the following analytical courses. Professor CALDWELL, Associate Professor DENNIS, Dr. CHAMOT and Mr. CUSHMAN.

a. General inorganic, and ultimate organic analysis.

b. Agricultural qualitative and quantitative analysis. This course is for students specializing in agriculture. Its object is to familiarize them with the chemical properties of plants, soils, fertilizers and the products of the farm, and also to prepare them for thesis work if they wish to continue the study through the senior year. The course should, therefore, be taken in the third year. It will be open only to those who have taken courses 1 or 2 and 16. Professor CALDWELL and Mr. G. A. SMITH.

c. Food analysis. Laboratory work. Fall. Practice in the usual methods employed in the chemical analysis of foods and beverages for the purpose of determining their nutritive values or purity. Dr. CHAMOT.

d. Water Analysis, Sanitary and Technical. Laboratory work. Winter. Instruction in the methods for the examination of waters with reference to their potability, fitness for steam boilers, special industries, etc. Dr. CHAMOT.

e. Technical and engineering analysis.

8. **Assaying.** Three hours. Winter. One lecture and two hours of laboratory work. Mr. CUSHMAN.

9. **Qualitative and Quantitative Gas Analysis.** Lectures. Fall. T., Th., 12, *Ch. L. R. 3*. Associate Professor DENNIS.

10. **Technical Gas Analysis.** Laboratory work. Three hours, by appointment. Fall. Associate Professor DENNIS and Mr. RICHMOND.

Instruction is given in the analysis of gas mixtures with the apparatus of Honigmann, Bunte, Orsat, Elliott and Hempel, the complete analysis of illuminating gas, generator gas and air, the determination of the specific gravity of gases, the evaluation of nitrates with the nitrometers of Hempel, Lunge and Bodländer and the qualitative analysis of gas mixtures.

Courses 9 and 10 are open only to those who have had or are taking elementary quantitative analysis.

12. **Spectroscopic Chemical Analysis and Colorimetry.**

(*a*) Lectures. Spring. T., 12, *Ch. L. R. 3*. Associate Professor DENNIS.

(*b*) Laboratory work. Two hours, by appointment. Associate Professor DENNIS and Mr. RICHMOND.

The laboratory instruction comprises the observation and mapping

of "flame" 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.

13a. **Toxicology.** Laboratory work. Spring. Instruction in the methods for isolating and identifying poisons, etc.; practice in the separation and quantitative determination of poisonous substances in the presence of organic matter. Assay of common drugs and medicines. Open only to those who have had course 4 or 6. Dr. CHAMOT.

13b. **Toxicology.** Laboratory work. Fall. Two hours. Required of students in the Medical College.

14. **Microchemical Analysis.** Lectures and laboratory work. Three hours, to be arranged. Instruction in the use of the microscope and its accessories in qualitative analysis. Practice is given in the analysis of minute amounts of material, in the identification of substances for which no other reliable tests exist, and in the examination of alloys. Fall term, inorganic substances. Winter term, organic substances. Spring term, foods, etc. Dr. CHAMOT.

This course is open to those who have had course 4 or 6.

Agricultural Chemistry.

15. **Agricultural Chemistry.** Elementary course, for students in the special short course in Agriculture. Winter. Hours to be arranged. Professor CALDWELL and Mr. G. A. SMITH.

16. **Agricultural Chemistry.** General course. T., Th., F., S., fall and winter; T., Th., S., spring, 9. *Ch. L. R. 2.* The general subjects treated in this course are the composition of plants, the chemistry of their growth, the sources of the supply of the food of the plants, the chemical and physical properties of soils, the composition and the mode of action of fertilizers, and the chemistry of the products of the farm. Professor CALDWELL and Mr. G. A. SMITH.

17. **Agricultural Chemistry.** Readings from journals. For those who have completed course 16. One hour per week, by appointment. *Ch. L. R. 2.* Professor CALDWELL.

Organic Chemistry.

20. **Organic Chemistry.** Lectures and recitations. M., W., F., 9, *Ch. L. R. 1.*

21. **Organic Chemistry.** Laboratory work. Three hours.

Courses 20 and 21 are required of all students specializing in chemistry; but course 20 may be taken separately by others, by special permission granted in each case. These courses are open only to those who have had courses 1, 3, and 4, or 2, 5, and 6.

The lectures and recitations serve as an introduction to the general subject of the chemistry of the compounds of carbon. In the laboratory the student prepares a large number of typical compounds of carbon, and familiarizes himself with their properties and reactions. Assistant Professor ORNDORFF and Mr. TEEPLE.

21a. **Elementary Organic Chemistry.** Lectures and recitations. Fall term. M., W., F., 12. This course is intended only for medical and veterinary students, and is preparatory to course 45. Assistant Professor ORNDORFF.

22. **Special Chapters in Organic Chemistry.** Lectures. T., Th., 9, *Ch. L. R. 1.* This course is open only to those who have completed courses 20 and 21. In this course especial attention is given to certain important chapters of organic chemistry, for which an elementary knowledge of the subject is necessary. Frequent references are made to the original literature, and an attempt is made to acquaint the student with the classical researches of organic chemistry. Assistant Professor ORNDORFF.

23. **Advanced Organic Chemistry.** Laboratory work. The course in the preparation of organic compounds is here continued. These preparations being more difficult require more experience and skill on the part of the student. The original literature is consulted, and the student is finally required to repeat some extended and important piece of work and to compare his results with those published, before taking up original work in this field. Assistant Professor ORNDORFF.

24a. **The Coal Tar Dyestuffs.** Lectures. Fall and Winter. S., 12, *Ch. L. R. 1.*

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 relations to each other are discussed, the treatment being scientific, rather than technical. Assistant Professor ORNDORFF.

24b. **Stereochemistry.** Lectures. Spring. S., 12., *Ch. L. R. 1.*

The stereochemistry of the compounds of carbon and nitrogen form the subject of this course of lectures. The necessity for considering the space relations of the atoms in certain classes of physical isomers is shown and the close agreement of the facts and theory is brought out. Assistant Professor ORNDORFF.

24c. **Seminary in Organic Chemistry.** One hour per week by appointment.

The object of this course is to familiarize the student with the literature of organic chemistry and to bring him into touch with its recent investigations and theories. Articles in the current numbers of the journals are assigned to the students who report on them weekly, after which there is a general discussion and criticism of papers presented. Assistant Professor ORNDORFF.

Inorganic Chemistry.

[25. **History of Chemistry.** For all students intending to specialize in chemistry. M., W., F., 11, *Ch. L. R. 2.*

This course alternates with course 26. The general subject is divided into topics each of which is treated continuously from the beginning to the end of its history : biographies of chemists whose work has been prominent in any topic are given in connection with that topic. No other science than chemistry has passed through so many interesting and often widely adopted opinions regarding the same subjects, and no other science has a more unique history. The course is open only to those who have completed courses 1, 3 and 4, or 2, 5 and 6, and have taken or are taking course 20. Professor CALDWELL.]

26. **Inorganic Chemistry.** Advanced course. Open only to those who have completed courses 1 or 2, 5, 6 and 20. Lectures. M., W., F., 11. *Ch. L. R., 3.*

These lectures are based directly upon the periodic law of Mendeléeff and Lothar Meyer, and are fully illustrated by experiments. The rare elements are as fully considered as are the more common ones. Especial attention is given to the "rare earths." Associate Professor DENNIS.

27. **Inorganic Chemistry.** Laboratory practice, by appointment. Associate Professor DENNIS and Mr. RICHMOND.

Course 27 is designed to accompany course 26, but either course may be taken separately.

28. **Advanced Inorganic Chemistry.** Seminary for advanced and graduate students. One hour per week by appointment. Associate Professor DENNIS.

Physical Chemistry.

30. **The Phase Rule.** Recitations. T., Th., 8, *Ch. L. R., 4.* A comprehensive qualitative study of all types of chemical equilibrium, as classified by the Phase Rule of Gibbs. Special attention will be

given to the applications of the theory to technical and laboratory practice. It is desirable that this course be supplemented by laboratory practice (course 38), at least one hour per week. Open to those who have completed course 1 or 2 or its equivalent. Assistant Professor BANCROFT and Dr. CARVETH.

31. **The Law of Mass Action.** Lectures and recitations. M., W., F., 10, *Ch. L. R.*, *4*. Non-mathematical exposition of the law of mass action, in its application to chemical equilibria and the velocities of reactions. Complementary to course 30. It is desirable that these lectures be supplemented by laboratory practice (course 38), at least two hours per week. Open to those who have taken 01 are taking course 20 or its equivalent. Assistant Professor BANCROFT.

32. **Mathematical Chemistry.** Lectures and recitations. T., Th., S., 12, *Ch. L. R.*, *4*. An introductory account of general physical chemistry. Open to those who have completed introductory courses in general chemistry, in physics, and in differential calculus. Assistant Professor TREVOR.

33. **Mathematical Chemistry.** Advanced course. Lectures and collateral reading. Three hours. Assistant Professor TREVOR.

[34a. **Electrochemistry.** The historical development of the subject. For advanced students in physical chemistry or physics. Lectures. Two hours. Assistant Professor BANCROFT.]

34b. **Electrolytic Syntheses.** Lectures. One hour by appointment. Intended for students going into technical work, and for engineers. Students are advised to elect course 38, one or two hours per week, in connection with this work. Assistant Professor BANCROFT.

37. **Exact Measurements.** Lectures. One hour by appointment. A discussion of the sources of error in laboratory methods. Assistant Professor BANCROFT.

38. **Laboratory Work.** Experimental methods, and research work for theses. Assistant Professor BANCROFT.

Miscellaneous Courses.

40. **Potable Water.** Lectures. Fall. Three hours. 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. Dr. CHAMOT.

41. **Chemical Toxicology, Inorganic and Organic.** Lectures.

Winter. M., W., F., 9. The present ideas as to the classification, mode and cause of action, and methods of elimination of poisonous substances, together with a critical discussion of the methods to be employed for their separation, identification and determination. Open only to those who have had course 5. (Veterinary students take this course M. and W. only.) Dr. CHAMOT.

42. **Beverages and Foods.** Lectures. Spring. M., W., 9, *Ch. L. R.*, 2. Their chemical composition, digestibility and nutritive value. Methods and objects of food investigations. Adulterations; how detected. Professor CALDWELL.

45. **Physiological Chemistry.** Lectures. Winter and spring. M., W., F., 12, *Ch. L. R.*, 1. This course is the continuation of course 21a, and is intended for students of medicine. Assistant Professor ORNDORFF.

45a. **Physiological Chemistry.** Laboratory work. Two hours. Winter and spring. The course is required of students of the medical college. Professor ORNDORF and Mr. TEEPLE.

[46. **Industrial Chemistry.** Lectures. M., W., 12, *Ch. L. R.*, 1.]

[47. **Seminary in Industrial Chemistry.** For the discussion of subjects of special interest to the technical chemist. One hour by appointment.]

Of the courses in chemistry given above, Courses 7 (in part), 17, 22, 23, 24a, b, c, 25, 26, 27, 28, 31, 32, 34, 38, are regarded as senior or graduate work.

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, is important.

The advanced courses in comparative morphology, and embryology, comparative histology and mycology, are intended to lay the foundation for independent investigations in these subjects as well as to present in a logical way the fundamental principles of development, relationship, and phylogeny, as applied in these topics. Aside from the elementary courses these subjects are especially recommended to students who are fitting themselves for teachers, since a grasp of the principles underlying them is needed for the proper and thorough presentation of the elementary principles of botany. In the work of

these courses each of the students gradually accumulates a set of permanent microscopic preparations which can be kept for future reference and for demonstrations before 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 courses in plant histology, plant physiology, and in the study of the fungi. While the laboratory is distant from the seashore it is well supplied with material of the marine algae for morphological and development study of typical forms.

The laboratory is well equipped with microscopes, microtomes, photographic apparatus, thermostats, sterilizers, culture rooms, an electric lantern and a large number of views for illustrating portions of the lectures, the Auzoux and Brendel models representing the different groups of plants, and other illustrative material in the way of charts, maps, etc. The large green houses in connection 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 green house plants, the latter being in charge of the head gardener of the department. The department also contains a large and growing herbarium, as well as collections of fruits, cones, nuts, fibres, a general collection of economic products, and a large number of specimens of the woods of different countries.

Courses 1, 2, 3, 4, 5, may be elected in the Freshman year. Those desiring to specialize in botany are advised to take courses 1 and 2 in the first year.

I. General Courses.

1. **General Comparative Morphology and Physiology of Plants.** Three hours. Fall and winter. 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, T., 2–5 and W., 11–1; and if another section is formed, Th., 2–5, and F., 11–1. One forenoon and one afternoon session must be taken each week. Professor ATKINSON, Dr. DURAND, Mr. CLARK, and Miss FERGUSON.

2. **Special Morphology of Higher Plants.** Spring term. Three hours. Studies of typical plants representing the more general groups

of angiosperms. Four 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 Miss FERGUSON.

3. **Special Course in Dendrology for Engineers.** Fall term and winter term. Two hours. The morphology and taxonomy of trees. The structure and development of wood. Fall and first half of winter term. M., W., 9. Assistant Professor ROWLEE and Mr. HASTINGS. The diseases of timber and forest trees. Twelve sessions, last half winter term. M., W., 9. Professor ATKINSON and Mr. HASSELBRING. (Required of Civil Engineers, and open to election without any prerequisite in botany, to those interested in these problems.)

4. **Short winter course in Botany for students in Agriculture.** Two hours. A study of general morphology and of the fundamental principles of plant growth with special reference to cultivated plants. Fungus diseases of cultivated plants. Hours by appointment. Mr. MURRILL.

5. **Geographical Botany.** Spring term. Lectures, S., 9. 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. HASTINGS.

6. **Exotics.** One or two hours. The conservatory in connection with the department offers excellent opportunities for students who wish to become familiar with practical methods in propagation and cultivation of conservatory plants, and in practical greenhouse work. Mr. Shore, the expert gardener, will have charge of the instruction and practical work. Students desiring to take this course should consult Professor ATKINSON who will have charge of conference and reports. Hours by appointment.

II. Advanced Undergraduate Courses.

These advanced courses may be elected in any order which the student chooses, the only prerequisite being courses 1 and 2. They are also open to election by graduate students.

Comparative Histology, and Phanerogamic Botany.

7. **Taxonomy and phylogeny of Angiosperms.** Three hours through the year. Lectures, Th., 9. Laboratory work Wednesday afternoon and Thursday morning. A study of the genetic relation-

ships of the phanerogamous orders. Fall term. Monocotyledons. Winter and spring terms. Dicotyledons. Practical studies in the laboratory of groups illustrating the principles of natural classification. Assistant Professor ROWLEE, and Mr. HASTINGS.

8. **Comparative Histology of Plants.** Three hours through the year. Fall term. Introduction to methods of investigation. Preliminary studies of the vegetable cell and its contents. Winter term. The development of primary tissues. Kinds of tissue. Comparative study of vascular tissue. Spring term. Secondary thickening. Lectures, F., 9. Laboratory work Friday afternoon and Saturday morning. Assistant Professor ROWLEE and Dr. WIEGAND.

9. **Dendrology.** Three hours. Fall term. A biological and taxonomic study of trees, including field observations upon the native species, and laboratory investigations upon the development of woody structures. Required of the students of forestry. Prerequisites, courses 1 and 2. Course 5 may advantageously precede this course. Lectures, T., 9. Laboratory work Monday afternoon and Tuesday morning. Assistant Professor ROWLEE, and Mr. HASTINGS.

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 term the chief attention will be given to the Bryophyta, the winter will be devoted principally to the Pteridophyta, followed by the gymnosperms and angiosperms in the spring. The course is continuous, and because of the logical sequence of the subjects, must be taken in the order presented. Lectures. Th., 11. Laboratory work preferably Monday and Wednesday afternoons. Professor ATKINSON, and Dr. DURAND. Prerequisite, courses 1 and 2.

11. **Mycology.** Three hours through the year. Fall term. *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. Winter term, Parasitic Fungi; the history and development of the most important parasitic fungi. Spring term, general classification with studies in representative groups and discussions

of the phylogeny of the fungi. Practice in the recognition of species, or research work may in some cases be taken as a parallel course by registering in course 14*a*. Lectures, T., 11; laboratory work preferably Tuesday and Thursday afternoons. Professor ATKINSON, and Mr. HASSELBRING. Prerequisites, courses 1 and 2.

12. **Taxonomy of the Bryophytes and Pteridophytes.** Three, or two, hours throughout the year. Lecture, one hour, Th., 11. Laboratory, two hours, preferably Monday and Wednesday afternoons. The laboratory work will consist of a study of typical genera, practice in taxonomy, and field work. The students will attend the lectures of course 10, and may if they choose take the laboratory work of that course in addition, making 5 hours. Students who have had course 10 will register only for the laboratory work of course 12, with 2 hours credit. Lecture by Professor ATKINSON. Laboratory work by Dr. DURAND. Offered 1899–1900.

III. Graduate Courses.

(*Primarily for graduates; but open to election by undergraduate students engaged in research.*)

To those electing any of the graduate courses for an advanced degree the following general announcement applies. A four hour course is the minimum period and if the subject is chosen for a major study, or as a minor for the master's degree, more time will be required.

Comparative Morphology and Embryology, Mycology, etc.

13. **Methods of research in morphology and embryology.** Not less than four hours. Each student will be assigned some problem for original research with special reference to sporogeny or embryology, and the morphology of the nucleus with reference to sporogenesis, spermagenesis, oogenesis, and fertilization. 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 inde-

pendent survey of the group of fungi in the collection of material and in general taxonomic work on the same to acquire a practical knowledge in the placing of genera and species in the various groups. From this point research on some problem can be directed to some monographic work, either in taxonomy, taking up one or more genera according to the number of species; or in development of a few species. The periods are arranged as follows, but are subject to change in special cases:

14*a*. **General taxonomic survey of the fungi.** Four hours through the year; or eight hours for the first half of the year. Should follow course 11, or in special cases may be taken as a parallel course. Hours by appointment. Professor ATKINSON, and Mr. HASSELBRING.

14*b*. **Research;** monograph of some genus or a limited number of genera; or some monographic study of development, or of parasitism. Not less than four hours through the year, and where the problem is selected as a major study more time will be required. In any case a thesis combining the results of the investigation will be required. Reports weekly. Should follow course 14*a*. Hours by appointment. Professor ATKINSON.

Experimental Plant Physiology.

15. **Experimental 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; and with the effects of stimuli upon cell activities, growth, development, etc. Each student will be required to prepare a thesis embodying the results of his investigations. Prerequisites, courses 1 and 2, and in addition either one of courses 8, 10, or 11 (or an equivalent). Hours by appointment. Mr. CLARK. Students electing this course must register with Professor ATKINSON, and weekly reports may be required.

Comparative Histology and Phanerogamic 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 term of the year before the course is to be taken up. Among the groups which may be taken up are the glume-bearing Monocotyledons (grasses, sedges, etc.), the amentiferous Dicotyledons, and the Compositae. Since different groups will be

taken up in different years, students may pursue the work outlined in this course more than one year. Designed for those who have taken courses 7 and 8, or in special cases, permission will be given to take these as parallel courses. Hours by appointment. Assistant Professor ROWLEE and Dr. WIEGAND, and Mr. HASTINGS.

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, Dr. WIEGAND, and Mr. HASTINGS.

IV. Botanical Seminaries.

18. **Seminary in Embryology, Mycology, etc.** Weekly seminaries will be held in embryology, comparative morphology, mycology and related subjects. Readings and discussions of current literature; and problems under investigation will form the basis for the seminary work. Required of all graduates and open to undergraduates who are engaged in research in courses 13, 14 and 15 (one hour). By appointment. Professor ATKINSON.

19. **Seminary in Comparative Histology and Taxonomy of the Angiosperms.** Weekly 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 connection with similar courses offered by the Department of Physiology

and Vertebrate Zoology afford the instruction in zoology needed by students in the general courses and serve as an introduction to the more advanced work of those who wish to make a special study of zoology.

Owing to the difficulty of studying marine animals at any place remote from a sea coast and to the exceptionally good facilities for the study of insects at this University, those students wishing to take advanced work in invertebrate zoology here are advised to select some subject in entomology, and especial encouragement is given to those students wishing to make original investigations in this field. An important feature of this department is a summer term, consisting of lectures, field work, and laboratory practice, at the season of the year most favorable for the study of insects.

The Museum and Laboratory. The material equipment of the department for the study of General Invertebrate Zoology consists of a museum in which there is a good series of Invertebrates, including an excellent collection of corals and a very large collection of shells, the Newcomb Collection. The museum also contains the complete series of glass models of invertebrates made by Blaschka, the papier maché models of Auzoux, and a complete set of the zoological diagrams of Leuckart. The laboratory is kept supplied with specimens of the typical marine forms studied by the students. These are supplied to the students at cost.

The entomological cabinet contains, in addition to many exotic insects, specimens of a large proportion of the more common species of the United States. These have been determined by specialists, and are accessible for comparison. The collection includes many sets of specimens illustrative of the metamorphoses and habits of insects. The laboratory is also supplied with a large collection of duplicates for the use of students; and is equipped with microscopes and other apparatus necessary for practical work in entomology.

The insectary of the Agricultural Experiment Station affords facilities to a limited number of advanced students for special investigations in the study of the life history of insects, and for experiments in applied entomology.

The following courses are offered in 1899–1900.

1. **Invertebrate Zoology.** General course. Fall term. Lectures. M., W., 10, *White 12*, Professor COMSTOCK; and one practical exercise by the class in sections, Th., F., 2:30–5, *White 20*. Messrs. MACGILLIVRAY and RILEY.

2. **Morphology of Invertebrates.** Special laboratory course. Fall and spring term. Daily, ex. S, 8–1, *White 20*. Messrs. MACGILLIVRAY and RILEY.

3. **General Entomology.** Lectures on the characteristics of the orders, sub-orders, and the more important families, with special reference to those of economic importance. Spring term. Lectures. M., W., 10, *White 12*, Professor COMSTOCK; and one practical exercise for those who have not had courses 4 and 5, in sections, Th., F., 2:30–5, *White 20*. Messrs. MACGILLIVRAY and RILEY.

Course 3 is open only to students who have taken course 1. Those special students in agriculture who do not take course 1, but who wish to study entomology, are recommended to take courses 4, 7, and 5.

4. **Elementary Morphology of Insects.** Laboratory work. Fall term. Three hours. Daily, ex. S., 8–1, *White 20*. Messrs. MACGILLIVRAY and RILEY.

5. **Elementary Systematic Entomology.** Laboratory work. Spring term. Three hours. Daily, ex. S., 8–1, *White 20*. Messrs. MACGILLIVRAY and RILEY.

Course 5 is open only to students who have taken course 4.

6. **Research in Entomology.** Advanced laboratory course, special work arranged with reference to the needs and attainments of each student. Fall and spring terms. Daily, ex. S., 8–1, *White 20*. Professor COMSTOCK and Messrs. MACGILLIVRAY and RILEY.

Students writing theses in this department and candidates for advanced degrees may continue their researches in the laboratory during the winter term. Daily, ex. S., 8–1. Messrs. MACGILLIVRAY and RILEY.

7. **Economic Entomology.** Lectures on applied entomology. Discussion of the more important insect pests and of the methods of combating them. Winter term. T., Th., 10, *White 12*. Assistant Professor SLINGERLAND.

Economic Entomology.—Courses 3, 4, 5, 6, 7, 8, 9, and 11 may be elected as agricultural subjects by students in the College of Agriculture with the restriction that work in courses 6 and 11 shall have an economic bearing. Students in the College of Agriculture writing theses in this department are required to attend a summer term.

Summer Term.

Owing to the better opportuities for the study of Entomology during the summer than in the winter, there has been established a summer term of this department. This term begins the first Wednesday following Commencement and lasts ten weeks. The courses are of an advanced nature; and only those students of this University who have taken courses 1 and 3 are admitted to them, Teachers and

others desiring to join the class without previously attending the University, should state in their applications the amount of zoological work they have done.

The tuition fee for the summer term is $25.00. Students who have been members of the University during the preceding year are excused from the payment of this fee. Applications for admission to the course should be made before June 1st.

8. **Introductory Course.** Elementary morphology of insects and systematic entomology. Laboratory work. Daily, ex. S., 8–5, *White 11, 12, 20.* Messrs. MACGILLIVRAY and RILEY.

9. **Œcology of Insects.** Two hours. Lectures and field work on the habits of insects, and on their relations to their environment. T., Th., 9–12, *White 12.* Professor COMSTOCK.

Course 9 is open only to students who are taking at least three hours of course 8.

10. **Morphology and development of Insects.** Lectures. M., 10, Th., 4, *White 12.* Professor COMSTOCK.

11. **Research in Entomology.** Special work arranged with reference to the needs and attainments of each student. Daily, ex. S., 8–5. Professor COMSTOCK and Messrs. MACGILLIVRAY and RILEY.

PHYSIOLOGY, VERTEBRATE ZOOLOGY AND NEUROLOGY.

The laboratories and lecture-rooms of the department occupy the entire north wing of McGraw Hall. The museum is in the center of the building on the main floor and in the first gallery.

Courses of Instruction.—With all, practical work constitutes an essential feature. With the first three, Physiology, Vertebrate Zoology, and Neurology, one-third of the exercises are in the form of 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.

Courses 1, 2, and 3 are intended to be taken continuously in the same year, but for the present this is not insisted upon.

Course 1 is general and introductory to the others in this department. It may advantageously precede or accompany courses 1, 2 and 3 in Microscopy, Histology and Embryology, and the courses in Anatomy, and in the Physiology of Domesticated Animals (Veterinary College). Courses 1, 3 and 7 are also designed to serve as a preparation for Psychology (see Course 1 in Philosophy).

Relations with the Medical College.—The Physiology of the first year in the Medical College includes the lectures of Course 1. The Anatomy of the second year includes the whole of Course 3.

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 specimen, 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 of well preserved and prepared brains of man and other vertebrates. The local fauna is already represented by 240 species, of which about 55 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 1898–9 the forms were as follows: Monkey, cat, fox, raccoon, ferret, porcupine, hare, mouse, flying squirrel; crow, pigeon, parrot, gull, grebe; alligator, heloderma (Gila monster), serpents and turtles; frogs, salamanders and necturus; lake lamprey, amia, gar, stickleback, catfishes, perch, suckers, sunfish, etc.

Opportunities for Research.—Besides ordinary forms, there are readily obtained living necturus, amia, and two kinds of lamprey. The Brazilian fishes collected by the late Professor C. F. Hartt have been identified by Professor Eigenmann. The large number of cats, sheep hearts and brains, and of representative vertebrates used annually at the practicums in Physiology and Zoology facilitates the study of both normal anatomy and variation. Besides the museum specimens there are in store many entire vertebrates, particularly marsupials at various ages. The hearts of numerous forms have been prepared by injecting alcohol into their cavities. For the study of cerebral topography, unusual facilities are offered in both material and literature.

The following courses are offered in 1899–1900:

Courses 1 to 7 inclusive may be taken by Freshmen without special permission.

1. **Physiology.** Fall term. Three hours. Two lectures; T., Th., 11. One practicum; two sections at hours to be arranged Thursday and Friday afternoons. The lectures treat largely of the structure

and functions of the nervous system and the sense organs. At the practicums each student dissects the viscera and certain muscles of the cat, and the heart, brain, and eye of the sheep; the principal tissues, including living cilia, are examined under the microscope. Professor WILDER and Dr. STROUD.

2. **Vertebrate Zoology.** Winter term. Three hours. Two lectures and one practicum; days and hours as in course 1. At the practicums are dissected representative forms including necturus, lamprey, ray, shark, etc.; sections of the lancelet are studied under the microscope. Professor WILDER and Dr. STROUD.

Conrse 2 must be preceded by course 1, or by course 1 in Entomology and Invertebrate Zoology.

3. **Neurology.** Spring term. Three hours. Two lectures and one practicum; days and hours as in course 1. The lectures deal with (a) the comparative anatomy of the brain; (b) the morphology of the human brain; (c) the cerebral fissures. Professor WILDER and Dr. STROUD.

Course 3 must be preceded by courses 1 and 2.

4. **Practical Physiology.** Fall term. Laboratory work with occasional lectures and demonstrations. Three hours. An extension of course 1 with special reference to the needs of teachers of elementary physiology. The practicum dissections are repeated. The corresponding human organs are examined. The students are shown how to perform for themselves simple chemical and physiologic experiments; the latter are all callisections, *i. e.*, are done upon animals just killed or completely anesthetized. Dr. STROUD.

Course 4 must be preceded or accompanied by course 1.

5. **Comparative Anatomy.** Winter term. Three hours. Laboratory work with a weekly lecture or recitation. An extension of course 2. Professor WILDER and Dr. STROUD.

Course 5 must be preceded or accompanied by course 2.

6. **Systematic and Economic Zoology and Museum Methods.** Three hours per week throughout the year. Laboratory and field work with occasional lectures. Mr. REED.

Course 6 must be preceded or accompanied by course 2.

During the spring term of 1899–1900 course 6 may be supplemented or partly replaced by the lectures on Pisciculture by Professor EVERMANN under the auspices of the College of Forestry.

7. **Physiology of the Nervous System.** Spring term. Three hours; one lecture, one recitation and one laboratory exercise in dissection or experimentation. Professor WILDER and Dr. STROUD.

Course 7 must be preceded by courses 1 and 4.

8a. **Histology of the Nervous System.** Spring term. Three hours. Laboratory work, with a weekly lecture or recitation. T., 9. Dr. STROUD.

Course 8a must be preceded by courses 1, 2. and 3, and by courses 1 and 2 in Microscopy and Histology.

8b. **Advanced Histology of the Nervous System,** with special reference to the fiber tracts and the functions of parts. Laboratory work with occasional lectures and recitations. Hours to be arranged. Dr. STROUD.

Course 8b must be preceded or accompanied by course 8a.

9. **Advanced Study, Research and Thesis Work.** Daily throughout the year. Professor WILDER and Dr. STROUD.

10. **Department Conference.** Fortnightly throughout the year, at an hour to be arranged, alternating with the Seminary in Microscopy, Histology and Embryology.

All the courses in this department, and particularly the more advanced, are more satisfactorily pursued if the student has the following preparation :

1. French and German as required for entrance to the courses in Architecture and Engineering.
2. Freehand Drawing ; Drawing Course 1 of the Sibley College of Mechanic Arts.
3. Photography ; course 9 in Physics.
4. Microscopy and Histology ; courses 1 and 2.

ANATOMICAL METHODS AND HUMAN ANATOMY.

The instruction in anatomy is given in six courses, of which two pertain to Comparative Veterinary Anatomy ; the other four courses are outlined below. The instruction is by lecture and laboratory work, the latter being by far the more important.

In courses 1 and 2, the student learns some anatomy, but what is of more importance to the beginner, the eyes become somewhat trained to distinguish quickly, and the hands to dissect neatly and accurately the various structures under consideration, so that in course 3 the study of human anatomy may be taken up with more advantage than otherwise would be possible.

The department of anatomy occupies the whole of the east wing of the Veterinary College—a structure 90 feet by 40, and one story in height. The floors are of impermeable cement ; the walls are lined by enameled white brick, and the ceilings are covered with sheet steel. The main laboratory is 54 feet by 40 and 22 feet in height. It is well

lighted by skylights and by electricity. It is heated by steam and hot air. The ventilation is nearly perfect, fresh air being forced into the room by large fans situated in the basement. The entire volume of air in the laboratory can be changed every five minutes without creating any perceptible draft. This constant supply of perfectly pure air is an important feature in a dissecting room. The laboratory is supplied with mounted skeletons, and other osteological material, a large refrigerator, injecting and other laboratory apparatus.

In addition to the general library of the University, there are upon the book-shelves of the laboratory dictionaries, both English and medical, a set of the Reference Handbook of the Medical Sciences, standard text-books of anatomy, physiology, physics, etc., for the special use of students in the laboratory, as books of reference.

Connected with the main laboratory is a smaller one, 22 feet by 22, which is used as a preparation room and as a private laboratory. Opening into the laboratories is a locker room, containing locker accommodations for 150 students, and off from this room are the lavatories, etc.

The following courses are offered in 1899–1900:

1. **Anatomical Methods and Gross Anatomy.** Fall term. Three hours. Lecture S., 12. Laboratory work by appointment.

This course is intended for students just beginning the study of anatomy. The objects of the course are to present fundamental facts of comparative anatomy; to train the eye to distinguish readily the various structures of the body and the hand to deftness and accuracy of manipulation. The work comprises comparative osteology; dissection of examples of each class of joints; muscles of the cat's arm; the viscera. Assistant Professor HOPKINS.

2. **Advanced Anatomy.** Winter term. Three hours. Lecture, S., 12. Laboratory work by appointment. This course is devoted to the study of the vascular, lymphatic and peripheral nervous systems and the organs of sense, the eye and ear.

Course 2 is a continuation of course 1, and must be preceded by it, or its equivalent. In these two courses the student not only learns some anatomy but also methods of preparing anatomical material for demonstration and the museum; injection of the blood and lymph vessels; corrosion preparations, etc. The two courses may be taken with advantage by those who expect to teach or are preparing for the study of medicine. Assistant Professor HOPKINS.

3. **Human or Comparative Anatomy.** Laboratory work through the year. This course is designed for those wishing some knowledge of human anatomy, or to make special investigations in the preparation of thesis, etc. Assistant Professor HOPKINS.

Course 3 must be preceded by courses 1 and 2, or their equivalent.

4. **Research and Thesis.** Laboratory work throughout the year. Assistant Professor HOPKINS.

MICROSCOPY, HISTOLOGY AND EMBRYOLOGY.

As indicated by the following courses, this department offers elementary and advanced instruction in the theory and use of the microscope and its accessories, in photo-micrography, in vertebrate histology and vertebrate embryology; and opportunities for research in all of these subjects.

The rooms for the use of this department are on the third floor of the Veterinary College. They are ample and almost perfectly lighted, and consist of a large general laboratory, two research laboratories, and the private laboratories of the professors in charge, where special demonstrations of difficult subjects are given to small groups of students.

The material equipment consists of a good supply of modern microscopes, each one of which is fitted with a low and medium power dry objective and a 2 m.m. homogeneous immersion objective. Camera lucidas, polariscopes, micro-spectroscopes, photo-micrographic cameras, and other special apparatus are in sufficient numbers to give each student opportunity for personally learning to use them, and for applying them to any special study in which they are called for. The general and research laboratories are large, and are equipped with microtomes, incubators, aquariums, 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 the power to acquire knowledge direct from nature which is gained by this personal work, is of far higher value than the facts and theories that might be learned in the same time from books and lectures alone, or from specimens prepared by some other individual.

This lake region with its rich and varied fauna is especially favorable for investigations in the histology and embryology of all the main

groups of vertebrates and the proximity of the abattoirs in the city, makes it possible to obtain material for the study of the development of the sheep, cow, and pig. The college clinic and the department of anatomy supply material for the embryology of the cat and dog, so that the opportunities for research upon the development of the domestic animals are excellent. Every encouragement is given for the fullest utilization of these opportunities by students in the preparation of theses and for special investigations.

The following courses are offered in 1899–1900.

Courses 1, 2, and 3 are open to Freshmen.

1. **Microscope and microscopical methods.** First half of fall term. Two hours. Two lectures, one quiz and 6½ actual hours of laboratory work. This course forms the basis for all the subsequent work given by the department. It is also designed to give a knowledge of the theory and use of the microscope and its accessories which would be advantageous for the work of any department where the microscope is employed. M., W., 8. Professor GAGE, Assistant Professor KINGSBURY, Dr. CLAYPOLE and Mr. MERCER.

This course counts two university hours for the term, although the work must all be done in the first five weeks.

2. **Vertebrate histology.** Last half of fall term (3 hours) and the winter term (5 hours). Eight hours. Two lectures, one quiz and 6½ actual hours of labaratory work. In this course are given the elements of the fine anatomy of the domestic animals and of man. It includes also methods of histologic investigation and demonstration. M., W., 8. Professor GAGE, Assistant Professor KINGSBURY, Dr. CLAYPOLE and Mr. MERCER.

This is a continuation of course 1 and is open only to those who have taken course 1, and have taken or are taking courses in anatomy and physiology.

3. **Vertebrate embryology.** Spring term. Five hours. Two lectures, one quiz and 6½ actual hours of laboratory work. This course deals with the elements and methods of embryology in man, the domestic animals and the amphibia. M., W., 8. Professor GAGE, Assistant Professor KINGSBURY, Dr. CLAYPOLE and Mr. MERCER.

Course 3 is open only to those who have pursued courses 1 and 2.

4. **Research in histology and embryology.** Laboratory work 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 Assistant Professor KINGSBURY.

Course 4 is open only to those who have taken courses 1, 2, and 3, or their equivalent in some other university. Drawing (course 1, in Mechanical Engineering, or its equivalent) and a reading knowledge of French and German are indispensable for the most successful work in this course.

Subjects for baccalaureate theses should be decided upon if possible during the spring term of the junior year so that material in suitable stages of development and physiologic activity may be prepared.

5. **Structure and physiology of the cell.** Fall term. Two hours. Laboratory work with lectures. This course in Cytology is designed for advanced students, and gives the fundamental facts and principles relating to cell structure and activity. It also serves to train students in the more exact and refined methods of histology. Assistant Professor KINGSBURY.

Course 5 is open only to students who have had courses 1, 2, and 3, or their equivalent.

6. **Microscopy, advanced.** Spring term. Two hours. Laboratory work with lectures. In this course special instruction will be given in the theory and use of the more difficult and important accessories of the microscope, *e.g.*, the micro-spectroscope, the micro-polariscope, the apertometer, the photo-micrographic camera, and the projection microscope. Professor GAGE.

This course is open only to those who have taken courses 1, 2, and if photo-micrography is desired, an elementary knowledge of photography like that given in course 9, Department of Physics, is necessary.

NOTE.—For the work of this department the student will find a knowledge of Latin and Greek of the greatest advantage. A year's study of Latin, three to five recitations per week, and of Greek, Goodell's Greek in English, or Coy's Greek for beginners, would represent the minimum amount needed. For all courses, the ability to draw well freehand, and a good reading knowledge of French and German are desirable, and for research work almost indispensable.

GEOLOGY.

INCLUDING: A. PALEONTOLOGY AND STRATIGRAPHIC GEOLOGY; B. MINERALOGY AND PETROGRAPHY; C. DYNAMIC GEOLOGY AND PHYSICAL GEOGRPHY; D. ECONOMIC GEOLOGY.

A. Paleontology and Stratigraphic Geology.

The courses of this department are elective; and are open to all. A special attempt is made to have all work, so far as is practicable, carried on after the manner of original research. This is rendered

feasible by the fortunate location of the University, in the midst of the most important and classical State of the Union, so far as paleontology and stratigraphic geology are concerned.

A seemingly large proportionate amount of time is spent in field and laboratory, with few recitations and lectures, thus giving the future teacher a knowledge at first hand of these important branches of geology as taught in secondary schools, and the future specialist precisely the knowledge and methods of work he will need in any university, state or national geological survey.

Great stress is laid on the study of shells, for by means of them stratigraphy and the world's geological history are mainly interpreted. The large University collections of invertebrates, fossil and recent, mostly shells, have been rearranged and catalogued during the past few years, and now form a most valuable and indispensable aid to elementary and advanced workers. Among those most serviceable to students of older formations will be found: the Jewett collection, especially rich in New York Silurian species; local and practically complete Devonian faunas from Central New York; the Hartt type collection of carboniferous fossils from Brazil.

Of late special attention has been given to Tertiary paleontology and geology, annual 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.

B. Mineralogy and Petrography.

In this department both elementary and advanced courses are offered to students who have the necessary preliminary knowledge of chemistry and physics. The courses lead in two main directions: (a) toward an acquaintance with the properties, methods of investigation, and uses of minerals and rocks; and (b) toward a knowledge of the characteristics of crystalized matter, and of the important relationship existing between crystallography and the sciences of physics and chemistry.

The laboratory rooms and museum are situated at present in McGraw Hall. They are well equipped with study collections, including the Benjamin Silliman, Jr., collection of minerals, and with apparatus for experiment and investigation. There is also material for original research.

C. Dynamic Geology and Physical Geography.

The plan of the elective courses offered in these subjects is in the first year to give a general view of the subject of geology, placing especial stress upon the dynamic side, but introducing the other aspects of geology where they have a distinct bearing upon the course. This is not primarily a professional course, but is intended to meet the needs of those who, without meaning to specialize, wish a certain knowledge of the earth sciences. At the same time it serves as the basis for more advanced work. In the second year the subject of physical geography is offered, and this presupposes the course in geology. These two courses together will serve as a preparation for those who expect to teach the earth sciences in secondary schools. The physical geography, or physiography, follows the plan recently suggested by the Committee of Ten, and other educational conferences. After these two years the student is able to undertake work for himself in the library and field. In these more advanced courses small problems are investigated and reports made upon them, and thus a training is gained for more advanced field work upon larger problems.

The work of the first two years consists partly of lectures and partly of field and laboratory work; but in the later years no lectures are given, the work being largely individual. Therefore, from the very first, the student is placed directly in contact with the problems of the field, and is given training in observation and geological reasoning. The laboratory is well equipped with models, maps, rock specimens and photographs illustrating geological and physiographical phenomena. The neighborhood of Ithaca abounds in both simple and complex illustrations of geological phenomena; and in each class, in the spring and fall terms, excursions are made to points within easy reach of the University. These half-day excursions are supplemented by others to more distant points, occupying the entire day; and still longer expeditions are sometimes organized. During 1898–99 excursions were made to Niagara and to the coal mines at Wilkes-Barre, and probably similar expeditions will be made each year. Now and then vacation trips may be undertaken, particularly during the summer. In 1896 a party of advanced students made a journey to Greenland; in 1899 a party went to Maine. These more extended field experiences are planned to give training for those who intend to pursue the subject of geology.

D. Economic Geology.

Instruction. The courses of instruction are both required and elective. The former are for students in the colleges of architecture,

forestry and civil engineering and each course is adapted to the special needs of the class taking it.

The elective work is intended to give the student a general knowledge of the occurrence and properties of the useful minerals and rocks, or to enable him to specialize along certain lines if he so desires. The lectures are supplemented by laboratory and field work, and occasionally longer excursions are taken, as to the coal regions of Pennsylvania, the mining regions of Michigan, etc.

Collections. These include: (1) About 2,000 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 600 lantern slides and several hundred photographs.

Laboratory. The department also has a laboratory in which either chemical work or fire tests can be carried on, there being for this latter purpose two furnaces capable of generating 3300 degrees Fahrenheit of heat. These are useful for testing clays and building stones; but the laboratory is especially well equipped with apparatus for clay investigation.

The following courses are offered in 1899–1900:

A. Paleontology and Stratigraphic Geology.

These courses are elective; open to all.

1. **Elementary Geology.** Three hours. Field and laboratory work, one, lecture two hours, fully illustrated with views of typical rock outcrops. Fall. Planned with special reference to the historic side of the subject. The professor's private launch will furnish a very inexpensive and efficient means for visiting rock exposures and for transporting materials collected on Cayuga and Seneca lakes, and other nearby waters, to the laboratory. Excursions generally Saturdays. Hours to be arranged. This course is especially adapted to the needs of general students, and beginners in geological science. Assistant Professor HARRIS.

2. As No. 1, but covering in the field the whole New York section of rocks. Five hours. Laboratory and field work. Outline of work: Enrolment of class and start from Ithaca *via* Cayuga Lake, and Erie canal for Troy, N. Y., Sept. 1; stratigraphic studies, collection of

fossils, sketching and photographing important outcrop of rocks from the oldest Cambrian about Troy to the upper Devonian about Ithaca, Sept. 5 to registration day. (The launch mentioned under No. 1 will be used in this work). Laboratory work during the regular term; identification of fossils; compiling a detailed and consecutive account of all observations made during the trip. This course is intended for students who intend to specialize in some branch of geological science. Assistant Professor HARRIS.

3. As No. 1, but with a comparatively greater proportionate amount of field work. Spring. Number of hours variable. A certain area will be taken up and mapped geologically. Assistant Professor HARRIS.

4. **Elementary Conchology.** A study of the common and important types of brachiopods. Lectures and laboratory work. Two hours. Fall. Lamellibranchs. Lectures and laboratory work. Three hours. Winter. Univalves. Lectures and laboratory work. Three hours. Spring. Frequent excursions will be made to rock outcrops and nearby waters where fossils and recent shells will be collected. Assistant Professor HARRIS.

5. **Paleontological Illustration.** One hour. Spring. Assistant Professor HARRIS.

6. Laboratory work during all terms of the year. Nearly all advanced work, including preparation of theses and original articles, is classed under this heading. Assistant Professor HARRIS.

B. Mineralogy and Petrography.

10. **Mineralogy.** Winter. Three hours. A short course required of Civil Engineers and Students of Forestry, consisting of lectures, recitations and laboratory practice. M. and Th., 10, T. or Th., 2. Assistant Professor GILL and Mr. ———.

11. **Mineralogy.** Fall and winter. Three hours, two lectures and one laboratory hour. This course is for beginners in the subject, and is designed to lead up to more advanced work. Lectures T. and Th., 11. Assistant Professor GILL.

12. **Crystal Measurement and Drawing.** Spring. Two hours. Assistant Professor GILL.

13. **Blowpipe Analysis of Minerals.** Spring. One laboratory hour. Assistant Professor GILL.

14. **Physical Crystallography.** Fall. Three hours, two lectures and one laboratory hour. Must be preceded by course 11 or its equivalent. Assistant Professor GILL.

15. **Petrography.** Winter and spring. Three hours. Must be preceded by course 14. Assistant Professor GILL.

16. **Seminary in Mineralogy and Crystallography.** Winter. One hour. Devoted to the study of current literature and some of the more important classic writings. Assistant Professor GILL.

17. **Advanced Work in Mineralogy and Petrography.** Adapted to the needs of the individual student. Includes preparation of theses. The work may be directed in the line of Crystallographic Measurements, Crystal Structure, Mineral Synthesis, Microchemical Methods, or Petrographic Research. Assistant Professor GILL.

C. Dynamic Geology and Physical Geography.

Lecture room first floor, south end of McGraw Hall; office and laboratory second floor; consultation hours, 10–11.

20. **Dynamic Geology.** Fall. One lecture, M., 10; one recitation, either W., 10, F., 10, or Th., 10; and one laboratory hour, either T., 10–12, or W., 2–4. *Geological Lecture Room.* Professor TARR and Dr. RIES.

Required Course for Civil Engineers. Not open to elective students.

Elective Courses.

21. **General Geology.** Lectures, accompanied by field and laboratory work. Three hours. In the lectures especial attention is given to dynamic geology, but the general subject is also treated in its relation to dynamic and physiographic geology. Lectures, T., Th., 9, *Geological Lecture Room.* Laboratory and field work, M., 2–4:30, or T., 2–4:30 (if another section is needed, hours will be arranged).

The laboratory and field work are planned to supplement and illustrate the lectures. In the fall and spring terms short excursions are made to points of interest near by, and one or two excursions are made to more distant points. *Open to all elective students.* Professor TARR and Dr. RIES.

22. **Physical Geography, or Physiography.** Lectures accompanied by field and laboratory work. Three hours. Lectures M., W., 9, *Geological Lecture Room.* Laboratory and field work, Th., 2–4:30 (if another section is necessary, hours will be arranged).

Open to students who have previously taken a course in general geology or who are taking course 21. Professor TARR.

The lectures discuss the features of the earth from the standpoint of their origin, history and influence upon life. Illustrated by lantern slides in the lectures, by the study of maps, models, and photographs in the laboratory, and by excursions, in fall and spring. In the fall and winter terms, the larger earth features are considered, followed

A. PALEONTOLOGY AND STRATIGRAPHIC GEOLOGY.

Special Announcement. (*See p. 174.*)

For the next two years no regular courses will be given in this department during the winter term, but laboratory work may be continued if students so elect.

In place of the regular winter work, a full term's work, covering from eleven to twelve weeks beginning the first Wednesday after Commencement will be offered during the summers of 1900 and 1901.

This work will be conducted as follows:

Course A. EXCURSIONS from a rendezvous (see under B), to the following points of geological interest, by boat (the professor's private launch), the Lower Lake Champlain regions (Georgia, Chazy, etc.); the upper Hudson region (Troy, Becraft Mt., Rondout); the lower Mohawk (side excursion by railroad to Helderbergs); Little Falls; Utica (side excursion by railroad to Trenton Falls and Oriskany Falls); Syracuse (railroad to Split Rock and Manlius); Montezuma (Drumlin region); Union Springs and other points on Cayuga Lake. Credit, four hours.

Course B. CAMP WORK. The rendezvous (camping-ground) for 1900 will be near Rome or Utica, a region showing many different formations. Eight weeks will be spent it mapping geologically a United States Topographic Sheet (about 225 square miles), in forming extensive collections of fossils, in making detailed notes on the region, and in photographing typical exposures. Credit, ten hours.

The object of these courses is to give teachers a knowledge at first hand of the differeut rock formations in this classic region; and to give young geologists a rare opportunity of acquiring a practical knowledge of geology and of geological survey methods.

For further details address Professor G. D. HARRIS.

by a study of oceanography, and this by a study of rivers, mountains, shore lines, etc. The spring term is devoted to a study of glaciers and their effects, with especial reference to the United States. This course is adapted to the needs of the secondary school teacher, besides furnishing a second year of training for those who wish to pursue the subject of geology.

23. **Elementary Meteorology.** Two hours. Fall. Lectures and recitations. T., 10. Laboratory practice, time to be arranged. *Geological Lecture Room.* Professor TARR.

This course is intended for secondary school teachers of Physical Geography. Courses 22 and 23 together cover the ground ordinarily included under the term physical geography.

24. **Seminary for Teachers.** One hour. Time to be arranged. Consideration of methods to be employed in teaching geography and the earth sciences in the schools. *Geological Laboratory.* Professor TARR.

25. **Glacial Geology.** Three hours. Time to be arranged. Open to graduate students and to those undergraduates who are sufficiently advanced. Professor TARR.

In the fall and spring the class will investigate in detail the glacial geology of a region selected for the purpose. This will give practice in actual field investigation, and in field methods. In the winter term, the notes and maps will be worked up, and conferences and discussions arranged upon the results. In addition, each student will prepare and deliver a lecture upon some subject in glacial geology.

26. **Field Geology.** Three hours. Time to be arranged. Open to graduate students and to those undergraduates who are sufficiently advanced. Professor TARR and Dr. RIES.

At some time to be arranged, in both the fall and spring terms, the class will spend a week in the field in some region of complexly folded rocks in the Appalachians, where a detailed geological survey will be undertaken. The method outlined in course 8 will be followed in the winter's work in this course.

27. **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.

28. **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. Primarily for graduates. Professor TARR.

D. Economic Geology.

Required Courses.

30. **Economic Geology for Civil Engineers.** Spring. Three hours. Lectures M., W., 10, and one laboratory period, either M., W., or Th., 2–4, *Geological Lecture Room.* Dr. RIES.

31. **Clay Products and Building Stones.** Required for Architects. Winter. Two hours. Lectures M., W., 11, *Geological Lecture Room.* Dr. RIES.

32. **Origin and Nature of Soils.** Required for students in Forestry. Winter. Two hours. Lectures T., Th., 10, *Geological Lecture Room.* Dr. RIES.

Elective Courses.

33. **General Economic Geology.** Two hours throughout the year. Lectures and laboratory work. Time to be arranged. A comprehensive course upon the origin and nature of the metallic and non-metallic products with especial reference to those of the United States. The courses in General Geology (21) and Mineralogy (11), or their equivalents, are prerequisite. *Geological Lecture Room.* Dr. RIES.

Intended for students in geology, for those studying mining engineering and for students in inorganic chemistry.

34. **Clay Investigation.** Primarily for graduates. Laboratory work, field work and reading. In the laboratory are taught the different methods of testing clays for the purpose of determining their uses.

35. **Advanced Economic Geology.** Primarily for graduates. This course, including laboratory work, field work and reading, will vary with the needs of the individual student.

MILITARY SCIENCE AND TACTICS.

Pursuant to the act of Congress creating the land grant on which the Cornell University is founded, and the act of the legislature of the State of New York assigning the land grant, instruction is provided in Military Science and Tactics.

Military Drill is required of all male freshmen and sophomores except aliens, laboring students, special students and those physically unfitted therefor. A student deficient in a term of Military Drill is not permitted to substitute anything else for that work, or to be excused from any subsequent term until the deficiency is removed. In the cases of students not taking Drill and Gymnasium, an equivalent in hours will be added to the 180 hours required for graduation. Stu-

dents in the College of Law are exempt from this requirement, but may take any of the courses enumerated below.

Students who drill are required to provide themselves with the University uniform, unless excused on account of inability to procure it, and they are held accountable for loss or injury to the arms and other public property issued to them.

Any member of the Cornell University corps who has satisfactorily performed all the duties required for the first year, and who is qualified therefor, may be selected for the place of a commissioned officer, if needed. For the performance of his duties as a commissioned officer in the junior or senior year, he is entitled, if duly registered therefor, to credit of three recitation hours a week for the fall and spring terms, and, at graduation, he may receive a certificate of military proficiency with his diploma, provided he has also completed the course in military science prescribed for the winter term of the senior year.

Upon the graduation of each class, the names of such students as have shown special aptitude for military service will be reported to the Adjutant General of the Army and to the Adjutant General of the State of New York, and the names of the three most distinguished students in military science and tactics will be inserted in the *Official Army Register*, and published in general orders from Headquarters of the Army.

The following courses are offered in 1899–1900:

Military Drill is required of all male Freshmen and Sophomores except aliens, laboring students, special students and those physically unfitted therefor. A student deficient in a term of Military Drill is not permitted to substitute anything else for that work, or to be excused from any subsequent term until the deficiency is removed. In the cases of students not taking Drill and Gymnasium, an equivalent in hours will be added to the 180 hours required for graduation.

1. **Infantry Drill.** School of the soldier. School of the company. School of the battalion and ceremonies. Fall and spring terms. M., W., F., 4:45.

2. **Artillery Drill for Selected Detatchments.** School of the Battery, dismounted. Sabre exercise. Fall and spring terms. M., W., F., 4:45.

3. **Military Signaling** combined with the Bicycle, for selected detachments. Fall and spring terms. M., W., F., 4:45.

Students in course 2 and 3 are selected by the Commandant from those reasonably proficient in course 1.

4. **Musketry and Target Practice.** Theoretical instruction. Position and aiming drills. Winter term, M., W., 12. Armory.

Gallery and range practice, 200 and 300 yards. Spring term. Hours to be arranged.

The marksman's badge, presented by Gen. A. C. Barnes of the Board of Trustees, will be conferred on each student qualifying as marksman ; a bar to be added for each subsequent qualification.

5. **Military Science.** Lectures and text book. Winter. T., Th., 12.

Any member of the Corps who has satisfactorily performed all the duties required for the first year, and who is qualified therefor, may be selected for the place of a commissioned officer, if needed. For the performance of his duties as a commissioned officer in the junior or senior year, he is entitled, if duly registered, to credit of three recitation hours a week for the fall and spring terms, and, at graduation, he may receive a certificate of military proficiency with his diploma, provided he has also completed the course in military science prescribed for the winter term of the senior year.

On the graduation of each class, the names of such students as have shown special aptitude for military service will be reported to the *Adjutant General of the Army* and to the Adjutant General of the State of New York, and the names of the three most distinguished students in military science and tactics will, when graduated, be inserted in the *U. S. Army Register* and published in general orders from headquarters of the army.

HYGIENE AND PHYSICAL CULTURE.

An introductory or general course of lectures is given each year to all freshmen in the University. Advanced courses of instruction are also given each year. These take up the various problems of physical culture, and consider the auxiliary appliances for their solution. Special attention is given to the needs of students intending to teach.

For the physical training and development of male students there has been provided a Gymnasium, thoroughly equipped with baths, dressing-rooms, and all the apparatus usually found in a well-furnished gymnasium. This is under the charge of an experienced physician, the Professor of Physical Culture and Director of the Gymnasium, who examines every male student at his entrance and at stated intervals thereafter, learns the condition of his health, takes his physical measurements, and prescribes such exercises 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 might be attended with risk.

Special provision has also been made for the physical training of women in the Sage College Gymnasium. The department has organized a system of exercises calculated to maintain and develop the physical strength of young women, and at the same time prevent any of the evils which might arise from exercises that are too violent or too long continued.

The exercises thus provided for are obligatory upon all members of the freshman or sophomore classes living in the college, subject to exceptions in particular cases by the Instructor in charge.

The building erected for the purposes of the GYMNASIUM AND ARMORY is situated at the extreme southern end of the campus. The main portion is of brick, one hundred and fifty feet long, sixty feet wide, and fifty feet high. The Annex joining the main hall on the south, is a three-storied building, having an area of seventy-four by eighty feet. The main building, with the exception of a small portion that is set apart for an office and a military store-room, is used for gymnastics and military drill. This contains the arms and equipment of the cadet corps, and a carefully selected supply of the most improved gymnastic apparatus and appliances for both individual and class work. The hall is heated by steam and lighted by electricity, and gives a clear space of floor room in the gymnasium of one hundred and thirty-five by sixty feet. The Annex contains the offices of the Department of Physical Culture, examination room, bath rooms, swimming bath, lavatory, closets, general repair room, baseball batting cage, crew practice room, and dressing-rooms which contain locker accommodations for about one thousand students.

Athletics.—The Cornell Athletic Association, composed of representatives from the trustees, faculty, and student athletic organizations, was incorporated in June, 1889. A standing committee on athletics, including the faculty members of the association, has also been appointed from the faculty. It is hoped that the coöperation of these various interests, and the existence of a permanent organization, may tend to produce a greater steadiness in the management of athletics, and permit of some continuity in the transmission of athletic methods and traditions.

The athletic ground called Percy Field, after the son of one of the donors, was secured and equipped for out-of-door sports by the joint gift of Mr. J. J. Hagerman and Mr. W. H. Sage. The field has an area of nearly ten acres, including a quarter-mile cinder track, the Witherbee Memorial club-house, and a grand stand seating about twelve hundred persons, and is arranged for football, baseball, tennis, and general athletics.

The following courses are offered in 1899–1900 :

1. **Hygiene and Physical Culture.** Required of freshmen in Agriculture, Architecture, Civil Engineering, Mechanical and Electrical Engineering. Lectures. Fall term. One hour. Hours to be assigned. Professor HITCHCOCK.

2. **Hygiene and Physical Culture.** Open to all students. Fall and winter terms. Two hours. Lectures same as in course 1. Hours to be arranged. Professor HITCHCOCK.

4. **Special Medical Advice to Indigent Students.** Gymnasium office. Daily, from 12 to 1, throughout the year. Professor HITCHCOCK.

5. **Gymnastic Exercises.** Aesthenic class, consisting of men who in the judgment of the Director—which judgment is founded on a physical examination,—are imperatively in need of a special physical development. Fall and spring terms. The work consists of class and squad work, special developing exercises, and exercises prescribed by the Director for individual deformity or immaturity. Daily, ex. S., 5–6. Mr. LANNIGAN.

6. **Gymnasium exercises.** Winter term. Freshmen 4–6. M., T., Th., F. Optional class on W. and S., 5. Special exercises for individuals during the forenoon at hours to be arranged. Mr. LANNIGAN.

9. **Practical gymnastics** open only to juniors and seniors. Counting two hours. Hours to be arranged. Professor HITCHCOCK.

10. **Women's Gymnastic exercise.** Freshmen and Sophomores. Instruction is given in class exercises, with and without apparatus, throughout the year. Gymnasium for Women. Daily, ex. S. Miss CANFIELD.

11. **Advanced practical gymnastics.** Readings, and practical exercises. Open only to women who have completed course 10 or a substantial equivalent. Two hours. Hours to be arranged. Miss CANFIELD.

11. **Physical examinations,** women of all classes, by special appointment. Office of the Gymnasium for Women. Miss CANFIELD.

THE COLLEGE OF LAW.

FACULTY.

JACOB GOULD SCHURMAN, A.M., D.Sc., LL.D., *President.*
FRANCIS MILES FINCH, A.B., LL.D., *Director of the College, Dean of the Faculty, and Professor of the History and Evolution of Law.*
ERNEST WILSON HUFFCUT, B.S., LL.B., *Professor of Law.*
CUTHBERT WINFRED POUND, *Professor of Law.*
WILLIAM ALBERT FINCH, A.B., *Secretary of the College, and Professor of Law.*
EDWIN HAMLIN WOODRUFF, LL.B., *Professor of Law.*
HENRY STEPHEN REDFIELD, A.M., *Professor of Practice and Procedure.*

FREDERICK DIAMOND COLSON, B.L., LL.B., *Assistant in Procedure.*
ALEXANDER H. R. FRASER, LL.B., *Librarian.*

SPECIAL LECTURERS.

JUDGE ALFRED C. COXE, A.M. (of the United States District Court). *Lecturer on the Law of Shipping and Admiralty.*
ALBERT H. WALKER, LL.B. (of the New York Bar), *Lecturer on the Patent Laws of the United States.*

THE COLLEGE YEAR.

The college year for 1899–1900 begins Monday, September 25, 1899, and closes Thursday, June 21, 1900, and is divided into three terms with two intermissions of about ten days each at Christmas and in the Spring. Students should present themselves promptly for registration on the dates fixed for that purpose in the calendar. Permits for late registration will be granted only for the most urgent reasons.

ADMISSION TO THE COLLEGE.

[*For details as to subjects and methods of admission, see below and pages 33–53.*

For admission to the first year class, communications should be addressed to the Registrar. See below and pages 33–53.

For admission to advanced standing from other colleges and universities, communications should be addressed to the College of Law. See below and pages 52 and 53.]

Admission to the First-Year Class.—Applicants for admission to the first-year class as candidates for a degree must be at least eighteen years of age, and must have had a previous education at least equivalent to a high school course.* The educational requirement may be satisfied by the presentation of certificates, or by examinations, as follows:

A. Admission on Diploma or Certificate.—The following applicants will be admitted without examination, upon the presentation of satisfactory certificates or diplomas:

(1) Graduates of universities and colleges, or students who have met the entrance requirements and satisfactorily completed one year of study in any university or college of approved standing.

(2) 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.

(3) Holders of an academic diploma, or any sixty-count academic certificate, issued by the Regents of the State of New York.

Applications for admission on a diploma or certificate issued by a public or private high school or academy must be sent in advance to the Registrar of the University by the Principal of the school issuing the diploma and not by the candidate himself, and must be accompanied by full and specific information with regard to the course of study, the time given to each subject and the amount of work covered in each subject. Where a catalogue or circular is issued by the school this should also be filed with the application. Blank forms of certificate may be obtained of the Registrar.

B. Admission on Examination.—All other applicants, if candidates for a degree, are required to pass a satisfactory examination in the subjects required for admission to the Academic Department. See pages 33, 37 and 45.

* "*Resolved*, That the American Bar Association is of the opinion that before a student commences the study of law, it is desirable that he should have received a general education at least equivalent to a high school course, and that persons who have not completed the equivalent of such a course should not be admitted into law schools as candidates for a degree." *From the Proceedings of the American Bar Association for 1897*, p. 33.

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 above for admission to the first-year class, and must pass a satisfactory examination in all the law work of the first year, or offer satisfactory certificates of the completion of such work in another law school whose entrance requirements are equal to those of this college and whose course of study requires three years for its completion. Certificates of law work must specify the number of class-room hours given to each subject and the text-books used, and must be forwarded directly from an officer of the school issuing the certificate to the Secretary of the College of Law.

Admission as Special Students.—Applicants who are twenty years of age may, in the discretion of the Faculty, be admitted to the college without examination as special students, not candidates for a degree, and may elect such work as they desire, subject to the permission of the professors whose subjects are selected. This privilege will be granted only upon written application specifying the age of the applicant, the amount of preparatory study or of previous law study, and accompanied if practicable by certificates from the preparatory school, law school, or attorney, under whose direction such studies have been pursued. New York students will not be admitted as special students unless they present a Regents' Law Student Certificate. Applicants are advised to correspond with the Secretary of the College of Law before presenting themselves in person. In order to remain in the college special students must pass satisfactory examinations in at least ten hours of work (equal to two class-rooms hours a day). Special students may be admitted as candidates for a degree if they pass the required entrance examinations before the beginning of their second year in the College.

Admission of Students from the Academic Department.—Juniors and Seniors in good standing in the Academic Department of the University are allowed, with permission of the Faculty of Arts and Sciences and with the consent of the Faculty of the College of Law in each case, to elect studies in the College of Law which shall count toward graduation both in the academic course and in the College; but the sum total of hours so elected cannot exceed the number required for one year's work in the College of Law, or exceed nine hours per week in any term. Under this provision a student may complete a general course of University study and the law course in six years.

COURSE OF INSTRUCTION.

The course of instruction extends through three years of nine months each.* The object of the college is to afford a thorough training in the fundamental principles of Anglo-American law, both the substantive law and the law of procedure. Instruction is carried on by the study of selected cases, text-books, and syllabi, by lectures and exposition, and by colloquy and discussion. In addition to the courses given by the resident Faculty, provision is made each year for courses of lectures by eminent specialists in the profession.

1st Year.	No. Course.	1st Term.	2d Term.	3d Term.
Contracts	1	4	4	4
Torts	2	3	3	3
Criminal Law and Procedure	3	2	2	2
Real and Personal Property	4	3	3	3
Civil Procedure	5	2	2	2
Junior Year.	No. Course.	1st Term.	2d Term.	3d Term.
Sales Real Property	20–21	3	3	3
Equity Jurisdiction	22	3	3	3
Agency Domestic Relations Insurance	23–25	2	2	2
Evidence	26	2	2	2
Constitutional Law	27	1	1	1
Civil Procedure	28	2	2	2
College Court	29	1	1	1
Senior Year.	No. Course.	1st Term.	2d Term.	3d Term.
Real Property, Mortgages Wills and Administration	30	2	2	2
Partnership and Corporations	31–32	3	3	3
Quasi-Contracts Carriers	33–34	2	2	2
Bills, Notes and Checks	35	2	2	–
International Law	36	–	–	2
Civil Procedure	37	3	3	3
Statute of Frauds, Insolvency, Bankruptcy, Practical Suggestions for Preparation and Trial of Causes, Legal Ethics, History and Evolution of the Law.	38–39	2	2	2
College Court	40	1	1	1

*"*Resolved*, That the American Bar Association approves the lengthening of the course of instruction in law schools to a period of three years, and that it expresses the hope that as soon as practicable a rule may be adopted in each state, which will require candidates for admission to the bar to study law for three years before applying for admission."—*From the Proceedings of the American Bar Association for 1897, p. 31.*

First Year.

Boardman A.

1. **Contract.** Fall, winter and spring terms. Huffcut's Anson on Contract; Huffcut and Woodruff's American Cases on Contract. (Includes Hypothetical Cases. One hour.) T., W., Th., F., 9, Professor WOODRUFF.

2. **Torts.** Fall, winter and spring terms. Ames's and Smith's Cases on Torts. 2 vols. (Includes Hypothetical Cases. One hour.) M., W., F., 10, Professor HUFFCUT.

3. **Criminal Law and Procedure.** Fall, winter and spring terms. Clark's Criminal Law; Fisher's Cases on Criminal Law; New York Penal Code and Code of Criminal Procedure. T., Th., 11, Professor POUND.

4. **Property.** Fall, winter and spring terms. Personal Property; Real Property begun. Syllabus and Parts I, II and III of Finch's Selected Cases on the Law of Property in Land; selected cases on the law of Personal Property. M., W., F., 11, Professor W. A. FINCH.

5. **Civil Procedure.** Fall, winter and spring terms. Introductory lectures on the relation of procedure to substantive law, and the development of the reformed procedure; N. Y. Code of Civil Procedure, first five chapters, and selected cases on topics included therein; Perry's Common Law Pleading taught with the special purpose of showing the relation of common law pleading and forms of actions, to the reformed procedure. T., Th., 10, Professor REDFIELD.

6. **Hypothetical Cases.** Fall, winter and spring terms. Argument and discussion of cases by members of the classes in Contract and Torts. Professors HUFFCUT and WOODRUFF. [This course is a part of the required work in Contract and Torts.]

Junior Year.

Boardman B.

20. **Property.** Half year. Real Property continued. Finch's Selected Cases on the Law of Property in Land. M., W., F., 10, Professor W. A. FINCH.

21. **Sales.** Half year. Burdick's Cases on the Law of Sales. M., W., F., 10, Professor W. A. FINCH.

22. **Equity Jurisdiction.** Fall, winter and spring terms. Syllabus and selected cases. M., W., F., 11, Professor HUFFCUT.

23. **Agency.** Fall term. Huffcut's Elements of the Law of Agency; Huffcut's Cases on Agency. T., Th., 11, Professor WOODRUFF.

24. **Domestic Relations and the Law of Persons.** Winter term. Woodruff's Cases on Domestic Relations and the Law of Persons. T., Th., 11, Professor WOODRUFF.

25. **Insurance.** Spring term. Elliott's Outline of Insurance; Elliott's Cases on Insurance. T., Th., 11, Professor WOODRUFF.

26. **Evidence.** Fall, winter and spring terms. Thayer's Cases on Evidence. (Chase's Stephen's Digest of the Law of Evidence, 2d Ed., recommended for collateral study.) T., Th., 9, Professor POUND.

27. **Constitutional Law.** Fall, winter and spring terms. Cooley's Principles of Constitutional Law; Thayer's Cases on Constitutional Law (selections). W., 9, Professor POUND.

28. **Civil Procedure.** Fall, winter and spring terms. N. Y. Code of Civil Procedure, chapters 6 to 13 inclusive; Bryant's Code Pleading and selected cases. The preparation of pleadings and motion papers by every member of the class, on hypothetical statements of facts, is part of the required work; the form, sufficiency, etc., of the pleadings submitted being discussed in the class-room, and argument of motions being presented by members assigned for this work. M., F., 9, Professor REDFIELD.

29. **College Court.** Fall, winter and spring terms. One hour.

Senior Year.

Boardman C.

30. **Property.** Fall, winter and spring terms. Property continued: Mortgages and Liens; Wills. Chaplin on Wills. T., Th., 11. Professor W. A. FINCH.

31. **Partnership.** Fall term. Mechem's Elements of Partnership; Mechem's Cases on Partnership. M., W., F., 11, Professor POUND.

32. **Private Corporations.** Winter and spring terms. Smith's Cases on Private Corporations (Clark on Corporations recommended for collateral study). M., W., F., 11, Professor POUND.

33. **Quasi-Contracts.** Half year. Keener's Quasi-Contracts and selected cases. M., 9, F., 10, Professor WOODRUFF.

34. **Carriers.** Half year. McClain's Cases on Carriers. M., 9, F., 10, Professor WOODRUFF.

35. **Bills, Notes and Checks.** Fall and winter terms. Huffcut's Statutes, Cases and Authorities on Negotiable Instruments. T., Th., 10, Professor HUFFCUT.

36. **International Law.** Spring term. Syllabus and Lectures. T., Th., 10, Professor HUFFCUT.

37. **Civil Procedure.** Fall, winter and spring terms. N. Y. Code

of Civil Procedure, chapters 14 to 19 inclusive, special attention being given to chapters 15, 16 and 18 with selected cases on topics included therein ; Redfield's Law and Practice of Surrogate's Courts. Preparation of papers, on hypothetical statements of facts, in the actions and special proceedings, the procedure in which is regulated by the chapters last mentioned, is part of the required work. T., W., Th., 9, Professor REDFIELD.

38. **Statute of Frauds. Insolvency and Bankruptcy. Practical Suggestions for the Preparation and Trial of Causes. Legal Ethics.** Half year. Lectures. M., W., 10, Dean F. M. FINCH.

39. **History and Evolution of Law.** Half year. The course at present consists of the following Lectures : 1. Introductory. 2. Rudimental Relations. 3. The Patriarchal System. 4. Possession and Tort. 5. Status and Sovereignty. 6. Transfers of Possession. 7. The Mosaic Law. 8. The Laws of Menu. 9. Lycurgus and Solon. 10. The Salic Law. 11. The Twelve Tables. 12. The Praetor and his Ethics. 13. Justinian. 14. The Coming of Contract. 15. The Roman Evolution. 16. Anglo-Saxon Law. 17. The Feudal System. 18. Seisin. 19. Decay of Feudalism. 20. Sir Edward Coke. 21. The Common Law. M., W., 10, Dean F. M. FINCH.

40. **College Court.** Fall, winter and spring terms. One hour.

Examinations.

Examinations are held at the end of each term. The continuance of a student in the college is dependent upon the manner in which he passes such examinations. Furthermore the Faculty do not hesitate to drop a student from the rolls at any time in the year on becoming satisfied that he is neglecting his work.

College Court.

The College Court consists of the Faculty Division, an Appellate Division selected from the senior class, and a Senior Division, Junior Division and First Year Division. The First Year Division argues hypothetical cases in the class-room. The Junior and Senior divisions are divided into Club Courts for the argument of causes. Appeals lie from the Club Courts to the Appellate Division and from the Appellate Division, in certain cases, to the Faculty Division. All students are required to take part in these courts.

Civil Procedure.

The underlying purpose of the entire course in civil procedure is to equip the student for the direct practical application of his knowledge

of substantive law; to give him, so far as is possible under the differing conditions, the same actual work which is, or may be, given in an attorney's office; and, at the same time, to enable him to gain that conception and knowledge of procedure as a system, and its relation to substantive law, which are not usually obtained in such an office.

To accomplish this purpose, instruction and practical work proceed together. The preparation of pleadings, motion papers, petitions, etc., in an action or special proceeding under consideration, is not only required; but papers showing marked defects are discussed in the class-room; criticisms asked for; defects pointed out; and the essentials of a proper pleading, petition or other paper stated. The official court rules are strictly complied with, when possible, and the various steps in an action or special proceeding are taken in the same way and in the same order, as if taken in actual practice.

Courses in the Academic Department. Students in the College of Law may, with permission of the Faculty of the College of Law and with the consent of the Academic Faculty of the University in each case, elect courses in the Academic Department, without the payment of any extra fee.

Some students, who are not graduates of universities or colleges, prefer to take four years for the completion of the law course, giving ten or twelve class-room hours each week to law studies and five or more to studies in the other departments. The Law Faculty are always ready to advise such students in the selection of non-professional courses.

In the Department of Elocution and Oratory special classes are formed for the benefit of members of the College of Law who desire to elect the course in Public Speaking. A description of the courses will be found at pp. 103–106. The following are the courses offered to law students: (1) Public Speaking; (2) Oratory; (3) Argumentation; (4) Extempore Speaking.

EQUIPMENT.

Boardman Hall. Boardman Hall is situated directly opposite the general library building and was erected for the exclusive use of the College of Law. It is a large three-story structure, 202 by 58 feet, built of Cleveland sandstone with interior finish of oak, and practically fire-proof. On the first floor are three commodious lecture rooms and necessary cloak rooms. On the second floor are the offices of the several resident professors and rooms for the use of the club courts. On the third floor are the library rooms.

The Law Library. The library of the College of Law numbesr

27,500 volumes. 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 research by advanced students. In reports of the federal courts, reports of the several American state jurisdictions, and in English, Scotch, Irish and Canadian reports, the law library is practically complete to date. The other English speaking countries are largely represented. The library also possesses a full complement of text-books and statutes, and complete sets of all the leading law periodicals in English.

GRADUATION FROM THE COLLEGE.

The degree of Bachelor of Laws (LL.B.) is conferred upon all students who have satisfactorily completed the work of the undergraduate 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) without special permission of the Faculty. No student is allowed to graduate unless he has been in residence at least one year.

Certificates of Attendance.—Each student who has been in regular attendance upon the College, whether entitled to a degree or not, may, on application to the Faculty, receive an official certificate of attendance, which states the time of his attendance and, if desired, the degree of his attainments. Time certificates required for admission to the bar examinations in the State of New York will not be issued unless the applicant has taken at least nine hours of law work each week during the time for which such certificate is asked to be issued. If less than nine hours a week be taken, certificates will be issued specifying the hours and subjects taken.

SCHOLARSHIPS AND PRIZES.

Law Thesis Prize.—A fund of two thousand dollars has been given by a friend of the College, the income of which is devoted each year, under the direction of the Law Faculty, either for prizes for graduating theses, or for printing theses of special merit, or for both such purposes. The way in which the income is to be applied is determined each year upon presentation of theses. All theses submitted for this prize must be delivered to the Secretary on or before May 1st.

See also pages, 58–63.

FEES AND EXPENSES.

Tuition Fees.—The fee for tuition for all law students, except special and optional students, is $100 a year, payable as follows: $40 at the beginning of the first term; $35 at the beginning of the second term; and $25 at the beginning of the third term. The fee for special and optional students in law is $125 a year, payable as follows: $50 at the beginning of the first term; $40 at the beginning of the second term; and $35 at the beginning of the third term. These fees must be paid at the office of the Treasurer within twenty days after registration.

A fee of $5 to cover expenses of graduation, degrees, etc., is charged to each person taking the baccalaureate degree. This fee must be paid at least ten days before Commencement.

Tuition is free to students with State scholarships.

Expenses.—The following is a fair estimate of the yearly expenses:

Tuition	$100 to $125
Room, board, lights, fuel, and laundry	160 to 325
Text-books	40 to 50
Total	$300 to $500

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 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. The following announcement of the Medical College except where the contrary is specifically stated refers to the course as given in New York City.

FACULTY.

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

WILLIAM MECKLENBURG POLK, M.D., LL.D., Dean and Professor of Gynæcology and Obstetrics, Gynæcologist to Bellevue Hospital and Obstetrician to Emergency Lying-in Hospital.

LEWIS ATTORBURY STIMSON, M.D., Professor of Surgery, Surgeon to Bellevue and New York Hospitals.

RUDOLPH AUGUST WITTHAUS, A.M., M.D., Professor of Chemistry, Physics, and Toxicology.

WILLIAM GILMAN THOMPSON, Ph.B., M.D., Professor of Medicine, Physician to Presbyterian and Bellevue Hospitals.

GEORGE WOOLSEY, M.D., Professor of Anatomy and Clinical Surgery, Surgeon to Bellevue Hospital.

HENRY P LOOMIS, M.D., Professor of Materia Medica, Therapeutics and Clinical Medicine, Physician to the New York and Bellevue Hospitals.

JAMES CLIFTON EDGAR, Ph.B., A.M., M.D., Professor of Obstetrics and Clinical Midwifery, Physician to the Mothers' and Babies' Hospital and to Maternity Hospital.

AUSTIN FLINT, M.D., LL.D., Professor of Physiology.

FREDERIC SHEPARD DENNIS, A.B., M.D., Professor of Clinical Surgery, Surgeon to Bellevue and St. Vincent's Hospitals.

FREDERICK WALKER GWYER, M.D., Professor of Operative and Clinical Surgery, Surgeon to Bellevue Hospital.

IRVING SAMUEL HAYNES, Ph.B., M.D., Professor of Practical Anatomy, Surgeon to Harlem Hospital.
JAMES EWING, M.D., Professor of Pathology.

Clinical Professors and Others.

JOSEPH EDCIL WINTERS, M.D., Professor of Diseases of Children, Visiting Physician to Willard Parker Hospital.
CHARLES STEDMAN BULL, A.M., M.D., Professor of Ophthalmology, Visiting Surgeon to New York Eye and Ear Infirmary.
NEWTON MELMAN SHAFFER, M.D., Professor of Orthopædic Surgery, Surgeon in Chief to New York Orthopædic Dispensary and Hospital.
GORHAM BACON, M.D., Professor of Otology, Aural Surgeon to New York Eye and Ear Infirmary.
CHARLES LOOMIS DANA, M.D., Professor of Diseases of the Nervous System, Physician to Bellevue Hospital, Neurologist to Montefiore Home.
SAMUEL ALEXANDER, A.M., M.D., Professor of Diseases of the Genito-Urinary System, Surgeon to Bellevue Hospital.
GEORGE THOMSON ELLIOT, A.B., M.D., Professor of Dermatology, Assistant Physician to Skin and Cancer Hospital.
ALLAN McLANE HAMILTON, M.D., Professor of Mental Diseases, Consulting Physician Manhattan State Hospital [for the insane].
CHARLES HUNTOON KNIGHT, A.M., M.D., Professor of Laryngology, Surgeon to Manhattan Eye and Ear Hospital, Throat Department.
ALEXANDER LAMBERT, A.B., Ph.B., M.D., Professor of Clinical Medicine, Instructor in Physical Diagnosis, Physician to Bellevue Hospital.
FRANCIS WISNER MURRAY, A.B., M.D., Professor of Clinical Surgery, Surgeon to St. Luke's and New York Hospitals.
CHARLES EDWARD NAMMACK, Ph.B., M.D., Professor of Clinical Medicine, Physician to Bellevue Hospital.
FREDERICK KAMMERER, M.D., Professor of Clinical Surgery, Surgeon to German and St. Francis Hospitals.
IVIN SICKLES, M.S., M.D., Assistant Professor of Chemistry and Physics.

Instructors.

PERCIVAL R. BOLTON, M.D., Instructor in Surgery, Assistant Surgeon to Bellevue Hospital.
BERTRAM HENRY BUXTON, M.D., Instructor in Bacteriology.

DEVER SMITH BYARD, M.D., Instructor in Medicine.
CHARLES NICOLL BANCKER CAMAC, M.D., Instructor in Clinical Microscopy.
WARREN COLEMAN, A.B., M.D., Instructor in Materia Medica and Therapeutics and in Clinical Medicine, Physician to City Hospital.
LEWIS ATTERBURY CONNER, M.D., Instructor in Medicine, Attending Physician to Hudson Street Hospital, Assistant Pathologist to New York Hospital.
JEREMIAH SWEETSER FERGUSON, M.S., M.D., Instructor in Histology.
FRANK SIDNEY FIELDER, Ph.B., M.D., Assistant Demonstrator of Anatomy.
GEORGE DEMPSTER HAMLEN, A.M., M.D., Instructor in Gynæcology and Obstetrics.
JOHN AUGUSTUS HARTWELL, Ph.B., M.D., Instructor in Physiology.
JAMES CHEW JOHNSTON, A.B., M.D., Assistant Instructor in Pathology.
EDWARD L. KEYES, Jr., M.D., Assistant Demonstrator of Anatomy.
GUY DAVENPORT LOMBARD, M.D., Assistant Instructor in Histology.
CHARLES NORRIS, M.D., Instructor in Pathology of Infectious Diseases.
HENRY SALEM PASCAL, M.D., Assistant Instructor in Histology.
CHARLES RUSSELL LOWELL PUTNAM, A.B., M.D., Instructor in Operative Surgery.
LOUIS WARREN RIGGS, A.M., Ph.D., Instructor in Chemistry and Physics.
JOHN ROGERS, Jr., A.B., M.D., Instructor in Surgery, Assistant Demonstrator of Anatomy.
EDMUND PENDLETON SHELBY, A.B., M.D., Instructor in Materia Medica and Therapeutics.
OTTO HENRY SCHULTZE, A.B., M.D., Instructor in Pathology.
WILLIAM FLETCHER STONE, Ph.B., M.D., Instructor in Anatomy and Assistant Demonstrator of Anatomy.
BENJAMIN TROWBRIDGE TILTON, A.B., M.D., Instructor in Surgery.
GEORGE GRAY WARD, Jr., M.D., Instructor in Obstetrics.

Clinical Instructors.

JOHN ASPELL, A.B., M.D., Clinical Instructor in Gynæcology, Visiting Gynæcologist to St. Vincent's Hospital.

CHARLES CLIFFORD BARROWS, A.M., M.D., Clinical Instructor in Gynæcology, Assistant Gynæcologist to Bellevue Hospital.

FOLLEN CABOT, JR., M.D., Clinical Instructor in Diseases of the Genito-Urinary System.

COLEMAN WARD CUTLER, A.B., M.D., Clinical Instructor in Ophthalmology, Assistant Surgeon to New York Eye Infirmary, Attending Ophthalmic Surgeon to St. Luke's Hospital.

MARTIN JOHN ECHEVERRIA, M.D., Clinical Instructor in Diseases of the Genito-Urinary System.

PATRICK HENRY FITZHUGH, M.D., Clinical Instructor in Orthopædics, Assistant Surgeon to New York Orthopædic Dispensary and Hospital.

JOSEPH FRAENKEL, M.D., Clinical Instructor in Diseases of the Nervous System.

WILLIAM TRAVIS GIBB, B.S., M.D., Clinical Instructor in Gynæcology.

ARCHIBALD EZEKIEL ISAACS, M.D., Clinical Instructor in Surgery.

THURSTON GILMAN LUSK, M.D., Clinical Instructor in Dermatology, Dermatologist to the Out-door Department of Roosevelt Hospital.

JAMES EDWARD NEWCOMB, A.B., M.D., Clinical Instructor in Laryngology, Attending Laryngologist to Demilt Dispensary, Assistant Physician (throat division) to Roosevelt Out-Patient Department.

WILLIAM SHANNON, M.D., Clinical Instructor in Diseases of Children.

FRANKLIN MOORE STEPHENS, M.D., Clinical Instructor in Otology.

GEORGE PEASLEE SHEARS, M.D., Clinical Instructor in Obstetrics, Assistant Attending Physician Mothers' and Babies' Hospital.

GEORGE KNOWLES SWINBURNE, A.B., M.D., Clinical Instructor in Diseases of the Genito-Urinary System.

HENRY HOWARD WHITEHOUSE, Ph.B., M.D., Clinical Instructor in Dermatology, Assistant Surgeon to New York Skin and Cancer Hospital, Dermatologist to Demilt Dispensary.

JOHN McGAW WOODBURY, M.D., M.R.C.S., Instructor in Orthopædic Surgery.

Clinical Assistants.

ROBERT STAUNTON ADAMS, A.M., M.D., Clinical Assistant in Diseases of Children.

HENRY M. ARCHER, M.D., Clinical Assistant in Surgery.
RUSSELL BELLAMY, M.D., Clinical Assistant in Medicine and Therapeutics.
WILLIAM BEDFORD BROWN, M.D., Clinical Assistant in Dermatology.
EARLE CONNOR, M.D., Clinical Assistant in Otology.
WILLIS SCOTT COOKE, M.D., Clinical Assistant in Diseases of Children.
ROBERT MORRIS DALEY, M.D., Clinical Assistant in Diseases of the Nervous System.
GEORGE SLOAN DIXON, M.D., Clinical Assistant in Otology.
WALTER ADAMS DUNCKEL, M.D., Clinical Assistant in Diseases of Children.
JOSEPH ALOYSIUS KENEFICK, M.D., Clinical Assistant in Laryngology.
LOUIS JACOB JOSEF MUSKENS, M.D., Demonstrator of Pathology of the Nervous System.
LOUIS NEUMANN, M.D., Assistant in Physiology.
ROBERT GRIGG REESE, Ph.G., M.D., Clinical Assistant in Ophthalmology, Assistant Surgeon in New York Eye Infirmary.
MAX G. SCHLAPP, M.D., Clinical Assistant in Diseases of the Nervous System.
GEORGE DE FOREST SMITH, M.D., Clinical Assistant in Mental Diseases.
WILLIAM FLETCHER STONE, Ph.B., M.D., Clinical Assistant in Surgery.

Staff of Instruction at Ithaca.

GEORGE CHAPMAN CALDWELL, B.S., Ph.D., Professor of Chemistry.
BURT GREEN WILDER, B.S., M.D., Professor of Physiology.
EDWARD LEAMINGTON NICHOLS, B.S., Ph.D., Professor of Physics.
SIMON HENRY GAGE, B.S., Professor of Microscopy, Histology, and Embryology.
VERANUS ALVA MOORE, B.S., M.D., Professor of Pathology and Bacteriology.
WILLIAM RIDGELY ORNDORFF, A.B., Ph.D., Assistant Professor of Organic Chemistry.
JOSEPH ELLIS TREVOR, Ph.D., Assistant Professor of Chemistry.
PIERRE AUGUSTINE FISH, D.Sc., D.V.M., Assistant Professor of Comparative Physiology and Materia Medica.

BENJAMIN FREEMAN KINGSBURY, A.B., Ph.D., Assistant Professor of Microscopy, Histology and Embryology.
LUZERNE COVILLE, B.S., M.D., Lecturer and Demonstrator in Anatomy.
PAUL RICHARD BROWN, M.D., Lecturer in Medicine, Surgery, Therapeutics, and Obstetrics.
EMILE MONIN CHAMOT, B.S., Ph.D., Instructor in Toxicological Chemistry.
THEODORE WHITTLESEY, Ph.D., Instructor in Chemistry.
RAYMOND CLINTON REED, Ph.B., Instructor in Pathology and Bacteriology.
HECTOR RUSSELL CARVETH, Ph.D., Instructor in Chemistry.
FLOYD ROBINS WRIGHT, A.B., Instructor in Bacteriology.
CHARLES MELLIN MIX, A.B., Instructor in Anatomy.
AGNES MARY CLAYPOLE, Ph.D., Assistant in Microscopy, Histology and Embryology.
BURTON DORR MYERS, Ph.B., Assistant in Materia Medica.
JOHN EDGAR TEEPLE, B.S., Assistant in Physiological Chemistry.
WILLIAM FAIRFIELD MERCER, Ph.B., Assistant in Microscopy, Histology and Embryology.
EDITH JANE CLAYPOLE, Ph.B., M.S., Assistant in Physiology.
SAMUEL HOWARD BURNETT, A.B., M.S., Assistant in Pathology.
CHARLES F FLOCKEN, Assistant in Microscopy, Histology and and Embryology.
ROY MANDEVILLE VOSE, Assistant Demonstrator in Physiology.

Secretary to the Faculty—JOHN ROGERS, JR., A.B., Ph.B., M.D.
Clerk of the College—J. THORNE WILSON, 414 East 26th Street.

The Trustees have been enabled to carry out a long cherished wish by the receipt of a gift ample for the establishment and maintenance of a Medical Department of the University. A faculty has been appointed composed of men who have for years been prominent on the teaching staff of two other medical colleges of New York City, reinforced by a number of other physicians and surgeons who are connected with important hospitals, so that in the experience of its teachers and in its clinic facilities the new college is from the first unsurpassed. Upon this basis it is reasonable to expect that the expressed desire of the donor to elevate medical education and to found a medical college of the highest rank will be realized. Pending the completion of the new college buildings which are now in course of

construction, buildings have been secured temporarily which have long been used for medical instruction and are convenient in situation.

The full attendance in all four years of the course, due to the admission of large numbers of students hitherto in other medical schools, has made possible a complete organization of the College from the outset, with all the fullness and detail of instruction to be found in an old established institution. At the same time the opportunity has been seized of making some important and very desirable changes in prevailing methods of instruction, especially by increasing the amount of bedside teaching.

The standard of medical education has advanced so much in the past decade that a four year course has been prescribed by law for all medical schools in the state of New York. A preliminary college or university training in the liberal arts and sciences is generally recognized as of inestimable advantage. For the benefit of such it has been arranged that students in the Academic Department of Cornell University may elect in the Medical College certain studies, thereby shortening the time required for taking both the A.B. and M. D. degrees to six years. The last two years of the four year medical course must be spent in New York City. The great metropolitan hospitals and dispensaries alone can supply the amount of the varied forms of disease with which it is necessary, by his constant personal observation and contact, to make the student familiar.

The full four years course of the Medical College may be taken in New York, but under those conditions the only degree earned will be that of M.D. Women students must take the first half of the course in Ithaca (where a home is provided in the Sage College for Women) and the last half in New York.

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, 414 East 26th St., New York City. See below and pages 33–53.

For admission to advanced standing from other colleges and universities, communications should be addressed to the Secretary of the college, 414 East 26th St., New York City.

Requirements for Admission.

The laws of New York State require that each student before entering upon the medical course, must file with the executive officer of the faculty a Regents' medical student's certificate.

This certificate is granted by the Regents for 48 counts, as a result of Regents' examinations or on evidence of four years of satisfactory high school work or its equivalent. The credentials should be sent directly to the Regents' office, Albany, N. Y., and application made for a medical student's certificate.

No entrance examination other than that of the Regents is required.

Full information may be obtained by addressing "Examination Department, University of the State of New York, Albany," or "The Secretary of the Medical College in New York City."

(1) Admission to Advanced Standing in the First Year.

Graduates of Cornell, Yale, Harvard, Princeton, University of Pennsylvania, Johns Hopkins, Columbia, University of Michigan and other accredited universities, who have taken either a preparatory medical course or special work in organic and inorganic chemistry, physics, or physiology, will be allowed credit for the work which they have done and may be excused from the recitations upon these subjects, and from the exercises of the chemical laboratory in the first year, provided they pass examinations before the professors of these departments, and provided they give to dissection and advanced laboratory work, in various departments, a full equivalent in hours to the subjects they may have passed by examination. These examinations are held at the opening of the session.

Students who have had training in microscopical technique or in histology will be given advanced work in the histological laboratory,

Students who have already attended courses in other medical colleges may be admitted to advanced standing in the four-years' course of the Cornell University Medical College under the following conditions:

(2) Admission to the Second Year.

Students from other accredited medical colleges desiring to enter the second year of the course must present certificates of attendance in laboratory courses of histology, chemistry, and materia medica corresponding in extent with those described on pages 220 to 222, or they must pass examinations in these branches. They must also show certificates of one year's work in dissection. There will be no other entrance examinations.

(3) Admission to the Third Year.

Students coming from other accredited medical colleges desiring to enter the third year must pass final examinations in the subjects of

anatomy, physiology, chemistry and physics and materia medica and the general principles of therapeutics, medicine, surgergy, obstetrics, physical diagnosis, and must present satisfactory certificates of laboratory instruction in histology, chemistry, pathology and in dissection. In lieu of a certificate of attendance on any laboratory course of the second year students will be obliged to take the course during their third year.

(4) Admission to the Fourth Year.

Students coming from other accredited medical colleges, in which they have already passed three years of study, will be admitted to the fourth year, after presenting satisfactory certificates for all laboratory instruction in histology, chemistry, pathology and dissection, and after passing the final examinations in anatomy, physiology, chemistry, materia medica, hygiene and toxicology, and examinations in medicine, surgery and obstetrics sufficient to show that they are capable of profiting by the clinical work of the fourth year. In liew of certificates of attendance on any laboratory course included in the curriculum of this College, students will be obliged to take the course during the year.

Examinations required of students coming from other colleges are held at the commencemeet of the session, or at the regular examinations held at the close of the preceding college year, or at the end of the session of the summer school.

(5) Holders of Special Degrees.

Graduates of pharmacy or of dental or veterinary or other professional schools, who can present satisfactory evidence of having completed any course of study required in any year of the Cornell Medical College, may upon passing a satisfactory examination be excused from attendance upon instruction in that subject, provided they take equivalent additional work in other branches.

All examinations required of students coming from other colleges may be taken either at the commencement or end of the year they enter, as they may elect.

(6) 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 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, 414 East Twenty-sixth Street, New York City.

REQUIREMENTS FOR ADVANCEMENT IN COURSE.

Students are advanced in course from one year to the next upon passing examinations in the work of that year. As in the academic department of the University, the work of each year is considered final of itself. There is no unnecessary repetition of subjects taught from year to year. Students who have not succeeded in passing all their examinations will be allowed to enter upon the next year's studies, according to the conditions specified for each year of the course as given in the special announcement of the Medical College.

REQUIREMENTS FOR THE DEGREE OF M.D.

1. Candidates for the degree of doctor of medicine must have studied medicine for four full years in an accredited 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 Regents Medical Student's certificate as evidence of having complied with the requirements for admission (see page 199).

4. Candidates must have taken two courses of practical anatomy (see page 205). They must further have taken the regular course of two weeks at the Mothers' and Babies' Hospital or its equivalent in practical obstetrical work.

5. In addition to the yearly examinations above specified for advancement in course candidates must pass, at the end of the fourth year, examinations in medicine, therapeutics, surgery, obstetrics, and gynæcology, including such minor branches as are specified in the curriculum (pp. 219–224).

6. Candidates rejected at the final examination will not be reëxamined until after having completed their fourth year of study.

7. The degree will not be conferred upon any candidate who absents himself from the Public Commencement without the special permission of the Faculty.

8. The Faculty reserves the right to terminate the connection of any student with the institution *at any time* on the ground of what

they may deem moral or mental unfitness for the profession, or improper conduct while connected with the College.

REQUIREMENTS FOR LICENSE TO PRACTICE MEDICINE IN NEW YORK STATE.

All requirements for admission should be filed at least one week before examination. They are as follows:

1. Evidence that applicant is more than twenty-one years of age (Form 1).

2. Certificate of moral character from not less than two physicians in good standing (Form 2).

3. Evidence that the applicant has the general education required preliminary to receiving the degree of bachelor or doctor of medicine in this State (medical student's certificate. See examination handbook of the Regents').

4. Evidence that applicant has studied medicine not less than four full school years of at least nine months each, in four different calendar years, in a medical school registered as maintaining at the time a satisfactory standard. New York medical schools and New York medical students shall not be discriminated against by the registration of any medical school out of the State, whose minimum graduation standard is less than that fixed by statute for New York medical schools.

The increase in the required course of medical study from three to four years, did not take effect till January 1, 1898, and does not apply to students who matriculated before that date and will receive the degree of M.D. before January 1, 1902 (Form 1).

First exemption: "The Regents may, in their discretion, accept as the equivalent for any part of the third and fourth requirement, evidence of five or more years practice of medicine, provided that such substitution be specified in the license."

5. Evidence that applicant "has received the degree of bachelor or doctor of medicine from some registered medical school, or a diploma or license conferring full right to practice medicine in some foreign country" (Form 3 of original credentials).

6. The candidate must pass examinations in anatomy, phsiology 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 materica medica, all the questions submitted to any candidate shall be chosen from those prepared by the board selected by that candi-

date and shall be in harmony with the tenets of that school as determined by its State Board of Medical Examiners."

Second exemption: "Applicants examined and licensed by other State examining boards registered by the Regents as maintaining standards not lower than those provided by this article, and applicants who matriculated in a New York State medical school before June 5, 1890, and who received the degree of M.D. from a registered medical school before August 1, 1895, may, without further examination, on payment of $10 to the Regents and on submitting such evidence as they may require, receive from them an indorsement of their licenses or diplomas, conferring all rights and privileges of a Regents' license issued after examination"

7. A fee of $25 payable in advance.

GENERAL PLAN OF INSTRUCTION.

The first two years of the medical course are devoted mainly to the study of the fundamental medical branches, anatomy, chemistry and physics, physiology and materia medica, and to practical work in the laboratories and to dissection. By the end of the second year the student will have completed the study of these subjects and will have passed his final examination in them. Upon the basis of thorough training in the fundamental medical branches pursued during the first two years of the course, the student is well fitted to undertake the study of the advanced branches. He will then devote the last two years to medicine, surgery, obstetrics, gynæcology, to the treatment of diseases and to the various specialties, and more particularly to the study of those branches in the clinical laboratories, in the dispensaries and in the wards of the hospitals.

The faculty believe that the old method of teaching the practical branches by didactic lectures, has resulted in waste of the student's time and is without corresponding advantage; following this idea, the lectures have been curtailed as far as possible, and the time formerly occupied by lectures is now given to class-room, clinical and bedside instruction.

To take the place of the lectures and to enable the student to acquire an accurate and thorough knowledge of the practical side of medicine and to profit by clinical instruction, systematic recitations have been established.

These recitations commence in the second year and are continued throughout the four years' course. They are conducted by a large corps of instructors, and are based upon the subject matter of prescribed text-books.

During the third year the general principles of medicine, surgery, therapeutics and obstetrics are studied and clinical instruction is given in these branches. A course in physical diagnosis and practical therapeutics is also given.

The study of certain special branches, such as hygiene and toxicology, diseases of children and clinical neurology, is also begun.

During the fourth year the instruction is almost entirely clinical, the classes being divided into sections for bedside instruction in the wards of the various hospitals and for work in the dispensaries.

Clinical microscopy is studied in connection with the medical cases; operative surgery is taught to small classes; practical therapeutics is taught at the bedside and gynæcology in the hospital wards. Students attend cases of labor in connection with their service at the Mothers' and Babies' Hospital, both at the hospital and under proper supervision at the homes of the patients. The various special branches of medicine and surgery are studied clinically, viz.: dermatology, genito-urinary diseasss, laryngology and rhinology, ophthalmology and otology, orthopædics, diseases of children and insanity. The small sections into which the classes are divided afford abundant opportunities of practical work for each student.

The association of women with men in the varions didactic, clinical and laboratory exercises of the third and fourth years has given perfect satisfaction to all concerned. The theoretical objections to their presence with men have not been found in practice.

The courses for the entire four years are given in New York, and the first two years are duplicated at Ithaca. Men students may take half in Ithaca and the other half in New York, or the entire course in New York; women students must take the first two years of the course in Ithaca (where a home is provided for them in Sage College for Women), and the last two years in New York.

METHODS OF INSTRUCTION IN THE SEPARATE BRANCHES OF STUDY.

Anatomy.

Anatomy is taught in the first and second years by lectures, recitations, section demonstrations, and dissection. A review quiz to prepare for state and hospital examinations is held during the fourth year.

Lectures are confined to practical applied anatomy and are given by the Professor of Anatomy once a week to students of the first year and three times a week to students of the second year. In the first

year the lectures embrace the practical anatomy of the bones and joints, following the recitations on these subjects. In the second year, after a short introductory course on embryology, the lectures are devoted to regional, applied, and surgical anatomy the students being already well grounded in descriptive anatomy.

One lecture a week is given during the second year by the Professor of Practical Anatomy on the nervous system, the shape and relations of the viscera, the joints, etc.

Descriptive anatomy is taught by recitations, section demonstrations, and dissection.

Recitations, from standard text-books, are held by the Instructor in Anatomy twice a week for each section of the first-year class and once a week for each section of the second year class. During the first year bones, joints, muscles, arteries, and veins are recited upon; during the second year the viscera and the nervous system. Written reviews are held at intervals under the direction of the Professor of Anatomy, the last of which is a general review or examination of the year's work. In the first year the students of each section begin to recite upon the bones of that part which they are to dissect at the end of the first month, and so on through the second and third months.

Section Demonstrations are conducted by the professors and demonstrators of Practical Anatomy once a week for each section during the first and second years. During the first three months of the first year that part is demonstrated, the bones of which are being studied and which the members of the section are to dissect the next following month. The students are taught how to dissect, what to find and where to find it. After this the joints are demonstrated and a preliminary demonstration of the viscera is given. In the second year, the brain and nervous system, organs of sense, viscera, and perineum are demonstrated.

Dissection.—The dissection of six parts (two courses) is required, and more may be done at the option of the student. Three to five parts may be dissected in the first year; one to three or more in the second year. In the first year, dissection is commenced after the recitations and section demonstrations of the first month have prepared each student for the part assigned, and so on for the first three parts.

In the dissection of the second three parts the work of the first course, including the joints, is reviewed, and in addition the dissection of the viscera and minuter parts is required. Students are examined and marked on the dissection of each part required. Prepared bones are loaned to students during the session, from a large collection kept for this purpose.

Preliminary training in comparative anatomy is very desirable. A *practical* in addition to a *written examination* is held by the professor of anatomy at the end of the second year. At the end of the first year there is a written review or examination on the work of the year.

Physiology.

Instruction in this branch is given by recitations and demonstrations during the entire session to the first and second year students.

Recitations.—The first year students recite twice weekly from a standard text-book, completing the entire subject, except the nervous system and the special senses. During the second year they recite once a week, devote their time to the nervous system and special senses, and review the work of the preceding year. The instructor, by means of fresh dissections, models, and additional explanations, is enabled to make the more difficult portions of the subject comprehensible.

Lectures.—The lectures by the professor are so far as possible experimental and illustrative, particular attention being paid to the practical application of physiological principles of medicine and surgery.

The physiological laboratory is amply provided with models and apparatus for illustration and for original research.

Chemistry, Physics, and Toxicology.

Students of the first year will receive two lectures each week on physics, the divisions of the subject being considered in the following order: General properties of matter and force, mechanics, hydrostatics, pneumatics, optics, electricity, heat and acoustics. The lectures will be abundantly illustrated and the relations of physics to surgery and medicine will be particularly considered. During the second year students will attend two lectures weekly. Organic chemistry will be considered in the earlier part of the term to an extent sufficient to impart a knowledge of the principles of combination of the carbon compounds and the properties and relationships of those which are of phsiological, 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. In these lectures the medical and medico-legal bearings of the subjects will be chiefly considered.

Students of the first year will recite twice each week on physics and the principles of chemistry and mineral chemistry. Those of the second year will recite once weekly on organic and physiological chemistry.

Laboratory instruction will be given students of the first year six hours weekly during one-half of the 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, including mineral poisons.

When the new laboratories will be available students of the second year will receive laboratory instruction equivalent to four hours' laboratory work weekly during one-half the term in physiological chemistry and the chemistry of the organic poisons.

These courses are personally conducted by the Professor of Chemistry and Physics, assisted by the instructors.

First-year students presenting satisfactory evidence of having performed equivalent work in chemistry and physics will be excused from first year work in this department, and be given advanced laboratory work equivalent in hours to that omitted.

Materia Medica and Therapeutics.

Instruction is given in this department by means of lectures, clinical instruction, recitations, and practical laboratory work.

Lectures. These are given by the professor once a week to the second-year students and once a week to the third-year students. They are confined almost exclusively to therapeutics, as it is belived that materia medica can best be taught by recitations and by laboratory work.

The physiological action of drugs will receive special attention and their therapeutic application will be explained, so that the treatment of disease may be on a systematic basis.

Lectures will be given on remedial agencies other than drugs, such as massage, dietetics, climatology, mineral waters, and hydropathy.

Clinical Instruction. A new departure in the teaching of therapeutics will be made by affording the students of the third year opportunity to observe the effects of the different remedies, including electricity, baths, douches, etc., on the natural course of disease. To accomplish this the classes will be divided into small sections and taken by the professor into the wards of Bellevue Hospital. Actual practice is given in the employment and application of the various therapeutic agents used in medicine, such as the hypodermic syringe, aspirators, cups, cauteries, stomach-pump, stupes, and the different varieties of baths and packs. 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 exami-

nation of the patients and to watch the modification of disease produced by the remedies prescribed. The clinical work of the third and fourth years affords abundant opportunities for further training in therapeutics. A general medical clinic will be held by the professor once a week in the amphitheatre of Bellevue Hospital.

Recitations. Students of the second year will recite to the instructors twice a week from a standard text-book. During the third 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 course of laboratory instruction is taken during the first year, and consists of six hours each week for half the year. The class is divided into small sections, and is under the personal supervision of the instructor. The method of instruction is distinctly practical. The student is made familiar by the laboratory work with the physical and chemical properties of drugs. This course includes such subjects as the forms of drugs, their weight and bulk, the measurement of solid and fluid drugs, methods of administering medicines, particularly with reference to appropriate combinations and the demonstration of solubilities. The subject of incompatibilities is clearly demonstrated. Prescription writing is taught throughout the course, and each prescription written is compounded by some member of the section.

The materia medica laboratory is equipped for pharmaceutical instruction, and students are taught by practical exercises in the preparation and compounding of drugs.

The laboratory is provided with a full assortment of crude drugs and the various preparations of the materia medica, also with complete appliances for instruction in the remedial agents which are not medicines. Advanced students will be given opportunity to study experimentally the physiological action of drugs.

Histology.

The work in this department is conducted throughout the first year by means of recitations and laboratory exercises.

Recitations are held throughout the first year on subjects assigned from a standard tex-book on histology.

The recitations are designed to familiarize the student with the theoretical structure of the various tissues and organs prior to the practical demonstration of the microscopic sections.

Laboratory exercises, in two-hour sessions will occupy about ninety hours during the year. The work comprises instruction in the construction and use of the microscope; the preparation, hardening, embedding, cutting, staining and mounting of all the various normal tissues of the body. The primary object of the course is to teach the student by a logical sequence of study and microscopical demonstration the minute anatomy of the human body. Attention is constantly directed to the practical application of this knowledge to the explanation of the phenomena of physiology and to the characteristic appearance of normal tissues as forming the basis for the study of pathology. An examination is held at the close of the course.

Pathology.

The instruction in pathology includes one recitation weekly and attendance upon autopsies in the second year; microscopical and gross demonstrations and lectures upon general and special pathology and upon the bacteriology of the infectious diseases in the third year; and instruction in the technics of post-mortem examinations, with weekly recitations npon the entire subject, in the fourth year.

Microscopical Demonstrations in Pathology.—The student having been prepared for the detailed study of pathology by attendance upon autopsies in the second year, the main branches of the subject are grouped in the third year in order to emphasize the close connection between the gress and microscopical changes in diseased tissues.

The microscopical demonstrations are designed to illustrate the principles of general and special pathology, and constitute the main feature of the instruction in this department during the third year. The specimens studied embrace the topics of inflammation, tumors, auto-intoxication, infectious diseases and diseases of the nervous system and are supplemented by lectures and by special demonstrations by means of charts and photomicrographs.

In the study of the infectious diseases special attention is devoted to pathogenic micro-organisms. The course occupies six hours each week for one-half the year.

Gross Pathology.—Students of the second year are required to attend the autopsies performed by members of the fourth-year class, in order to become acquainted, in a general way, with the gross appearance of diseased organs and to be prepared for the study of clinical medicine.

On the days alternating with the microscopical studies demonstrations of gross pathological specimens are given to students of the third year, on the material collected from the autopsies. With the viscera of each case are presented an epitome of the clinical history, and, as far as possible, frozen sections of the organs, and the attempt is made to explain the course of the disease and the clinical symptoms from the gross and microscopical changes in the altered tissues. It is expected that the student will see the viscera of many of the fatal cases which he has studied in the wards of the hospital.

Gross pathological diagnosis is also taught as a separate branch of the subject, not bearing directly on the clinical aspect of the case.

These demonstrations with recitations occupy six hours each week, each section of the class attending one quarter of the year.

An examination is held at the close of the course.

Post-mortem Examinations.—Students of the fourth year are required to perform autopsies under the direction of the instructor when they receive instruction in the technical procedures required in ordinary and in medico-legal cases.

In the weekly recitations of the fourth year due attention is paid to the review of the work in gross pathology.

Bacteriology.

Bacteriology is taught as a branch of biology to students of the second year. After instruction in the principles of disinfection, the student 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 character; 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. The course occupies six hours each week for one quarter of the year.

During the exercises in gross and microscopical pathology the student is required to make cultivations from the viscera in various infectious diseases and to observe the biological charaeters of the more important pathogenic micro-organisms. This work is supplemented, where necessary. by the use of pure cultures, by the exhibition of aërobic cultures, and, to a limited extent, by animal inoculation.

Advanced Courses..—The abundant facilities of the Loomis Laboratory are open for the use of a limited number of properlv qualified students or practitioners of medicine to pursue advanced courses of study, or original research, under the direction of the Department.

Medicine.*

The Course of Medicine, extending over three years, is so graded that the student pursues a logical sequence of work throughout. No didactic lectures upon Practice of Medicine are delivered, their place being wholly taken by bedside instruction and recitations. The complete course comprises the following subdivisions (the roman numerals indicate the years of the course in medicine, not those of the curriculum):

I. Recitations from an elementary text-book.
   Normal Physical Signs of the Chest.
II. Recitations from an advanced text-book, including written reviews.
   Abnormal Physical Signs of the Heart and Lungs.
   Bedside History-taking.
   Bedside course in Symptomatology.
   Clinical Microscopy.
   Bedside course in General Medical Diagnosis.
   Ten lectures on Symptomatology.
   General Hospital Medical Clinics.
III. Advanced bedside course in Symptomatology and Diagnosis.
   Demonstrations of patients by the student before the class.
   Courses in the Out-Patient Clinic in the Heart and Lungs and General Medicine Classes.
   General Hospital Medical Clinics.
   Medical Conferences.
   Elective advanced work in Clinical Diagnosis (Clinical Microscopy, History-recording, etc.).
   Review quizzes for State Board examinations.

The details of the methods of instruction in medicine for each year of the curriculum are as follows:

I. SECOND-YEAR STUDENTS.

Recitations.—Second-year students begin the study of medicine with systematic recitations from an elementary text-book, in which the subjects of nomenclature, etiology, morbid anatomy and typical symptoms only are dwelt upon.

Physical Diagnosis.—Normal physical diagnosis of the chest is taught to sections of ten students each in Out-Patient Classes from the dispensary under Dr. Bayard. Each student is required to map out upon the patient the normal positions and sounds of the thoracic viscera, and toward the end of each course of ten lessons a few abnormal cases are introduced for comparison.

II. THIRD-YEAR STUDENTS.

Recitations.—Third-year students recite twice a week from an advanced text-book on Practice, special emphasis being given to symptomatology, complications, diagnosis and treatment.

Written reviews are held at intervals to familiarize the student with examinations. All recitations are obligatory and the recitation marks received form an important component of the final examination marks of the year.

Ward Work.—Systematic and obligatory ward work is begun in classes not exceeding fifteen students each, who accompany the Professor of Medicine on routine rounds through the hospital wards. Professor Thompson instructs at the Presbyterian Hospital until January, and at Bellevue thereafter throughout the year. Repeated illustrations of all the common diseases are studied, and the advantage to the student of personally examining dozens of cases of such diseases as typhoid fever, pneumonia, nephritis, cardiac ailments, etc., in different stages of development, and of following their daily progress, far outweighs the antiquated system of attendance upon didactic lectures. The student is first taught to observe and describe symptoms and investigate etiology, and as he attains proficiency is required to make diagnoses, offer prognoses and suggest treatment. At the ward clinic such medical operations are shown as lavage, inflation of the stomach for diagnosis, aspiration for pleurisy and ascites, etc.

General Diagnosis.—Dr. Coleman gives a special course in General Medical Diagnosis, in which at one lesson the student is required to examine, compare and report upon each variety of pulse found in the ward; at another upon each variety of cachexia, anæmia or œdema; at another, upon each variety of abnormal liver or spleen; and so on, comprising all the important physical examinations.

Medical Conferences.—Under Dr. Coleman's direction, also, students are assigned to special cases which they study in detail for several weeks, reviewing the literature of the subject, and then they report in writing at a medical conference, at which their fellow students are called upon to offer criticisms and general discussion.

Clinical Laboratory Courses are conducted under Dr. Camac's supervision, in immediate connection with the study of hospital and dispensary cases. In this laboratory the student acquires methods and technique which he is required to put in practice with patients. The laboratory is also used extensively by the visiting staffs of the Hospital and Out-Patient Clinic for completing the data of their cases.

The students are divided into small sections, so that each member

of the class receives the personal assistance of the demonstrator. At the conclusion of the course, a written examination is held, upon the result of which, as well as upon the character of the work done, each successful student is given a certificate to the effect that he has completed the course. Upon the presentation of this certificate to the demonstrator in charge, the student is allowed the use of the laboratory and its apparatus for the study of cases in the wards. When assigned to cases at the general medical clinic, the student is required to report the result of his examination of the sputum, blood, urine, etc. Students reporting at the medical conferences, for which longer time is allowed for preparation, make more extended research in the laboratory. Students are also, from time to time throughout the year, assigned to study cases in the hospital and dispensary ; records are kept of these cases from which valuable clinical deductions may be made.

The apparatus employed is of such simple nature that it can readily be transported to the bedside, the work being thus essentially practical and such as is a direct guide to diagnosis. The student *himself* uses the apparatus so that he may become familiar with its care and application.

Following is a brief outline of the course :

Blood.—Technique of obtaining blood specimens ; normal constituents of blood ; blood formation in bone marrow ; corpuscle counting and hæmoglobin estimation ; technique of fixing and staining specimens ; diseased conditions determined by differential counting ; study of blood-serum diagnosis ; leucocytosis ; malarial and other blood parasites ; medico-legal value of blood stains.

Sputum.—Collection and examination of the gross specimen ; disinfection of sputum cups, etc. ; specimens of sputum in asthma, pneumonoconiosis, tuberculosis, gangrene and hemorrhage from the lungs, pneumonia, etc. ; diphtheria and other bacilli.

Gastric Contents.—Examination of vomitus ; administration of test meals ; method of obtaining and examining gastric contents ; lavage.

Fæces.—Methods of obtaining and examining ; intestinal parasites and ova.

Urine.—Microscopic examination with reference to diagnosis ; gonococci, tubercle bacilli, etc., seminal fluid in its medico-legal aspect, crystalline deposits.

Exudations and Transudations.—Ascitic and pleuritic effusions, cystic contents, vaginal discharges.

Each student is furnished typical specimens which he stains and

studies at the demonstrations and preserves for future reference and comparison.

Physical Diagnosis.—Physical diagnosis of abnormal conditions within the chest is taught by Professor Lambert to classes of a dozen students each. This course is very comprehensive, owing to the large attendance at the Class of Heart and Lung Diseases of the Bellevue Out-Patient Department, from which the patients are derived.

General Medical Clinics.—General medical clinics are held weekly in the amphitheatre of Bellevue Hospital by the Professor of Medicine. At these clinics students read written histories of cases which they have studied on the previous day. They are required to demonstrate their findings upon the patients and are questioned before the entire class in regard to diagnosis, etc. These clinics are also utilized by the Professor of Medicine to exhibit cases of exceptional rarity or difficult diagnosis. A second general medicine clinic is held weekly in the Bellevue amphitheatre by the Professor of Therapeutics, at which the effects of treatment are made the prominent feature.

Lectures.—A course of ten lectures is given by the Professor of Medicine, which is designed as introductory to the systematic bedside teaching which he conducts upon hospital rounds. The course covers such general topics as the theory and nature of infections, the theory and significance of fever, cachexias, diatheses, the blood in disease, etc.

III. Fourth Year Students.

Fourth-year students attend the general ward classes and amphitheatre clinics with the Professor of Medicine, as described for the third year, and also make systematic rounds through the wards with Professors Lambert and Nammack when on duty in Bellevue Hospital, and with Dr. Conner at the Hudson Street Hospital. They attend the medical conferences, present complete histories of dispensary and ward patients, attend special classes in the Out-Patient Department and during the latter part of the year recite in a review quiz in preparation for hospital and State Board examinations. An elective course in advanced clinical microscopy and diagnosis is offered in the fourth year.

Surgery.

Surgery will be taught in the recitation room, at the bedside, and at hospital clinics: a few didactic lectures will be given and conferences will be held in the fourth year.

In the second year the students are required to attend recitations on the principles of surgery throughout the term, two hours a week.

For this purpose the class is divided into small sections to insure thorough work; and so far as time permits will also receive instruction at the bedside.

In the third year recitations are continued upon regional surgery; the class is instructed in sections in Bellevue Hospital in history taking and methods of surgical examination and diagnosis, two or three hours a week for part of the term; bedside instruction is given daily in several hospitals to small groups, and formal clinics are held in Bellevue, New York, and other hospitals; about twenty didactic lectures will be given by the Professor of Surgery; about twenty lectures will be given by the Professor of Surgery, and a diagnosis clinic is held once a week 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 the general and the special branches—eye, ear, nose and throat, genito-urinary, dermatology, and orthopædics; they will attend the clinics and will have a review quiz in preparation for examination. The members of the sections are personally trained in the examination of patients, the dressing of wounds and fractures, and the administration of ether.

The opportunities for instruction in the special branches are exceptionally ample. There will be several clinical teachers in each subject, each with hospital and dispensary services, the student will be enabled directly to examine and study cases and will have a certain choice as to the time given to each branch.

Operative surgery will be taught in the fourth year in sections. The course consists of recitations, work upon the cadaver and bandaging. As the material is abundant each member of the class will perform all the principal surgical operations.

Obstetrics.

Instruction in obstetrics will be given during the second, third, and fourth years by (1) recitations, (2) illustrative lectures, (3) attendance upon cases of confinement, and (4) manikin practice.

Recitations from a standard text-book will be held by the instructor in obstetrics during the second year upon the physiology, and during the third upon the pathology of obstetrics, the latter including obstetric surgery.

These recitations are so scheduled as to cover the entire field of the subject laid out for the college year, are supplementary to the work of the Professor of Obstetrics during each of these two years, and prepare the student for an intelligent appreciation of his subsequent illustrative lectures, attendance upon cases of confinement, and manikin practice.

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, sagittal and 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.

Attendance upon Cases of Confinement.—Each candidate for the degree of M.D. is required to present a satisfactory certificate to the effect that he has attended at least six cases of confinement.

To fulfil this requirement students are appointed as internes in the Mothers' and Babies' Hospital, Lexington Avenue and 52d Street, and receive this practical instruction from the Professor of Obstetrics and the instructors. Students are lodged and boarded 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.

During the student's attendance upon his practical maternity course he may be excused from the exercises of the College, but it is strongly recommended that the student fulfil the above requirement in the vacation between the third and fourth years, or during the latter year.

Manikin practice is given to sections of the class during the fourth or senior year, and consists mainly of work by individual students upon the manikins, under the supervision and criticism of an instructor.

In addition, these meetings will be made the occasion for review recitations and "obstetric conferences" upon the illustrative lectures of the third year, and the student's work in his attendance upon confinement cases. By this means each individual student's standing in the department of obstetrics can be readily ascertained.

Gynæcology.

Instruction in gynæcology is given by recitations, lectures. ward and class-room demonstrations, clinics and laboratory demonstrations.

The Recitations are planned to cover the entire subject and are held one hour a week during the third year of the course. In order that the instruction throughout the department may be as nearly in

unison as possible, a synopsis of the subject-matter of each lesson is prepared by the instructor and amended and revised by the head of 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 his subject and enables him to keep in touch with each student until his graduation.

Six Lectures, upon topics selected for their special importance and interest, will be given during the third year.

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 student. When necessasy the patients are anæsthetized.

The routine of treatment appropriate to the various conditions found is demonstrated, the students assisting when possible. Familiarity in this way is acquired not only with normal conditions within the pelvis and the various departures from this state induced by disease, but opportunity is afforded to see and put in practice actual measures of relief and to watch the subsequent course and treatment of these cases.

Operations are performed three days every week at which the several sections are enabled to study the detail of every operation peculiar to this department.

A General Clinic is held once a week at which students selected in rotation are required to examine the patient, make a diagnosis and suggest treatment. They are questioned before the class upon all these topics, as they relate to the case in hand, so as to determine the correctness of their conclusions. Should operation be called for, it is then performed.

Laboratory Demonstrations of secretions, discharges and specimens obtained from patients who come under observation during this course are made to sections of the third-year class as a part of the course in clinical microscopy.

Diseases of Children.

This course will embrace clinical instruction and section teaching in all the important diseases of infancy and childhood, and the care and feeding of infants.

Instruction in contagious diseases will be given at the bedside in the Willard Parker hospital.

Diseases of the Nervous System. Mental Diseases.

Instruction in diseases of the nervous system will be given by

lectures and in section teaching at the bedside in the hospital wards and dispensaries.

The clinics upon mental diseases will be abundantly illustrated by patients from the asylums. Modern psychiatry and the medico-legal aspects of insanity will receive special attention.

Special Branches.

Instruction in the special branches, ophthalmology, otology, laryngology, insanity, orthopædics, dermatology, venereal and genito-urinary diseases, will be given by the various clinical professors and their assistants in the hospital wards and dispensaries with which they are connected, and by lectures.

(The right is reserved to make such changes in the detail of the curriculum as experience may prove desirable.)

A FOUR-YEAR COURSE IN MEDICINE LEADING TO THE DEGREE OF DOCTOR OF MEDICINE.

[*In the following schedule of studies the hours designated for Ithaca are university hours, of which the unit is, for lectures and recitations, one actual hour; and for dissections and laboratory work, two and one-half actual hours.*]

(*As given at Ithaca. For Calendar, see pp. 5–7.*)

Freshman Year.	No. Course.	1st Term.	2d Term.	3d Term.
Anatomy	1	3	3	3
Dissection	1	3	3	3
Physics	3	2	2	2
Chemistry	2	6	3	–
Physiology	4, 5	2	2	2
Comparative Physiology	6	1	1	1
Microscopy, Histology and Embryology	7	2	2	3
Laboratory	7	3	3	2
Materia Medica Laboratory	8	–	2	–

(*As given at Ithaca. For Calendar, see pp. 5–7.*)

Sophomore Year.	No. Course.	1st Term.	2d Term.	3d Term.
Anatomy	1	4	4	4
Dissection	1	–	3	3
Organic and Physiological Chemistry. Lectures and recitations.	3	3	3	3
Chemical Laboratory for Organic and Physiological and Toxological Chemistry	2, 3	2	2	2

Physiology	4	2		2		–	
Physiology, Lab.	5	2		–		–	
Materia Medica	7	2		2		2	
Therapeutics	8	1		1		1	
Medicine	9	1		1		1	
Surgery	10	2		2		2	
Obstetrics	11	2		2		2	
Pathology	12	2		1		1	
Pathological Lab.	13	–		1		1	

Junior Year. For subjects see page 223.

Senior Year. For subjects see page 224.

COURSES OF INSTRUCTION.

Freshman Year.

(*As given at Ithaca.*)

1. **Anatomy.** One lecture or section demonstration each week on the applied anatomy of the bones and joints, following the recitation on these subjects. Dr. COVILLE. Recitations two hours each week. Mr. MIX. Dissection, three to five courses of four weeks each, two or more hours daily. Dr. COVILLE and Mr. MIX.

2. **Chemistry.** Lectures and recitations, each, two hours, fall term, Dr. TREVOR. Laboratory fall term, two hours, Dr. CARVETH. Qualitative Laboratory, three hours, winter term. Dr. WHITTLESEY.

3. **Physics.** See Physics, course 2a, p. 141. Dr. NICHOLS.

4. **Physiology.** Fall term. See course 1, p. 165. Two hours. Lectures. Dr. WILDER.

5. **Recitations in Physiology.** Two hours each week. Winter and spring terms. Miss E. T. CLAYPOLE.

6. **Comparative Physiology.** See course 20, p. 249. One hour. Assistant Professor FISH.

7. **Microscopy, Histology, and Embryology.** See courses 1, 2, 3, p. 247. Professor GAGE.

8. **Materia Medica and Pharmacy.** Laboratory work two hours each week for the winter term. Assistant Professor FISH and Mr. MYERS.

Sophomore Year.

(*As given at Ithaca.*)

1. **Anatomy.** Surgical and Regional Anatomy and Embryology. Two lectures weekly. Sectional demonstrations, one hour each week. Recitation, one hour each week. Dr. COVILLE. Dissection, two to three courses of four weeks each, two or more hours daily. Dr. COVILLE and Instructor MIX. Neurology. Spring term. Three hours. See Course 3, p. 166. DR. WILDER.

2. **Toxicological Chemistry.** Laboratory, two hours each week. Fall term. Dr. CHAMOT.

3. **Organic Chemistry.** Lectures, two hours; recitation, one hour each week. Fall term. Physiological chemistry, lectures, two hours each week; recitation, one hour. Laboratory, two hours each week. Winter and spring terms. Dr. ORNDORFF.

4. **Comparative Physiology.** (See p. 249.) One hour. Fall and winter terms. Assistant Professor FISH.

5. **Physiology.** Recitations, one hour each week. Fall and winter terms. Miss E. T. CLAYPOLE.

6. **Physiological Laboratory.** Two hours each week. Fall term. Assistant Professor FISH and Miss CLAYPOLE and Mr. VOSE.

7. **Materia Medica.** Recitations, two hours each week. Mr. MYERS.

8. **Therapeutics.** One lecture each week. Dr. PAUL R. BROWN.

9. **Medicine.** Recitations, one hour weekly. Dr. PAUL R. BROWN.

10. **Surgery.** Recitations, two hours weekly. Dr. PAUL R. BROWN.

11. **Obstetrics.** One illustrative lecture weekly. One recitation weekly. Dr. PAUL R. BROWN.

12. **Pathology.** Lectures, two hours, fall term; one hour weekly, winter and spring terms. Dr. MOORE.

13. **Pathological Laboratory.** One hour weekly. Winter and spring terms. Dr. MOORE, Messrs WRIGHT and BURNETT.

14. **Physical Diagnosis.** In sections throughout the year. Dr. PAUL R. BROWN.

The study of the following branches is completed during the second year and the examinations on them are final: (1) Anatomy (written and practical), (2) Chemistry, (3) Materia Medica, and (4) Physiology. (See Examinations and Graduation in separate announcement of the Medical College.)

Freshman Year.

(*As given in New York City. For Calendar, see pages 5–7.*)

1. **Anatomy.** One lecture each week on the applied anatomy of the bones and joints, following the recitation on these subjects. Recitations two hours each week. Section demonstration one hour each week to each section. Dissection, three to five courses of four weeks each, two or more hours daily.

2. **Chemistry and Physics.** Two lectures each week on Physics. Recitations two hours each week on Chemistry and Chemistry Laboratory six hours each week for half the session.

3. **Physiology.** One hour of recitation each week. One lecture a week during the first half and two lectures a week during the second half of the session.

4. **Histology.** Recitations one hour, and Laboratory four hours each week for half the year.

5. **Materia Medica.** Laboratory work six hours each week for half the session.

The class is divided into sections for recitations and laboratory work, and the sections are so arranged that the work in the different laboratories is evenly distributed throughout the term. In the course of the recitations written reviews are held every few weeks, the papers of which are examined by the Professors of the respective branches.

Sophomore Year.

(*As given in New York City. For Calendar, see pages 5–7.*)

1. **Anatomy.** Surgical and Regional Anatomy and Embryology. Three lectures weekly. Recitation one hour each week. One demonstration lecture weekly. Section demonstrations one hour each week. Dissection, one to three courses of four weeks each, two or more hours daily.

2. **Organic and Physiological Chemistry.** Two lectures each week. Recitation once a week.

3. **Physiology.** Recitations two hours each week, including a review of the work of the first year. Two lectures a week during the first half and one lecture a week during the second half of the session.

4. **Materia Medica.** Two recitations each week.

5. **Therapeutics.** One lecture each week.

6. **Medicine.** Recitation one hour weekly.

7. **Surgery.** Recitations two hours weekly.

8. **Obstetrics.** One recitation weekly.

9. **Pathology.** One recitation weekly.

10. **Bacteriology.** Laboratory six hours twice a week for one quarter of the year.

11. **Physical Diagnosis** in sections in the dispensaries and hospitals.

The second year class is divided into sections for recitations, laboratory work, and physical diagnosis. Written reviews are held in the course of the recitations.

The study of the following branches is completed during the second year and the examinations on them are final: (1) Anatomy (written and practical); (2) Chemistry; (3) Materia Medica; and (4) Physi-

ology. (See Examinations and Graduation in separate Announcement of Medical College.)

Junior Year.

(*Given only in New York City. For Calendar, see pages 5–7.*)

1. **Medicine.** Recitations two hours each week. Physical diagnosis in sections in the hospitals. General medical diagnosis in schools at the bedside. General medical clinics two hours each week in Bellevue Hospital. Ward visits in small sections with the Professor and Clinical Professors of medicine in Bellevue and other hospitals. Ten introductory lectures.

2. **Pathology.** Lecture one hour weekly. Recitations one hour each week throughout the year.

3. **Pathological Laboratory.** Pathological anatomy six hours each week for half the term.

4. **Therapeutics.** Lectures one hour each week; one hour a week bedside teaching in Bellevue Hospital throughout the year. Clinic once a week. Recitations one hour weekly.

5. **Obstetrics.** Illustrative lectures weekly. One recitation weekly.

6. **Gynæcology.** One clinic in obstetrics and gynæcology. Recitation one hour each week.

7. **Surgery.** Lectures twenty hours. General surgical clinics, two each week. Bedside teaching, diagnosis and history-taking in sections in Bellevue Hospital. Ward work in small sections in Bellevue, St. Francis and the New York hospitals with the Professor and Clinical Professors of Surgery. Recitations on Regional Surgery two hours weekly.

8. **Hygiene and Toxicology.** Lecture one hour each week.

9. **Diseases of Children.** Clinic one hour each week.

10. **Diseases of the Nervous System.** Lecture one hour each week for half the term.

11. **Dermatology.** Clinic one hour a week for one-third of the year.

12. **Laryngology and Rhinology.** Clinic one hour a week for one-third of the year.

13. **Ophthalmology.** Clinic one hour a week.

14. **Otology.** Clinic one hour a week for one-third of the year.

15. **Genito-Urinary Surgery.** Clinic one hour a week for half the year.

16. **Orthopædic Surgery.** Clinic one hour a week.

Senior Year.

(*Given only in New York City. For Calendar, see pages 5-7.*)

2. **Medicine.** Ward-work in the hospitals. General medical clinics twice a week. Exercises in history taking and in clinical microscopy continued. Recitations, review quizzes for State Board and Hospital examinations.

4. **Surgery.** Ward-work in the hospitals. General surgical clinics twice a week. Operative surgery in sections. Review quizzes. Conferences.

5. **Therapeutics.**—Clinical instruction in Bellevue Hospital. Section work in the hospital dispensary in the treatment of diseases and in the writing of prescriptons.

6. **Obstetrics.**—Attendance upon cases of confinement. Manikin practice.

7. **Gynæcology.**—Clinics and section demonstrations.

8. **Diseases of Children.**—Section teaching, three hours each week. Clinical microscopy.

9. **Nervous Diseases.**—Section work, one hour a week in Bellevue Hospital.

10. **Mental Diseases.**—Clinics once a week.

11. **Dermatology.**—Section work.

12. **Laryngology and Rhinology.**—Section work.

13. **Ophthalmology.**—Section work.

14. **Otology.**—Section work.

15. **Genito-Urinary Surgery.**—Section work.

16. **Orthopædic Surgery.**—Section work.

17. **Hygiene.**—Two lectures a week for two months. Section work and laboratory demonstration.

18. **Review Recitations.**—In all major branches for State Board Examinations.

THE COLLEGE OF AGRICULTURE.

FACULTY.

JACOB GOULD SCHURMAN, A.M., D.Sc., LL.D., President.
ISAAC PHILLIPS ROBERTS, M.Agr., Dean of the Faculty of Agriculture, Professor of Agriculture, Director of the College of Agriculture and Experiment Station.
GEORGE CHAPMAN CALDWELL, B.S., Ph.D., Professor of Agricultural and General Chemistry.
JOHN HENRY COMSTOCK, B.S., Professor of Entomology and General Invertebrate Zoology.
LIBERTY HYDE BAILEY, M.S., Professor of General and Experimental Horticulture.
HENRY HIRAM WING, M.S., Assistant Professor of Animal Industry and Dairy Husbandry.
MARK VERNON SLINGERLAND, B.S., Assistant Professor of Entomology.

Other Officers of Instruction and Administration.

JAMES LAW, F.R.C.V.S., Veterinary Science.
GEORGE FRANCIS ATKINSON, Ph.B., Botany.
SIMON HENRY GAGE, B.S., Anatomy.
WILLARD WINFIELD ROWLEE, D.Sc., Plant Histology.
LOUIS ADELBERT CLINTON, B.S., Assistant Agriculturist.
GEORGE WALTER CAVANAUGH, B.S., Assistant Chemist.
*BENJAMIN MINGE DUGGAR, M.S., A.M., Ph.D., Assistant Cryptogamic Botanist.
WILLIAM ALPHONSO MURRILL, A.M., Assistant Cryptogamic Botanist.
ALEXANDER DYER MACGILLIVRAY, Assistant in Entomology.
ABRAHAM LINCOLN KNISELY, M.S., Assistant in Chemistry.
WALTER W. HALL, Assistant in Cheese Making.
WEBSTER EVERETT GRIFFITH, Assistant in Butter Making.
HUGH CHARLES TROY, B.S.A., Assistant in Dairy Laboratory.
JOHN WALTER SPENCER, Deputy Chief of Extension Work.
JOHN LEMUEL STONE, B.Agr., Assistant in Agriculture.

*Absent on leave.

MARY FARRAND MILLER, B.S., Instructor in Nature Study.
GEORGE NIEMAN LAUMAN, B.S.A., Instructor in Horticulture.
LEROY ANDERSON, M.S. in Agr., Assistant in Dairy Husbandry.
ARCHIBALD ROBINSON WARD, B.S.A., Assistant in Dairy Bacteriology.
HARRIS PERLEY GOULD, M.S.A., Assistant in Charge of Spraying Experiments.
ALICE GERTRUDE McCLOSKEY, Matron Junior Naturalist Clubs.
GEORGE WALTER TAILBY, Farm Foreman.
CHARLES ELIAS HUNN, Gardener.
EDWARD ARTHUR BUTLER, Clerk.
JULIA ZITA KELLY, Stenographer—Extension Work.
LIZZIE VERONICA MALONEY, Stenographer—Experiment Station.

The College of Agriculture comprises the Departments of General Agriculture; Animal Industry and Dairy Husbandry; Horticulture and Pomology; Agricultural Chemistry; General and Economic Entomology; the Agricultural Experiment Station, and University Extension Work in Agriculture.

EQUIPMENT.

The University grounds consist of 270 acres of land, bounded on the north and south by Fall Creek ravine and Cascadilla Gorge respectively. One hundred and twenty-five acres of the arable land are devoted to the use of the Agricultural Department. This part of the domain is managed with not only a view to securing profit, but also to illustrate the best methods of general agriculture. A four years' rotation is practiced on the principal fields; one year of clover, one of corn, one of oats or barley, and one of wheat. A dairy of twenty cows, a flock of sheep, some fifteen horses and colts, and other live stock are kept upon the farm. Nearly all of these animals are grades, bred and reared with the single view of giving object lessons which can be practiced with profit by the students on their return to their homes. A four-story barn provides for housing all the animals, machinery, tools, hay, grain, and manures. The stationary thresher, feed-cutter, chaffer, and other machinery are driven by steam power. The barn also furnishes many facilities for carrying on investigations in feeding and rearing all classes of domestic animals.

The barn is also furnished with a well equipped piggery and tool house. Not far from the main barn have been constructed four buildings with suitable yards and appliances for incubating eggs and rearing domestic fowls.

The agricultural class room is provided with a collection of grains and grasses, implements of horse and hand culture, and various appliances for carrying on instruction and conducting investigation. The whole plant is managed with a view to the greatest economy consistent with the greatest efficiency in imparting instruction.

THE DAIRY BUILDING, a two-story stone structure 45x90 feet, was built from an appropriation of $50,000 by the Legislature of 1893. It provides lecture rooms, laboratories, and offices, besides two large rooms for butter and cheese making, both of which are fully equipped with modern machinery and appliances. Automatic electrical apparatus for controlling the temperature in cheese-curing rooms, refrigerator room, lockers and bath rooms are also provided. The whole building is thoroughly heated and ventilated, and power is furnished by a sixty horse-power boiler and a twenty-five horse-power Westinghouse engine.

The Agricultural Museum occupies rooms on the second floor of Morrill Hall. It contains, 1. The Rau Models, being one hundred and eighty-seven models of plows made at the Royal Agricultural College of Würtemburg, under the direction of Professor Rau, and arranged and classified by him for the Paris Exposition of 1867. 2. Engravings and photographs of cultivated plants and animals, obtained at the various agricultural colleges of Europe. 3. A collection of the cereals of Great Britain, being a duplicate of that in the Royal Museum of Science and Art at Edinburg, presented by the British government. 4. A collection of agricultural seeds. 5. A large number of models representing a great variety of agricultural implements. The class room has been provided with special sets of diagrams and other appliances designed to illustrate the lectures on agriculture.

The agricultural library contains files of bulletins and reports from the experiment stations of the United States and Canada; it has also a file of the publications of the U. S. Department of Agriculture. The leading works on agriculture are on the shelves. The exchange list includes the principal agricultural periodicals published in this country.

The Horticultural Department Equipment comprises about ten acres of land variously planted, forcing houses, and a museum.

The gardens and orchards contain the fruits which thrive in the north in considerable variety, and in sufficient quantity to illustrate methods of cultivation. Nursery grounds are also attached, in which are growing many species of economic plants from various parts of the world. The fruits comprise something more than sixty varieties

of grapes, over fifty of apples, fifty of plums, and other fruits in proportion. A dwarf pear orchard of 300 trees, and other representative orchards, comprise the remainder of the field space, excepting such as is set aside for vegetable gardening and floriculture. There is also a collection of one hundred varieties of hardy roses and various other ornamental and interesting plants.

The forcing-houses are eight in number and cover about 6,000 square feet of ground. These, in connection with store-rooms and pits, afford excellent opportunities for nursery practice, for the study of the forcing of all kinds of vegetables and for some kinds of floriculture. A laboratory with space for forty students, is used for instruction in propagation of plants, pollination, and the commoner green-house operations. There is also a mushroom house 14x80 feet and a reading room for horticultural students.

The museum comprises two unique features—the garden herbarium and the collection of photographs. The herbarium, which is rapidly assuming large proportions, containing at present over 11,000 sheets, is designed to comprise all varieties of all cultivated species of plants, and it is an indispensable aid to the study of garden botany and the variation of plants. The collection of photographs comprises over 5,000 negatives, with prints representing fruits, flowers, vegetables, illustrative landscapes, glass houses, and horticultural operations. A very large collection of machinery and devices for the spraying of plants is at the disposal of students. Charts and specimens in some variety complete the museum and collection.

The library has files of many of the important horticultural and botanical periodicals and a good collection of general horticultural literature.

The Entomological Cabinet contains, in addition to many exotic insects, specimens of a large proportion of the more common species of the United States. These have been determined by specialists, and are accessible for comparison. The collection includes many sets of specimens illustrative of the metamorphoses and habits of insects. The laboratory is also supplied with a large collection of duplicates for the use of students and is equipped with microscopes and other apparatus necessary for practical work in entomology.

The insectary of the Agricultural Experiment Station affords facilities to a limited number of advanced students for special investigations in the study of the life history of insects, and for experiments in applied entomology.

The Chemical Department is housed in a three-story brick building 126 feet in length and of an average width of 60 feet. The

Department is liberally equipped with varied appliances necessary to give instruction to four hundred students in General and Agricultural Chemistry.

ADMISSION.

The following subjects are required for admission: English, Physiology and Hygiene, History, [the student must offer two of the four following divisions in history, (a) American, (b) English, (c) Grecian, (d) Roman]. Plane Geometry, Elementary Algebra and either A, B, or C as below.

A. Greek and Latin.

B. Latin and either Advanced French or Advanced German.

C. Advanced French, Advanced German and Advanced Mathematics.

An equivalent of any one of the three groups, A, B and C, may be offered, provided five counts are offered. Latin counts 3, Greek, French, and German 2 each. Advanced Mathematics (Solid Geometry, Advanced Algebra, Plane and Spherical Trigonometry) 1, provided, however, that the student before graduation must have passed in one modern language and in Advanced Mathematics if they were not offered for entrance.

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

[*For details as to subjects and methods of admission see pages 33–72.*

For admission to the freshman class communications should be addressed to the Registrar. See pages 33–53.

For admission to advanced standing from other colleges and universities, all communications should be addressed to the Director of the College of Agriculture. See pages 52–53.

For admission to graduate work and candidacy for advanced degrees, communications should be addressed to the Dean of the University Faculty. See pages 64–72.]

INSTRUCTION.

Plan of Instruction.

The instruction in the College of Agriculture is comprised in the following general lines:

The Regular Course in Agriculture covers a period of four years. It is designed to afford an education as broad and liberal as that given by other departments of the University, and leads to the degree of Bachelor of the Science of Agriculture, (B.S.A.).

THE COURSE IN AGRICULTURE LEADING TO THE DEGREE OF BACHELOR OF THE SCIENCE OF AGRICULTURE.

Freshman Year.	No. Course.	1st Term.	2d Term.	3d Term.
Botany	1, 2	3	3	3
Invertebrate Zoology	1, 3	3	Eco. Entom. 3	Gen. Entom. 3
English	1	3	3	3
Freehand Drawing	1	2	2	Linear Draw. 3
Chemistry	1	3	3	3
Hygiene	1	1	–	–
Military Drill	1	2	Phys. Train. 4	Milit'y Drill 2

Sophomore Year.	No. Course.	1st Term.	2d Term.	3d Term.
English	2	2	2	2
Physics	2a	2	2	2
Agricultural Chemistry	16	4	4	4
Political Economy	51	3	3	3
Phys. of Animals	—	1	1	1
Military Drill	1	2	–	2
Elective	—	1	4	4

Junior Year.	No. Course.	1st Term.	2d Term.	3d Term.
Elective	—	15–18	15–18	15–18

Senior Year.	No. Course.	1st Term.	2d Term.	3d Term.
Thesis	—	–	2	2
Applied Agriculture	1–6	7	7	7
Farm Buildings	10	1	1	1
Military Science	5	–	2	–
History of Agriculture	8	–	–	2
Elective	—	7	5	3

The remaining part of the course is elective,* with the condition that at least one-half of the entire elective work of each year, including the thesis and applied agriculture in the senior year, must be in work given by the departments of agriculture and horticulture and in the courses in agricultural chemistry, economic entomology, origin of soils, diseases of farm animals, zootechny and silviculture.

Those who, at entrance, offer Latin for one of the advanced entrance subjects, must make up two years of a modern language in the University.

Students receive instruction not only in the College of Agriculture, but also in the following named Colleges and Departments: Botany, Freehand Drawing, Physics, Political Economy, Physiology, Vertebrate Zoology, Hygiene, Mathematics, French, German, and Drill and Gymnasium; *Geology*, *Veterinary Science*, *Civil Engineering and Mechanical Engineering*. The elective work is in italics.

*All electives must be chosen by the student at the beginning of the year with the previous written approval of the Director.

ADVANCED OR GRADUATE WORK IN AGRICULTURAL SCIENCE.

The advanced instruction is designed to fit men for teachers and experimenters, and it may lead to the degree of Master of Science in Agriculture, and to Doctor of Philosophy. The laboratories, dairy building, farm gardens, orchards and libraries give ample facilities for the prosecution of independent work of a high character.

A yearly fellowship of an annual value of $500 is assigned to the following group of departments : Agriculture, Horticulture and Veterinary Science. See page 65.

The Special Course.

The Special Course is intended for young persons who cannot well spend four years in preparing themselves to become farmers and who yet wish to avail themselves of technical and practical instruction in modern scientific agriculture.

Persons who are eighteen years of age and who furnish evidence to the Director that they are able to pursue the work elected in a satisfactory manner, are admitted to the Special Course without examination. The number of hours and the courses elected must be approved by the Director. This course may extend through either one or two years. The required work as given on page 230 is designed for students studying for the degree of B.S.A. and not for Special Students.

Special students, during the time they are in the University, enjoy equal advantages in all respects with students who are studying for a degree. They are admitted by a vote of the faculty upon recommendation of the Director of the College. Applications for admission to the Special Course should be made personally or by letter to the Director.

Synopsis of Courses.

Agriculture.—The instruction in Agriculture proper treats of soils and their preparation ; fertilizers ; harvesting and marketing general and special crops ; laying out and improving farms ; drainage and irrigation ; farm buildings and fences, location, plans and construction ; farm yard manures and commercial fertilizers, composition, manufacture, preservation and application ; farm accounts, business customs, rights and privileges ; employment and direction of laborers ; farm implements and machinery, use, care and repairs ; grasses and forage plants ; weeds and their eradication ; swine, sheep and horse husbandry, breeds and breeding, care, management, and feeding.

The practice will include setting up and running farm machinery and engines; the sharpening and repairing of small tools, drawing plans and specifications of farm buildings; mapping drains, and farm book-keeping.

Dairy Husbandry.—The class-room instruction consists of lectures upon the production of milk and its manufacture into its various products. The dairy house practice will comprise the making of butter and cheese by the most approved methods; testing of milk as to purity and fat content; the use and care of centrifugal separators and other creaming devices and the details of creamery and cheese factory management.

Animal Industry.—Lectures will be given on the origin and formation of the various breeds of dairy and beef cattle; their selection and improvement; the improvement of native cattle and formation of new breeds; the composition of stock foods and their combinations into rations suitable for various purposes. Practice will be given in tracing and tabulating pedigrees; judging by scale of points; and computing rations.

Poultry Keeping.—Will include instruction in breeds and breeding; feeding and management; incubation, artificial and otherwise; construction of poultry houses and their management.

Horticulture.—The instruction in Horticulture is given in twelve courses. Course 1 is designed to afford a general scientific foundation for the prosecution of all studies relating to the variation and amelioration of plants under conditions of domestication and cultivation, and it has only indirect reference to Horticultural methods and practices. Course 6 is intended for those advanced students who have had some training in systematic botany, and who desire to familiarize themselves with the complex botany of cultivated plants. Courses 4, 5, 7, 8, 9, 10, are calculated to afford the latest information and methods connected with the commercial cultivation of plants, and in all of them laboratory work and field practice are important factors.

The Experiment Station, which is a department of the University, offers opportunity for students to observe and study the investigations which are being carried on in many branches of animal and plant industry.

A. Agriculture.

1. **Wheat culture**; preparation of soil, seeding, insects, harvesting, marketing; farms, selection and purchase, location with regard to markets, roads, schools, society; farm buildings, location, plans, construction, liability of contractors; fields, shape and size; fences

and gates. construction, repairs, durability of wood ; farm and public roads, bridges and culverts ; farm yard manures, composition manufacture, preservation, application ; commercial fertilizers, composition and use. Lectures. Fall term. Daily, ex. Saturday, 11. Five hours. *Morrill 19.* Professor ROBERTS.

2. **Inspection of roads, bridges and farm buildings.** Agricultural survey and comparison of farms ; practice in fields, shop, and barns. Fall term. T., 2–5. One hour. Professor ROBERTS.

3. **Farm accounts;** business customs, rights and privileges, form of contracts, notes, deeds, mortgages ; road laws, employment and direction of laborers ; swine husbandry, breeds, feeding, management ; the horse, breeds and breeding, feeding, education, care and driving ; sheep husbandry, breeds and varieties, management and care, early lamb raising. Lectures. Winter term. Daily except Saturday, 11. Five hours. *Morrill 19.* Professor ROBERTS.

4. **Judging and scoring horses, swine and sheep ;** work in shop and barns ; running engines and other farm machinery. Winter term. T., 2–5. One hour. Professor ROBERTS.

5. **Farm drainage,** construction, material, cost and utility ; history of plows and plowing ; farm implements and machinery, use, care and repairs ; corn, oat, barley, flax, hop, potato and tobacco culture ; grasses and forage plants ; silos and ensilage ; weeds and their eradication. Lectures. Spring term. Daily, except Saturday, 11. Five hours. *Morrill 19.* Professor ROBERTS.

6. **Practice** in fields and shop, use of tools, implements and farm machinery, draining, surveys and mapping. Spring term. T., 2–5, One hour. Professor ROBERTS.

7. **Seminary work for advanced students.** One hour. By appointment. *Morrill 19.* Professor ROBERTS.

8. **History of Agriculture.** Lectures and reports. Spring. W., F., 9. Two hours. *Morrill 19.* Mr. LAUMAN.

9. **German Agricultural Reading.** M., S., 9. Two hours. *Morrill 17B.* Mr. LAUMAN.

10. **Farm Buildings.** Study and designing of farm buildings. One afternoon per week, 2–4.30. One hour. Mr. LAUMAN.

11. **For students in Veterinary Science.** Breeding, care and management of horses, sheep and swine. Stables, construction and sanitation. Two hours. Fall term. Professor ROBERTS.

12. **For winter course students.** Lectures on the leading subjects in courses 1, 3, 5, above, will be given so far as time will permit. Daily, except Saturday, 9. Five hours. *Morrill 19.* Professor ROBERTS.

13. **Practice** as in courses 2, 4 and 6, in sections by appointment, one afternoon for each section per week. Winter term. 2–5. Two hours. Professor ROBERTS.

Professor Roberts will be assisted by specialists in giving instruction in some of the subjects named.

B. Animal Industry and Dairy Husbandry.

21. **Animal Industry.** Principles of breeding, history and development, improvement and creation of dairy and beef breeds of cattle; principles of feeding, care, selection and management of dairy and beef cattle. Winter and spring terms. Lectures. M., W., 12. Practice one hour by appointment. Three hours. *Dairy Building*. Assistant Professor WING.

22. **Dairy Husbandry**; milk and butter. Fall term. Lectures. T., Th., 12. Practice two afternoons by appointment. Four hours. *Dairy Building*. Assistant Professor WING.

23. **Dairy Husbandry**; cheese. Winter term. Practice two days per week, 10–1, by appointment. Three hours. *Dairy Building*. Assistant Prosessor WING.

24. **Dairy Husbandry.** Laboratory work on special problems. Fall and spring terms. By appointment, one to three hours. Open only to students who have had course 22. Assistant Professor WING.

25. **For Winter Course Students.** Animal Industry and Dairy Husbandry. Principles of breeding, feeding, and selection, care and management of dairy cattle. Daily, 8. Practice one afternoon by appointment. *Dairy Building*. Assistant Professor WING.

26. **For Dairy Course Students.** Winter. Lectures on milk and its products; breeding and feeding, daily, 8; lectures on subjects related to dairy husbandry; daily, 9; practice in butter and cheese making and in dairy laboratory, daily, 10–4:30. *Dairy Building*. Assistant Professor WING, Messrs. HALL, GRIFFITH and TROY, assisted by others of the faculty of the College of Agriculture.

Course 26 or the "Dairy Course" may be elected by special students in Agriculture as a full term's work for the winter term.

27. **Poultry.** Origin, history and classification of the domestic breeds of poultry; breeding, feeding, and management; construction of buildings, incubators, and brooders. Lectures, T., Th., 12. Practice in running incubators and brooders and in judging and selecting fowls, by appointment. Two or three hours. Spring term. Assistant Professor WING.

28. **For Winter Course Students.** The work is the same as course 27. Lectures. T., Th., 12. Practice by appointment. Regular

and special students may elect the lectures in this course instead of in course 27 if they prefer. Winter term. Assistant Professor WING.

C. Horticulture.

1. **Evolution of Cultivated Plants.** Lectures and text-book. A discussion of the current hypotheses of organic evolution as applied to the modification of plants, particularly of those in cultivation. Open to students in all courses who have taken courses 1 and 2 in Botany. Fall. M., W., F., 10. Three hours. *Morrill 19.* Professor BAILEY.

2. **German Horticultural Reading.** T., Th., 9. Two hours. *Morrill 17B.* Mr. LAUMAN.

3. **The Literature of Horticulture.** A seminary in the literature of the cultivation of plants in various parts of the world, with reviews of periodical literature. Fall, Th., 10. One hour. *Morrill 17B.* Professor BAILEY and Mr. LAUMAN.

4. **Greenhouse Construction and Management.** Fall. Lecture, T., 10, *Morrill 17B*, and laboratory work, W., 2–4:30, at *Forcing Houses.* Two hours. Professor BAILEY and Mr. LAUMAN.

5. **Pomology.** Lectures, text-book aud other class exercises upon the cultivation of fruits. Winter. M., W, F., 10. Three hours. *Morrill 19.* Professor BAILEY.

6. **The Botany of Cultivated Plants.** A seminary course, registration for which is by special permission. Winter. T., 10. One hour. *Morrill 17B.* Professor BAILEY.

7. **Propagation of Plants.** Deals with the multiplication of plants,—grafting, budding, making cuttings, pollination, etc. Winter. Lectures and text-book, Th., 12, and laboratory work, Th , 2–4:30. Two hours. *Forcing-houses.* Professor BAILEY and Mr. LAUMAN.

8. **Principles of Vegetable Gardening.** Lectures. Spring. M., W., 10. Two hours. *Morrill 19.* Professor BAILEY.

9. **Field Lessons.** Pruning and the study of orchards and plants where they grow. Garden tools. Includes the theory and practice of spraying plants. Spring. M.. 2–4:30. One hour. *Forcing-houses.* Professor BAILEY and Mr. LAUMAN.

10. **Handicraft.** Practical work in the forcing-houses and gardens, with familiar talks. One to three hours, by appointment. Professor BAILEY, Mr. LAUMAN and Mr. HUNN.

11. **Investigation** incident to previous courses. For graduates and advanced students. Hours by appointment. Professor BAILEY.

12. **For Winter Course Students.** The general subjects presented in the foregoing courses. Winter. Lectures and text-book,

M., F., 11, *Morrill* —, and practical work in sections by appointment, one afternoon, 2–4:30, for each section per week at *Forcing-houses.* Three hours. Professor BAILEY and Mr. LAUMAN.

Seminaries are conducted when requested by students, and credit may be had for such work. The Horticulturists' Club meets every Monday evening.

D. Chemistry.*

16. **Agricultural Chemistry.** General course. Four hours. Professor CALDWELL.

17. **Agricultural Chemistry.** Readings from journals. For those who have had course 16. One hour. Professor CALDWELL.

E. Entomology.†

6. **Economic Entomology.** Winter term. Two leetures per week. Assistant Professor SLINGERLAND.

7. **Economic Entomology.** Laboratory work. Structure and classification of insects. Winter term. Assistant MACGILLIVARY.

F. Botany.‡

G. Veterinary Science.§

1. **Diseases of Farm Animals.** One hour. Fall term. Tuesday 10. Professor LAW.

1 (a). **Diseases of Farm Animals.** One hour. Winter term. S., 8. Professor LAW.

2. **General Physiology of Domestic Animals.** One hour through the year. F., 10. Assistant Professor FISH.

3. **Zootechny.** Two hours. Winter term. T., Th., 11. Professor W. L. WILLIAMS.

FEES AND EXPENSES.

Tuition is free, see page 55.

Incidental fees are required as follows:

Post graduate students	$5 00 per term
Regular students, 3rd and 4th years	5 00 " "
Special students	5 00 " "
For general winter course students in Agriculture electing practice in Dairy Husbandry	12 50 " "
For Winter Dairy Course Students	15 00 " "

* All other courses in Chemistry are open to students in Agriculture.

† All other courses in Entomology are open to students in Agriculture.

‡ All courses not required in the sophomore year may be elected.

§ Subject to rule found on page 230.

Deposits are required in the various laboratories where work is taken ranging from $1.50 to $10.00 per term according to the amount and nature of the work.

THE WINTER COURSES IN AGRICULTURE AND DAIRY HUSBANDRY.

There are many persons who cannot spend two or more years at college, but who would receive great benefit from lectures and practice during the winter months. To meet the needs of such persons the following courses are offered. They begin the first week in January of each year and extend through one university term of eleven weeks.

Persons who are of good moral character and seventeen years of age may be admitted by the Director of the College without a formal examination, but are required to file a letter of recommendation and to satisfy the Director that their previous training has been such that they can pursue the studies elected with profit to themselves and credit to the University.

Students may elect either one of the following lines of study.

I. Winter Course in Agriculture.

Prescribed work—Agriculture, 5 hours per week.
Horticulture, 2 hours per week.
Animal industry, 2 hours per week.
Agricultural Chemistry, 2 hours per week.

Two hours per day of practice in educational work in barns, dairy houses, forcing houses and laboratories.

Elective. A minimum of four hours must be taken in addition to the prescribed work from the subjects named below:

Entomology, 2 hours per week.
Botany, 2 hours per week.
Dairy Husbandry, 2 hours per week.
Poultry Keeping, 2 hours per week.
Political Economy, 1 hour per week.
Diseases of Farm Animals, 1 hour per week.

II. The Winter Dairy Course.

This course is designed primarily to meet the needs of those butter and cheese makers who desire more thorough and comprehensive instruction, and to train those who are looking toward butter and cheese making as a profession. The instruction is given largely with the view of fitting students for conducting factories, while that in the Winter Course in Agriculture is given with particular reference to the needs of the farm dairy.

Not more than fifty students can be accommodated in the building. The class will be limited to this number and applications should be made at as early a date as practicable in order to insure admission.

The instruction is partly by lectures and recitations, but largely by actual practice in the Creamery, Cheese Factory and Dairy Laboratory, the order being about as follows:

Lectures on milk and its products, 2 hours per week.
Lectures on subjects related to dairying, 10 hours per week.
Cheese room practice, twice weekly, 4–6 hours each.
Butter room practice, twice weekly, 4–6 hours each.
Dairy laboratory practice, twice weekly, 2–4 hours each.
Problems and book-keeping, 2 hours per week.

Calendar.

The entrance examinations for students in the Regular Course are held in September and June. The instruction begins in the fall term, September 28, 1899; in the Winter Course in Agriculture and in the Dairy course, January 3, 1900. Students may be excluded if not present at the beginning of the term.

For further particulars and for a special announcement which will be sent on application, address I. P. Roberts, Director of the College of Agriculture, Cornell University, Ithaca, N. Y.

EXPERIMENT STATION.

BOARD OF CONTROL:

The Trustees of the University.

The Agricultural College and Station Council.

JACOB GOULD SCHURMAN, ... President of the University
FRANKLIN C. CORNELL, ... Trustee of the University
ISAAC P. ROBERTS, ... Director of the College and Experiment Station
EMMONS L. WILLIAMS, ... Treasurer of the University
LIBERTY H. BAILEY, ... Professor of Horticulture
JOHN H. COMSTOCK, ... Professor of Entomology

Officers of the Station.

I. P. ROBERTS,.....Director
E. L. WILLIAMS,.....Treasurer
E. A. BUTLER,.....Clerk

The Agricultural Experiment Station of Cornell University is a Department of the College of Agriculture. Incidentally, students may receive instruction from observing and discussing the experiments which are being carried on. The Federal Law passed March 2d, 1887, briefly outlines the object of the Experiment Station in the following words: "To aid in acquiring and diffusing among the people of the United States useful and practical information on the subjects connected with agriculture, and to promote scientific investigation and experiment respecting the principles and applications of agricultural science." . . . It further provides "That bulletins or reports of progress shall be published at said stations at least once in three months, one copy of which shall be sent to each newspaper in the states or territories in which they are respectively located, and to such individuals actually engaged in farming as may request the same 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.

In pursuance of Chapter 430 of the Laws of 1899 of New York State, provision is made for "giving instruction throughout the state by means of schools, lectures and other University extension methods, or otherwise, and in conducting investigations and experiments; in discovering the diseases of plants and remedies; in ascertaining the best method of fertilization of fields, gardens and plantations; and best modes of tillage and farm management and improvement of live stock; and in printing leaflets and disseminating agricultural knowledge by means of lectures or otherwise; and in preparing and printing for free distribution the results of such investigations and experiments, and for republishing such bulletins as may be useful in the furtherance of the work, and such other information as may be deemed desirable and profitable in promoting the agricultural interests of the state."

NEW YORK STATE VETERINARY COLLEGE.

VETERINARY COLLEGE COUNCIL.

The President of Cornell University, JACOB GOULD SCHURMAN.
The Director of the Veterinary College, Professor JAMES LAW.
MYNDERSE VAN CLEEF.
The Treasurer of Cornell University, EMMONS L. WILLIAMS.
Professor VERANUS A. MOORE.
Professor PIERRE A. FISH.
CHARLES EZRA CORNELL, *Secretary of the Council.*

FACULTY.

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

JAMES LAW, F.R.C.V.S., Director of the College, Dean of the Faculty, and Professor of Principles and Practice of Veterinary Medicine, Veterinary Sanitary Science, and Parasitism.

WALTER L WILLIAMS, D.V.S., Professor of Principles and Practice of Veterinary Surgery, Zootechny, Obstetrics, and Jurisprudence.

PIERRE AUGUSTINE FISH, D.Sc., D.V.M., Assistant Professor of Comparative Physiology, Pharmacology and Therapeutics.

VERANUS ALVA MOORE, B.S., M.D., Professor of Comparative Pathology and Bacteriology, and of Meat Inspection.

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

GRANT SHERMAN HOPKINS, B.S., D.Sc., Assistant Professor of Veterinary Anatomy and Anatomical Methods.

BENJAMIN FREEMAN KINGSBURY, A.B., Ph.D., Assistant Professor of Microscopy, Histology, and Embryology.

RAYMOND CLINTON REED, Ph.B., Instructor in Comparative Pathology and Bacteriology.

CHESTER RANSOM PERKINS, D.V.M., Assistant in Clinical Veterinary Surgery.

——— ———. Demonstrator of Veterinary Anatomy.

——— ———, Demonstrator of Veterinary Anatomy.

Professors and Instructors in Cornell University who furnish Instruction to Veterinary Students.

GEORGE CHAPMAN CALDWELL, B.S., Ph.D., Professor of Agricultural, Analytical and Physiological Chemistry.
ISAAC PHILLIPS ROBERTS, M.Agr., Professor of Agriculture.
LOUIS MUNROE DENNIS, Ph.B., B.S., Associate Professor of Analytical Chemistry.
HENRY HIRAM WING, M.S., Assistant Professor of Animal Industry and Dairy Husbandry.
WILLIAM RIDGELY ORNDORFF, A.B., Ph.D., Assistant Professor of Organic Chemistry.
JOSEPH ELLIS TREVOR, Ph.D., Assistant Professor of General and Physical Chemistry.
EMIL MONIN CHAMOT, B.S., Ph.D., Instructor in Toxicology.
AGNES MARY CLAYPOLE, Ph.B., M.S., Ph.D., Assistant in Microscopy, Histology, and Embryology.
BURTON DORR MYERS, Ph.B., Assistant in Materia Medica and Pharmacology.
FLOYD ROBBINS WRIGHT, A.B., Assistant in Bacteriology.
SAMUEL HOWARD BURNETT, A.B., M.S., Assistant in Pathology.
WILLIAM FAIRCHILD MERCER, Ph.M., Assistant in Microscopy, Histology, and Embryology.
EDITH JANE CLAYPOLE, Ph.B., M.S., Assistant in Physiology.
ROY MANDEVILLE VOSE, Assistant in Physiology.
CHARLES FREDERICK FLOCKEN, Preparator to the Department of Microscopy, Histology, and Embryology.

FOUNDATION.

The New York State Veterinary College was established by an act of the Legislature of March 21, 1894, supplemented by acts of May 10, 1895, and March 4, 1896. By these acts a sum of $150,000 was appropriated for buildings and equipment and provision made for maintenance. While a State institution, it is administered by the Trustees of Cornell University, and its students profit by courses of study in the University classes and laboratories, and by the University library.

OBJECTS OF THE INSTITUTION.

The New York State Veterinary College was founded to raise the standard of veterinary instruction and investigation to the level of the most recent advances in biology and medicine. The number of

farm animals in this State (9,450,000) and their value ($131,200,000) with a yearly product in milk alone of over 5,000,000,000 gallons, give some idea of the great interest at stake in the matter of live stock. For the United States a value in live stock of approximately $2,000,000,000 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 animal and the fostering of the animal industry, lie at the very foundation of our national wealth. Another, and no less potent argument, for the highest standard of veterinary education, is its influence upon the health of the human race. With a long list of communicable diseases, which are common to man and beast, and with the most fatal of all human maladies—tuberculosis—also the most prevalent affection in our farm herds in many districts, it is to the last degree important that measures for the extinction of such a contagion in our live stock should receive the best attention of the most highly trained experts.

To justify the liberality of the State in creating this seat of learning, it will be the aim of the College to thoroughly train a class of veterinarians for dealing with all diseases and defects that depreciate the value of our live stock, and with the causes which give rise to them ; to recognize and suppress animal plagues, which rob the stock owner of his profits and cause widespread ruin ; to protect our flocks and herds against pestilences of foreign origin, and to protect human health and life against diseases of animal origin. It will further aim, so far as it has the means and opportunity, at establishing a center of investigation, looking towards such improvements in the breeding, care and management of animals, as may enhance their market value and make returns more speedy and profitable ; toward discoveries in theraupeutics, 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 the modern medical methods, is a feature calculated to insure the best work in all departments, and the most exceptional advantages for the diligent student.

BUILDINGS.

The buildings for the State Veterinary College are seven in number, as follows :

The Main Building, 142 feet by 42 feet and three stories high, overlooks East Avenue and an intervening park 220 feet by 300 feet. The walls are of dull yellowish buff pressed brick, on a base of Gouverneur marble, window and door facings of Indiana limestone and terra cotta ornamentation. On the first floor are the museum and rooms for the dean, clerk, and the professor of surgery. The second floor is devoted to the upper part of the museum, a lecture room, reading room, library, and rooms for professors. The third floor is devoted to laboratories of histology, pathology and bacteriology and the necessary subsidiary offices.

Connected with the main building and forming its east wing is a structure of 90 feet by 40, and one story high. This contains the laboratories, lecture room, and other offices of anatomy and physiology. Its floors are of impermeable cement, the walls lined by enamelled white brick, and the ceilings coved 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 sepated from one another, and each opening by its own outer door. It has an impermeable floor, with walls of vitriffed brick and painted sheet steel ceilings.

The Mortuary Building has impermeable floor, wall of enamelled brick and painted steel plate ceilings, and is fitted with every convenience for conducting post mortem examinations and preparing pathological specimens.

Another building of 51 feet by 20 is devoted to clinical uses.

These, with a cottage for the stud groom, complete the list of State

buildings erected for the Veterinary College. The equipment has been made as complete as possible for both educational uses and original research.

VETERINARY COLLEGE YEAR.

The Veterinary College year for 1899–1900 begins Tuesday, September 26, 1899, and closes Thursday, June 21, 1900, being divided into three terms, with one intermission of eleven 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. Geography. 3. Physiology and Hygiene. 4. American History. 5. Plane Geometry. 6. Algebra, as much as is contained in the larger American and English text-books, and any *three* of the following:

8. Elementary French. 9. Elementary German. 10. Latin Grammar and Caesar. 11. Vergil, Cicero, and Latin Composition. 12. Entrance Greek. 13. An amount of any group of the following making the equivalent of two years of high school work: Physics, Botany, Geology, Vertebrate Zoology, Invertebrate Zoology, Advanced French, Advanced German.

For details as to subjects and methods of admission, see pp. 33–53.

ADMISSION ON "REGENTS' VETERINARY STUDENTS' CERTIFICATE."

Students are admitted without further examination on the Regents' *Veterinary Student Certificate.*

Full information may be obtained by addressing "Examination Department, University of the State of New York, Albany."

ADMISSION TO ADVANCED STANDING.

Admission to Advanced Standing.—Applicants for admission to advanced standing as members of the 2d or 3d year class must present the necessary educational qualifications for admission to the first year class (see p. 8), and must pass a satisfactory examination in

all the work gone over, or offer satisfactory certificates of the completion of such work in other schools whose entrance requirements and courses of study are equivalent to those of this college. No person will be admitted to any advanced class except at the beginning of the college year in September.

Applicants for advanced standing from other colleges must send or present letters of honorable dismissal, and furnish the Director, Dr. James Law, with a catalog containing the courses of instruction in the institution from which they come with a duly certified statement of the studies pursued and their proficiency therein, and also a statement of the entrance requirements with the rank gained. To avoid delay these credentials should be forwarded at an early date in order that the status of applicants may be determined and information furnished concerning the class to which they are likely to be admitted.

Graduates of veterinary colleges whose requirements for graduation are not equal to those of the New York State Veterinary College may be admitted provisionally upon such terms as the faculty may deem equitable in each case, regard being had to the applicant's previous course of study and attainments. In this connection, attention is called to the legal requirements of academic and professional education for the practice of Veterinary Medicine in the State of New York.

Admission to Advanced and Special Work.—The ample facilities for advanced and special work in the New York State Veterinary College, with allied departments in Cornell University, are open to graduates of this institution and of other colleges whose entrance requirements and undergraduate courses are equivalent.

COURSES IN VETERINARY MEDICINE.

With the view of raising the standard of veterinary instruction, it is intended to establish a graded course extending over four years, as in the various departments of Cornell University, and in the best veterinary schools abroad. As a step toward this a three year course has been laid out. This is a decided advance upon any Veterinary College in America, as the majority of even the three year schools give only five months' instruction per year amounting to but fifteen months in all ; while with an academic year of nine months, the New York State Veterinary College furnishes a total instruction period of twenty-seven months. Add to this that the Veterinary Practice Statute, prescribing two years of successful high school work as the condition of entering on veterinary studies in 1896, and four years of high school work for admission in 1897, adds more than an additional year to anything de-

manded on the part of American Veterinary Schools, and insures that a student with a mind already trained to mental processes, will acquire much more in the same length of time than the untrained mind can possibly do.

THE COURSE LEADING TO THE DEGREE OF DOCTOR OF VETERINARY MEDICINE.

First Year.	No. Course.	1st Term.	2d Term.	3d Term.
Inorganic Chemistry	1	3	3	3
Anatomy	10	2	2	2
Dissection	10	4	4	4
Microscopy and Histology	1, 2	2	2	–
Laboratory	1, 2	3	3	–
Embryology	3	–	–	2
Laboratory	3	–	–	3
Comparative Physiology	20	1	1	1
Breeds and Breeding	11	2	2	2
Materia Medica	26	–	2	–

Second Year.	No. Course.	1st Term.	2d Term,	3d Term.
Organic and Physiological Chemistry	20, 45	2	2	2
Anatomy	11	1	1	–
Dissection	11	5	7	–
Comparative Physiology	21	1	1	–
Laboratory	22	2	–	–
Pharmacology	25	1	1	1
Medicine	53	3	3	3
Surgery, General, Special	30, 31	5	3	–
Obstetrics	32, 33	–	2	4
Jurisprudence	34	–	–	1
Sanitary Science 51, or Parasitism	52	2	2	2
Bacteriology	43	1	1	1
Laboratory	43	2	2	2
Clinics, Surgery, Medicine	35, 53	3	–	6

Third Year.	No. Course.	1st Term.	2d Term.	3d Term.
Medicine	54	3	3	3
Clinics, Surgery, Medicine	35a, 54	6	6	6
Surgery	35	–	3	5
Toxicology	41	–	2	–
Zootechnics	37	–	2	–
Sanitary Science 51, Parasites	52	2	2	2
Pathology	41	2	1	–
Laboratory	41	–	1	–
Meat Inspection	42	–	–	1
Laboratory	42	–	–	1
Research and Thesis	—	3	3	3
Therapeutics	27	–	–	1

Chemistry.

In the Department of Chemistry, the Veterinary Student will take:

1. Course 1 in Inorganic Chemistry (page 148).
2. Course 20 in Organic Chemistry (page 151).
3. Course 41 in Toxicology (page 154).
4. Course 45 in Physiological Chemistry. Two hours. Winter and spring. Assistant Professor ORNDORFF.

Microscopy, Histology, and Embryology.

1. **Microscope and microscopical methods.** First half of fall term. Two hours. Two lectures, one quiz and 6½ actual hours of laboratory work. This course forms the basis for all the subsequent work given by the department. It is also designed to give a knowledge of the theory and use of the microscope and its accessories which would be advantageous for the work of any department where the microscope is employed. M., W., 8. Professor GAGE, Assistant Professor KINGSBURY, Dr. CLAYPOLE and Mr. MERCER.

This course counts two university hours for the term, although the work must all be done in the first five weeks.

2. **Vertebrate histology.** Last half of fall term (3 hours) and the winter term (5 hours). Eight hours. Two lectures, one quiz and 6½ actual hours of laboratory work. In this course are given the elements of the fine anatomy of the domestic animals and of man. It includes also methods of histologic investigation and demonstration. M., W., 8. Professor GAGE, Assistant Professor KINGSBURY, Dr. CLAYPOLE and Mr. MERCER.

This is a continuation of course 1 and is open only to those who have taken course 1, and have taken or are taking courses in anatomy and physiology.

3. **Vertebrate Embryology.** Spring term. Five hours. Two lectures, one quiz and 6½ actual hours of laboratory work. This course deals with the elements and methods of embryology in man, the domestic animals and the amphibia. M., W., 8. Professor GAGE, Assistant Professor KINGSBURY, Dr. CLAYPOLE and Mr. MERCER.

Course 3 is open only to those who have pursued courses 1 and 2.

4. **Research in histology and embryology.** Laboratory work 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 Assistant Professor KINGSBURY.

Course 4 is open only to those who have taken courses 1, 2 and

3, or their equivalent in some other University. Drawing (course 1, in Mechanical Engineering, or its equivalent) and a reading knowledge of French and German are indispensable for the most successful work in this course.

Subjects for baccalaureate theses should be decided upon if possible during the spring term of the junior year so that material in suitable stages of development and physiologic activity may be prepared.

5. **Structure and physiology of the cell.** Fall term. Two hours. Laboratory work with lectures. This course in Cytology is designed for advanced students, and gives the fundamental facts and principles relating to cell structure and activity. It also serves to train students in the more exact and refined methods of histology. Assistant Professor KINGSBURY.

Course 5 is open only to students who have had courses 1, 2 and 3 or their equivalent.

6. **Microscopy, advanced.** Spring term. Two hours. Laboratory work with lectures. In this course special instruction will be given in the theory and use of the more difficult and important accessories of the microscope, *e. g.*, the micro-spectroscope, micro-polariscope, the apertometer, the photo-micrographic camera and the projection microscope. Professor GAGE.

This course is open only to those who have taken courses 1, 2, and if photo-micrography is desired, an elementary knowledge of photography like that given in course 9, Department of Physics, is necessary.

Anatomy.

10. **General and descriptive veterinary anatomy.** Fall, winter and spring. Six hours. Two lectures, T., Th., 9; laboratory work: W., Th., F., P. M.; S., A. M. Dr. HOPKINS and Demonstrators.

11. **Descriptive veterinary anatomy.** Fall and winter. One lecture, W., 9; laboratory work: Fall, 4 hours, W., Th., F., P. M.; S., A. M., Winter, 8 hours, M., T., W., Th., F., P. M.; S., A. M. Dr. HOPKINS and Demonstrators.

This course must be preceded by course 10.

12. **Anatomical methods and gross anatomy.** Fall term. Three hours. One lecture and laboratory work. S., 12. Dr. HOPKINS.

13. **Advanced anatomy.** Winter term. Three hours. One lecture and laboratory work. S., 12. Dr. HOPKINS.

Course 13 must be preceded by course 12 or its equivalent.

14. **Human or Comparative Anatomy.** Laboratory work throughout the year. Dr. HOPKINS.

This course is open to those who have had one or more of the preceding courses.

15. **Research and thesis.** Three hours throughout the year. Dr. HOPKINS.

In this course, reports of progress will be made from time to time before the college seminary.

Comparative Physiology.

It is the aim in this department to select from a wide field of interesting topics, those which will be of greatest use to the student, in preparation for a more complete understanding of *normal* functions, as distinguished from the pathological changes so frequently encountered in the practice of human and veterinary medicine.

The fact that it is essential to know the natural before undertaking the diagnosis of unnatural conditions is thoroughly emphasized.

The lectures are supplemented as fully as possible by diagrams, preparations and experiments.

In addition to the didactic instruction a course in the laboratory is provided, which is intended to supplement and extend the lecture courses. The laboratory of comparative physiology is located, for the present, upon the second floor of the main building (Plate II). It is well lighted and equipped with necessary reagents and apparatus, additions to which are made as needed. Students are rendered every assistance in the comprehension of the fundamental parts of their work without, however, losing sight of the fact that careful observation and self-interpretation are most essential for a proper scientific training. Every encouragement is offered, to those properly fitted, to pursue their work beyond that given in the regular course. As a part of the equipment may be mentioned a kymograph, sphygmograph, induction coil and various batteries, a centrifuge and other apparatus for urinalysis.

To those intending to be teachers, as well as those contemplating the study of human or veterinary medicine, the course will be especially useful as it deals with experiments on the functional changes going on in the human and animal body, the exposition of which, is none the less important because, in many cases, of an elementary nature.

20. **The digestive functions, circulation, respiration and excretion.** The work given in this course precedes quite logically that of Pharmacology and Therapeutics. Lectures, one hour each week through the year. F., 10. Dr. FISH.

21. **The functions of the muscular and nervous systems and reproduction** are considered in this course, which is a direct continuation of course 1. Lectures, one hour each week through the fall and winter terms. W., 10. Dr. FISH.

22. **Practical work in the laboratory.** A large proportion of the work is devoted to the digestive system. Artificial digestive juices are tested upon the various kinds of food by the student and careful notes kept of the various changes. Those who can devote more than the required time are taught how to make the various digestive extracts. A course in urinalysis is also required in order that students may familiarize themselves with some of the more common but important processes occurring during health and disease. Experiments in blood pressure and upon the muscular and nervous systems will be carried on as time and opportunity permit. Fall term. Two hours. M., 2–5, W., 9–11. Dr. FISH and Assistants CLAYPOLE and VOSE.

23. **Research and thesis.** Three hours throughout the year with occasioual reports before the College Seminary. Dr. FISH.

Breeds and Breeding.

The courses in the College of Agriculture attended by veterinary students are as follows:

3. **Breeds and Breeding** (in part). The horse, breeds and breeding, feeding, education, care and driving. Fall term. Two hours. Professor ROBERTS.

10. **Animal Industry.** Principles of breeding, history and development, improvement and creation of dairy and beef breeds of cattle, principles of feeding, care, selection and management of dairy and beef cattle. Winter and spring terms. Two hours. Practice, one hour by appointment, for those electing it. Assistant Professor WING.

Pharmacology.

The term is employed in its comprehensive meaning to include not only the materials of medicine, but their preparation, use and physiological action. Allowing for certain exceptional differences, there is, in general, a great resemblance in the action of drugs in the lower animals and human beings. The efficiency of new drugs is commonly tested upon the lower forms before being applied to man. For a broad and enlightened human practice a medical course dealing with the treatment of lower animals offers a most advantageous preparation.

The more important drugs and preparations as given in the U. S. Pharmacopœia are studied, including the new ones which appear from time to time.

The clinics furnish abundant material for the use of medicines and the study of their actions.

The physiological changes in certain tissues resulting from the toxic

doses of many drugs are as yet unknown, and opportunities for research are abundant in this field.

25. **Materials of medicine.** A study of the uses and actions of the various drugs and their preparation. A varied collection of the crude drugs and their official preparations is available and examined at the recitations. The course is conducted in the form of lectures and frequent examinations. One hour each week throughout the year. M., 10. Dr. FISH.

26. **Materia medica and pharmacy.** The work in this course is divided into three parts. One month is devoted to the study of a selected group of inorganic drugs; the second month to the study of certain of the organic drugs and their official preparations; the third month to making pharmaceutical preparations, such as syrups, emulsions, spirits, liniments, tinctures, fluid extracts, extracts, ointments, pills, and others.

In their study, the students are required to write concise notes of the physiological action of the drugs examined. 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 kept well in mind. Two hours per week. Winter term. M., 2–5, W., 9–11. Dr. FISH and Assistant MYERS.

27. **Therapeutics.** The treatment and cure of diseases. This subject, standing along with pathology, unites physiology, anatomy, chemistry and botany with medicine and surgery. It is therefore desirable to have some knowledge of these branches in order to obtain a full appreciation of the means employed in the restoration of health. Lectures one hour each week. Spring term. W., 10. Dr. FISH.

This course must be preceded by the first year course in physiology, or its equivalent.

28. **Research and thesis.** Three hours throughout the year. Dr. FISH.

Reports of progress are to be made from time to time before the College Seminary.

Veterinary Medicine; Zomotic Diseases, Veterinary Sanitary Science; Parasites and Parasitism.

50. **Veterinary medicine: principles and practice.** Fall, winter and spring. Three hours. M., W., F., 8. Professor LAW.

This course extends over two years.

51. **Contagious diseases; veterinary sanitary science.** Fall, winter and spring. Two hours. T., Th., 8. Professor LAW.

[This course will be given to second and third year men in 1900–1901. See the following] :

52. **Parasites and parasitic diseases.** Fall, winter and spring. Two hours. T., Th., 8. Professor LAW.

[This course will be given to second and third year men in 1899–1900. See the preceding].

53. **Clinical veterinary medicine**; second year men. Fall, three hours; spring, six hours. Professor LAW.

54. **Clinical veterinary medicine**; third year men. Fall, winter and spring. Six hours. Professor LAW.

55. **Research and thesis.** Three hours throughout the year. Professor LAW.

Surgery, Obstetrics, Zoötechnics and Jurisprudence.

Students are not admitted to the third year in Surgery unless they have completed courses 1, 2, 10, 11 and 20 in histology, anatomy and physiology.

30. **General veterinary surgery.** Fall term. Five hours. M., W., F., 11, T., Th., 11–1. Professor WILLIAMS.

Course 30 is open only to those who have completed courses 1 and 2 in histology and course 20 in physiology.

31. **Special surgery** (head, neck, chest and abdomen). Winter. Three hours. M., W., F., 11. Professor WILLIAMS.

Course 31 is open only to those students who have completed courses 10 in anatomy, 20 in physiology and 1 and 2 in histology.

32. **Veterinary obstetrics.** Winter. Two hours. T., Th., 11. Professor WILLIAMS.

Courses 32 and 33 must be preceded by course 3 in embryology.

33. **Veterinary obstetrics.** Spring. Four hours. T., W., Th., F., 11. Professor WILLIAMS.

34. **Veterinary jurisprudence.** Spring. One hour. M., 11. Professor WILLIAMS.

[Courses 31–34 will be given to second and third year men in 1900–1901. See under course 38.]

35. **Clinical veterinary surgery**; second year men. Fall, three hours; spring, six hours. Professor WILLIAMS.

35a. **Clinical veterinary surgery**; third year men. Fall, winter and spring. Six hours. Professor WILLIAMS.

36. **Special surgery** (limbs and skin). Winter. M., W., F., 11. Three hours. Professor WILLIAMS.

37. **Zoötechnics.** Winter. Two hours. T., Th., 11. Professor WILLIAMS.

38. **Special surgery** (genito-urinary organs, castration). Spring. Five hours. M., T., W., Th., F., 11. Professor WILLIAMS.

[Courses 37 and 38 will be given to second and third year men in 1899–1900. See under course 34.]

39. **Research and thesis.** Three hours throughout the year. Professor WILLIAMS.

Comparative Pathology, Bacteriology and Meat Inspection.

40. **General Pathology.** Fall term. This course is open to students who have had Normal Histology and at least one year's work in Anatomy and Physiology. Lectures and recitations. Two hours. T., Th., 9. Professor MOORE.

41. **Pathology of infectious diseases.** Winter term. This course is open to students who have taken course 40 and have taken or are taking course 43. Lectures and laboratory work. Two hours. T., 9. Professor MOORE, Instructors REED and WRIGHT.

42. **Meat inspection.** Spring term. This course is open to students who have taken courses 40 and 41. Lectures and laboratory work. Two hours. T., 9. Professor MOORE and Instructor REED.

43. **Bacteriology.** Lectures and laboratory work. Three hours per week throughout the year. M., 9. Professor MOORE, and Instructors REED and WRIGHT.

44. **Research in pathology and bacteriology.** Laboratory work with lectures and seminary throughout the year. Professor MOORE and Instructor REED.

The course is designed for those preparing theses for the baccalaureate or advanced degrees and for those wishing to undertake original investigation in Pathology and Bacteriology. This course is open to students who have taken courses 40 and 41 if the work is in Pathology or course 43 if in Bacteriology, or their equivalent in some other university. Elementary chemistry and a reading knowledge of French and German are indispensable for successful work in this course.

TUITION FEES AND OTHER CHARGES.

Tuition is free to *students, residents of the State of New York.*

To others the annual tuition fee in the State Veterinary College is $100, $40 to be paid at the beginning of the first term, $35 at the beginning of the second, and $25 at the beginning of the third. *These fees must be paid at the office of the Treasurer* within twenty days after registration.

Laboratory materials will be charged for at cost, and every person taking laboratory work must deposit with the Treasurer security for the materials to be used.

EXPENSES.

See p. 55.

FELLOWSHIP AND PRIZES.

For fellowship see page 64.

The Horace K. White Prizes.—These prizes, established by Horace K. White, Esq., of Syracuse, are awarded annually to the most meritorious students in the graduating class of the college, as follows: To the first in merit, $15; to the second in merit, $10.

NEW YORK STATE COLLEGE OF FORESTRY.

OFFICERS OF ADMINISTRATION.

The Board of Trustees of Cornell University, in which are included the following State Officers: His Excellency, the Governor; His Honor, the Lieutenant-Governor; the Speaker of the Assembly; the Superintendent of Public Instruction; the Commissioner of Agriculture; also the President of the State Agricultural Society.

FACULTY.

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

BERNHARD E. FERNOW, LL.D., Director of the College, Dean of the Faculty, and Professor of Forestry.

FILIBERT ROTH, Assistant Professor of Forestry, Forest Manager, and Instructor in Timber Physics and Technology.

JOHN GIFFORD, D.Sc., Assistant Professor in Forestry.

----------, Superintendent of College Forest.

Professors and Instructors

in Cornell University who furnish instruction to students of forestry in the fundamental and supplementary branches required:

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

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

ESTEVAN ANTONIO FUERTES, Ph.D., C.E., M.A.S.C.E., Director of the College of Civil Engineering, and Professor of Sanitary Engineering.

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

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

JEREMIAH WHIPPLE JENKS, A.M., Ph.D., Professor of Political Economy and Civil and Social Institutions.

LUCIEN AUGUSTUS WAIT, A.B., Professor of Mathematics.
GEORGE WILLIAM JONES, A.M., Professor of Mathematics.
WILLIAM ALBERT FINCH, A.M., Professor of Law.
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.
EDWIN HAMLIN WOODRUFF, LL.B., Professor of Law.
WALTER FRANCIS WILLCOX, LL.B., Ph.D., Professor of Social Science and Statistics.
JAMES McMAHON, A.M., Assistant Professor of Mathematics.
WILLIAM RIDGELY ORNDORFF, Ph.D., Assistant Professor of Organic Chemistry.
JOSEPH ELLIS TREVOR, Ph.D., Assistant Professor of General Chemistry and Physical Chemistry.
WILLARD WINFIELD ROWLEE, B.L., D.Sc., Assistant Professor of Botany, with special reference to Histology and Systematic Botany.
CHARLES HENRY HULL, Ph.D., Assistant Professor of Political Economy.
GILBERT DENNISON HARRIS, Ph.B., Assistant Professor of Palæontology and Stratigraphic Geology.
ADAM CAPEN GILL, Ph.D., Assistant Professor of Mineralogy and Petrography.
FREDERIC JOHN ROGERS, M.S., Instructor in Physics.
BERT BRENETTE STROUD, D.Sc., Instructor in Physiology, Vertebrate Zoology and Neurology.
JOHN THOMAS PARSON, Instructor in Civil Engineering.
ELIAS JUDAH DURAND, A.B., D.Sc., Instructor in Botany.
HEINRICH RIES, Ph.D., Instructor in Economic Geology.
ALEXANDER DYER MacGILLIVRAY, Assistant in Entomology.
CARL McKAY WIEGAND, Ph.D., Assistant in Botany.
WILLIAM ALPHONSO MURRILL, A.M., Assistant in Botany.
GEORGE TRACY HASTINGS, B.S., Assistant in Botany.

FOUNDATION.

The New York State College of Forestry was established by an Act of the State Legislature in April, 1898, which act authorizes the trustees of Cornell University "to create and establish a department in said University to be known as, and called, the New York State College of Forestry, for the purpose of education and instruction in the principles and practices of scientific forestry." (Laws of New

York, 1898.) In the same act provisions were also made to establish a demonstration forest of not more than 30,000 acres in the Adirondacks, to be purchased out of the funds set aside for the Forest Preserve Board, and to become the property of Cornell University for the term of thirty years, and to be used as the "College Forest," for demonstrations of practical forestry. By the same act the Commission of Fisheries, Game and Forests is ordered to furnish the necessary guards, and to protect the property.

While a State institution, the College is administered by the Trustees of Cornell University, and its students profit by courses of study in the University classes and laboratories and by the University library, the same as other students.

OBJECT OF THE INSTITUTION.

The New York State College of Forestry is to furnish instruction in the principles and practice of forestry and provide the facilities for the education especially of managers of forest properties.

Forestry is a business which attempts to produce revenue from the systematic use of the soil for woodcrops, and the College of Forestry will primarily have in view the education of business managers, with the technical knowledge needful to carry on practical forest management.

The State of New York having recognized the necessity of a rational forest policy, has acquired a large forest property in the Adirondacks —an area unsuitable for agricultural use, hence capable only of producing woodcrops, and at the same time the most important watershed of the State, which requires the protection afforded by a persistent forest cover.

While the College will naturally keep these interests of the State in view in the education of its future forest managers and in the conduct of the school-forest, the needs of all students of forestry will find due attention. The Federal Government has entered upon a similar policy as the State of New York by creating forest reservations in the Western Mountains and several of the sister states have moved or intend to move in the same direction, which will call for technical advisers and managers. Furthermore, owners of large areas of timberland, manufacturers of lumber, of woodpulp, and others, are beginning to recognize that application of knowledge and skill in the management of their property—forestry—may prove profitable. Keeping in view these requirements it will be the aim of the College of Forestry to furnish all the needful theoretical instruction which a thoroughly

equipped forest manager should have and as much practical demonstration as it is possible to attain.

There will also be provided in the College shorter courses to meet the needs of other classes of students, namely those who as a matter of general education need to have a cursory acquaintance with the various aspects of the subject—students of political economy, of engineering, of chemical technology, etc.—and those, who as prospective owners of woodlands, farmers and others, desire some technical, especially silvicultural knowledge.

Some of the courses in the fundamental sciences offered by the University, which hitherto have not been shaped so as to meet the special needs of students in forestry, will be adapted to these special requirements. Other needful courses which did not exist will, through the interest of the professors of the University, be instituted as required.

REQUIREMENTS FOR ADMISSION.

The following subjects are required for admission : English, Physiology and Hygiene, History [student must offer two of the four following divisions in History : (a) American, (b) English, (c) Grecian, (d) Roman.] Algebra, Advanced French, Advanced German, and Advanced Mathematics.

An equivalent in Latin, (see page 38), may be offered in place of Advanced French.

[*For details as to subjects and methods of admission see pages 33–53.*

For admission to the freshman class, communications should be addressed to the Registrar. See pages 33–53.

For admission to advanced standing from other colleges and universities, communications should be addressed to the Director of the College. See pages 52 and 53.

For admission to graduate work and candidacy for advanced degrees, communications shonld be addressed to the Dean of the University Faculty. See pages 64–72.]

Since the forestry literature of the present day is to be found largely in the German and French languages, a ready reading knowledge of both languages or at least of German is essential, In order that the technical nomenclature of the sciences which form part of the forestry studies may not be unintelligible to the student, a knowledge of Latin is desirable. A thorough knowledge of mathematical methods is required to follow the lectures on forest mensuration, valuation, regulation, forest statics, and forest finance.

In addition to the mental requirements, students who expect to become forest managers are advised, that a robust physical constitution is needful to endure the hardsdips often necessarily connected with such positions.

Admission to the short and synoptical course is free to all students who furnish evidence to the Director that they are able to pursue the work elected in a satisfactory manner. The conditions applying to special students who do not desire to take the full course leading to the degree, but wish to take up certain branches, and for graduate work, are found on pages 52 and 64 of the Register.

For statement regarding fees and expenses see page 55. In general the rules of the University apply to the College of Forestry. For additional information address DIRECTOR OF STATE COLLEGE OF FORESTRY, Ithaca, N. Y.

PLAN OF INSTRUCTION.

The Regular Course leading to a degree of Bachelor of the Science of Forestry, is a four year course and is intended to prepare men fully to take charge of forest estates, private or state, to advise in administration of such estates, and prepare working plans for the same, to take charge of land and timber departments, and finally to teach the science of forestry in the colleges which are likely in the near future to provide separate chairs for forestry science and practice.

The first two years of this course are mainly devoted to the study of preparatory or basal subjects, natural sciences, mathematics, engineering, political economy, etc., and the last two years to forestry proper.

ONE TERM COURSE.

To meet the requirements of students of political economy and others who desire a survey of the subject of forestry as a matter of general education, a synoptical or introductory course of two hours per week during the fall term, repeated if desirable during the spring term, will be given.

This course is open to all comers, requires no special preparation except the intelligence of a general student, and is intended to convey such information as is necessary to understand the position and relation of forests and forestry to the commonwealth, and the general features of the business and art of forestry.

TWO TERM COURSE.

This short course is intended for special students, farmers, lumbermen, young men who cannot well spend four years in preparing

themselves to become foresters and who yet wish to avail themselves of technical and practical instruction in forestry that might enable them to manage more intelligently their own woodlands. The course will occupy itself mainly with the elucidation of silvicultural problems, treating the business considerations of forest management only cursorily. It will occupy three hours per week through fall and winter. This course will be given in 1899–1900 only if students in sufficient number are found to take advantage of the same.

THREE YEAR COURSE.

The regular course is so arranged that students who can spend only three years at the College will by the end of the third year have acquired not only a full preparation in the fundamental sciences but also in all the forestry branches which are essential for the successful management of woods, for which working plans have been prepared. One more term in the fourth year will give that knowledge also, namely, the making of working plans. To such students, having satisfactorily proved their efficiency in the studies prescribed for the three years, the designation of "Forester" will be give.

FIELD WORK.

In addition to short excursions into neighboring woods, to milling and wood manufacturing establishments, etc., during fall and winter terms of the junior and senior classes, these classes will spend the entire spring term at Axton, N. Y., in the College Forest, these terms to be devoted mainly to practice and field work. Such field work will include:

a. Exploitation and surveying. Inspection of lumber camps, logging operations, transportation methods and mills. Laying out and construction of roads. Methods of dividing and marking forest areas.

b. Silviculture: Inspection of and participation in plantings, sowings and nursery work, making improvement cuttings, marking out for thinnings, and for natural reproduction.

c. Mensuration and valuation: Tree measurement and studies of the rate of growth, timber estimating.

d. Forest description and regulation: Gathering data for working plans, and elaboration of such plans for given areas.

In addition ample opportunity is given during the freshman and sophomore years for fieldwork in botany, entomology, geology, and surveying.

THE COURSE IN FORESTRY LEADING TO THE DEGREE OF BACHELOR OF THE SCIENCE OF FORESTRY.

The courses of the spring term in the junior and senior years will be given in the College Forest at Axton, N. Y. Students must therefore arrange their courses in other branches so as to keep the spring term entirely free for work in the woods.

[*Courses in parenthesis are elective in whole or in part.**]

Freshman Year.	No. Course.	1st Term.	2d Term.	3d Term.
Solid Geom. Adv. Algebra. Pl. and Sph. Trig. (Math.)	7	2	2	2
Anal. Geom. Calculus. (Mathematics)	10	(3)	(3)	(3)
Physics	2a	2	2	2
Physics	2b	(5)	(5)	(5)
Chemistry	1	3	3	3
Invertebrate Zoology	1, 3	3	–	3
Vertebrate Zoology	2	–	3	–
Botany	1, 2	3	3	3
Mineralogy (Geology)	10	–	3	–
Meteorology (Geology)	23	2	–	–
Forestry	1	–	–	2
Political Economy	34	–	–	3
Sophomore Year.	No. Course.	1st Term.	2d Term.	3d Term.
Chemistry	16	4	4	(4)
Entomology	7	–	2	–
Entomology	4, 5	(3)	–	(3)
Dendrology (Botany)	9	3	–	–
Geographical Botany	5	–	–	1
Stratigraphic Geology	1	3	–	–
General Geology	21	3	3	3
Soils (Geology)	32	–	2	–
Pen Topog. (Engineering)	4	–	2	–
Land Surv. (Engineering)	5	–	–	4
Political Economy	51	–	3	3
Forestry	2	(3)	(3)	–
Junior Year.	No. Course.	1st Term.	2d Term.	3d Term.
Chemistry	21b	2	–	–
Botany	11	3	3	–
Physical Geography (Geology)	22	(3)	(3)	(3)
Pisciculture and Venery	–	–	2	2
Forestry	3	4	4	–
"	13	–	–	5
"	4	–	–	3
"	6	–	3	–
"	15	–	–	5
"	7	–	3	–
"	14	–	–	3

*All electives must be chosen at the beginning of the year with the previous written approval of the Director.

Senior Year.	No. Course.	1st Term.	2d Term.	3d Term.
Political Economy	59	(2)	(2)	–
Law	–	2	2	–
Forestry	5	4	–	–
"	8	4	–	–
"	16	–	–	10
"	17	–	–	2
"	9	–	2	–
"	10	–	3	–
"	11	–	2	–
Seminary	–	2	2	2

The courses in fundamental and supplementary branches are selected from those offered in the Departments of the University. Some of these courses are fuller than necessary for students in forestry, and may possibly be shortened, leaving more room for Electives. The courses advised are: Mathematics, 7; Physics, 2a; Chemistry, 1, 16, 21b; Zoology: Invertebrate, 1, Vertebrate, 2, Entomology, 3, 7; Botany, 1, 2, 5, 9, 11; Geology, 1, 10, 21, 22, 23, 32; Engineering, 4, 5; Political Economy, 34, 51, 59.

Courses in Forestry.

(Days and hours to be arranged.)

1. **Synoptical Course in Forestry.** Economic Nature and Political Aspects. Designed especially for students of Political Economy, Agriculture, Engineering, and freshmen in the College of Forestry, to acquaint the student in a brief manner with the several subjects comprising the field of forestry. Lectures only. Two hours. Spring term. Professor FERNOW.

2. **One-year Course in Forestry, with special reference to Silviculture.** Designed especially for Agriculturists and others who desire a brief study of the technicalitics of woodcraft and silviculture. Lectures and demonstrations. Three hours. Fall and winter. Assistant Professor GIFFORD.

3. **Silviculture.** Principles of arboriculture, application of dendrology to crop production, methods of reproduction, improvement of the crop, nursery practice and forest planting. Lectures, recitations and field demonstrations. Four hours. Fall and winter. Professor FERNOW.

4. **Forest Protection.** Methods of guarding against trespass, loss from fires, insects and diseases; measures to prevent erosion, washing and deterioration of soils. Lectures and recitations. Three hours. Spring term. Assistant Professor GIFFORD.

5. **Timber Physics and Wood Technology.** Technical properties of wood and its uses. The course is arranged to meet also the needs of students in Civil Engineering, Architecture, and others interested in the properties and uses of wood. Lectures, recitations and laboratory work. Four hours. Fall. Assistant Professor ROTH.

6. **Exploitation.** Methods and means employed in the harvest of forest products, logging, transportation, milling, and preparation of wood for market. Lectures and recitations. Three hours. Winter term. Excursions to actual operations and points of manufacture. Assistant Professor ROTH.

7. **Forest Mensuration.** Methods of ascertaining volume of felled and standing trees, of whole forest growths, timber estimating, determining accretion of trees and stands. Lectures, laboratory and field work. Three hours. Winter. Assistant Professor ROTH.

8. **Forest Regulation.** Principles and methods underlying the preparation of plans of management for continuous wood and revenue production. Lectures and recitations. Four hours. Fall term. Field work in spring. Professor FERNOW.

9. **Forest Valuation.** Principles and methods of ascertaining the money value of forest growths at different ages for purposes of sales, exchanges, damage suits, etc. Lectures. Two hours. Winter term. Assistant Professor GIFFORD.

10. **Forestry Statics and Finance.** Application of the principles of finance to forest management; methods of finding the most profitable form of management, determining rotation and expenditures with reference to revenue. Lectures and recitations. Three hours. Winter term. Professor FERNOW.

11. **Forestry History and Politics.** Historical development of the economic and technical features of modern forestry; forestry conditions at home and abroad; forests and forestry as factors in the household of the community and nation; basis and principles underlying forest policies of the State. The course will prove of value and interest to students of political economy. Lectures only. Two hours. Winter. Assistant Professor GIFFORD.

12. **Seminary in Reading of German Forestry Literature.** Two hours. Fall and winter. Professor FERNOW and Assistant Professor GIFFORD.

[*The following courses are given during the Spring term in the College Forest*].

13. **Practicum in Silviculture.** Nursery practice, planting in forest, improvement cuttings, marking for seed cutting, etc. Five hours. Assistant Professor ROTH.

14. **Practicum in Forest Mensuration.** Three hours. Assistant Professor ROTH.

15. **Practicum in Exploitation and Surveying.** Visits to logging operations, illustrating fellings, skidding, landing, driving, transportation, milling. Laying out and constructing roads. Methods of subdividing and marking forest areas. Five hours. Assistant Professor ROTH.

16. **Practicum in Forest Regulation.** Thesis work. Making of a working plan for a given area.

17. **Forest Administration.** Organizing a forestry service, manner of employing and supervising labor, business methods as applied to forest management. Lectures and recitations. Two hours. Spring term. Assistant Professor GIFFORD.

18. **Pisciculture and Venery.** Practical demonstrations and lectures by special lecturers.

COLLEGE OF ARCHITECTURE.

FACULTY.

JACOB GOULD SCHURMAN, A.M., D.Sc., LL.D., President.
CHARLES BABCOCK, A.M., Professor of Architecture, Emeritus.
ALEXANDER BUEL TROWBRIDGE, B.S. in Arch., Professor of Architecture in charge of the College of Architecture.
CLARENCE AUGUSTINE MARTIN, Assistant Professor of Architecture.
JOHN V VAN PELT, Architecte Diplomé par le Gouvernment de France, Assistant Professor of Architecture.
OLAF M BRAUNER, Assistant Professor of Drawing and Modeling.
——— ———, Instructor in Architectural Drawing.

REQUIREMENTS FOR ADMISSION.

The following subjects are required for admission: English, Physiology and Hygiene, History, [the student must offer two of the four following divisions in History: (a) American, (b) English, (c) Grecian, (d) Roman], Plane Geometry, Elementary Algebra.

In addition to the above primary entrance subjects, the applicant must offer as below:—

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

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

3. The applicant must present a Regents' diploma (see page 50), or a certificate of graduation from an approved school (see page 51). Otherwise he must, in addition to the requirements mentioned in 1 and 2, pass examinations or present acceptable certificates representative of an amount of work equivalent to three years time in a single subject in preparatory schools of approved standing.* This additional requirement is equivalent to 12 counts on the Regents' scale in the State of New York.

For the above work a free choice among the various subjects not otherwise counted, that are taught in the preparatory schools of approved standing, will usually be accepted; while at the same time,

* For students from the State of New York, this requirement is equivalent to 12 counts on the Regents' scale.

combinations of the following subjects are recommended as the most suitable for entrance to the course in the College of Architecture: Physics, Chemistry, Geology, Free-Hand Drawing, and the alternative Modern Language.

[*For details as to subjects and methods of admission see pages 33–72.*

For admission to the freshman class communication should be addressed to the Registrar. See pages 33–52.

For admission to advanced standing from other colleges and universities, communications should be addressed to the College of Architecture. See pages 52 and 53.

For admission to graduate work and candidacy for advanced degrees, communications should be addressed to the Dean of the University Faculty. See pages 64–72.]

DESCRIPTION OF THE COURSE IN ARCHITECTURE.

A good course in Architecture may be divided into four main parts; 1, Construction, both theoretical and practical; 2, Expression, or the technical representation of architectural and decorative ideas on paper; 3, Composition, which includes the science of convenient and effective planning and the art of architectural and decorative design; 4, that broad field which the literature of architecture covers and in which are included History of Architecture and the many interesting and important questions which arise in connection with the practice of architecture and which often belong to the allied professions, such as Engineering and Law. The following course has been based upon this frame work. Minor changes and additions may be made from time to time, but the scheme of teaching will, in general, be carried on as described below in detail.

Construction and Practice.

Under this head are grouped all of those courses bearing on the purely practical work of the profession as distinguished from the aesthetic. The aim is to give the student a thorough grounding in the principles underlying sound construction, sanitation, and the best practice in the installation of all modern conveniences. After the pure mathematics, the technical work begins with a course in Mechanics of Materials in which the theory of mechanics is taught and the strength of materials discussed. This is followed by the work in Structural Details which makes direct application in a special way of the principles taught in the preceding course.

The ordinary problems relating to materials and construction are taken up in the Masonry Construction 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 under a specialist; and plumbing and sanitary engineering of buildings, and the discussion of building contracts are subjects for special work in the seminaries. The drawing in connection with the above work is made to conform as closely as possible to the work done in the preparation of working drawings in an office, with the advantage that it can be arranged in a consecutive and progressive order. In conjunction with the lectures on the planning of domestic buildings (part of this course), the student makes sketch plans and designs for a series of buildings ranging from the simple laborer's cottage to the more elaborate mansions built without the hamper of a cost limit. Following this special drill in planning and design, he is required to design a building of moderate cost—usually a dwelling-house—under such limiting conditions as might be imposed by a client, prepare the complete scale working drawings, and make typical full size details for its construction.

Throughout all of his work the student is required to construct scientifically rather than by "rule of thumb." In the senior year he is prepared to take up the course in advanced construction which is devoted to the consideration of steel and fireproof construction, and consists of a series of fully illustrated lectures and the working out of steel framing plans, foundations for heavy buildings, and the details of steel columns, girders, and trusses.

Expression.

This includes free-hand drawing, drawing from the antique and from life, modeling, sketching from nature, elements of architecture, shades and shadows and perspective. The aim of this work is to train the eye to a sense of form and color, the hand to steadiness and delicacy of touch, and the judgment to a nice distinction between values. In all of this work the attitude of the architectural student is precisely that of the sincere art student. False, exaggerated effects for the sake of attracting attention are discountenanced, but vigorous, effective presentations of architectural ideas, in harmonious tones inspired from nature, are heartily encouraged.

Composition.

This subject is taught by means of a succession of problems throughout the second, third and fourth years. Programs of competition are issued upon pre-arranged dates, and each student is required to hand

in a set of drawings showing his own interpretation of the problem as governed by the conditions. These drawings are judged by a jury composed of the entire faculty of architecture, the acceptable drawings being graded mention, first mention, second medal and first medal, according to the excellence of solutions. In the judgment each member of the faculty pays particular attention to that part of the work which is the result of his special teaching. For example, the Professor of Construction studies the constructability of the designs while the Professor of Free-Hand Drawing criticizes the sculptural details and the general color schemes of the designs. Thus not only do the drawings receive careful criticism, but the Professors are able to follow the results of their teaching, while all in the faculty maintain a lively interest in the progress of architectural design, which is conceded to be the chief aim of architectural schools. In order to avoid the danger of becoming too theoretical, the course in working drawings, described under construction, is introduced after the students have spent their sophomore year in design. Experience has shown that this work has a wholesome influence upon the students, rendering more practical and sensible their work in the latter part of the course.

History of Architecture, etc.

Ancient Greece, in her philosophy, her literature and her art, has affected to an incalculable degree the civilization of modern times. The architectural influence percolating through Rome and the Renaissance has brought down to to-day traditions and architectural motives which serve admirably as sources of inspiration. Imitation, however, of decorative forms which served to describe the kind of civilization which 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 of line and silhouette are matters which will always deeply concern the student of architecture and should be carefully studied in the monuments of all ages. The reserve of the Greeks contrasted with the wonderful daring of the Gothic builders presents an illustration of the qualities that are needed in our own building architects. The study of the History of Architecture is regarded in this course as a source of inspiration rather than as a means of acquiring materials and motives for use after leaving the University. While it is true that the work in design shows throughout the three years a good deal

of absolute imitation of historic forms, this wholesale adaptation is encouraged in the belief that the students will recognize in this way the true relation of historic motives to modern work : in other words it is believed that the students will see that historic motives are useful and necessary as helps in the study of the broad principles of composition, but that they should be only considered necessary *during student days*. History of Architecture is taught through lectures illustrated by means of models, photographs and lantern slides.

The subjects cared for by the Seminary, such as legal questions, professional practice, special engineering problems, etc., are practically only touched upon. With all the work which 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 which do not come properly within the scope of an architect's practice. Eminent specialists are invited each year to talk before the students on subjects allied to architecture but which cannot be specially taught in a College of Architecture. Stained glass, mosaics, furniture, mural painting, etc., are some of the topics that come under this head.

EQUIPMENT.

The rooms of the College are located on the second and third floors of Lincoln Hall, and consist of the offices, library, lecture rooms, drafting rooms, rooms for freehand drawing, water color, modeling, 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 undertaken indoors.

Through the patient and untiring efforts of Professor Babcock over a period of twenty-five years, the College now has in its possession a large and valuable collection of wood, stone, and plaster models illustrating the historical development of architectural form and construction.

For the work in construction there is, in addition to the library and models, a fine collection of working drawings of well known modern buildings which is being constantly added to by contributions from the offices of many of the leading architects from all parts of the country; and as large a collection of samples of building materials as can be handled within the limits of space available.

An important part of the equipment for lecture work and illustrations is an electric lantern and a large collection of lantern slides (several thousand) that is revised and enlarged each year.

FELLOWSHIPS.

The College of Architecture possesses a Traveling Fellowship and a Resident Fellowship. The Traveling Fellowship of the value of $2,000 is awarded in alternate years to the winner of an architectural competition. The first competition was held in October, 1898, and the second will occur during the summer or fall of 1900. 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 second competition will be sent to all qualified candidates several weeks in advance of the issue of the program of competition. For further information address the Professor in charge of the College of Architecture, Ithaca, N. Y.

A Resident Fellowship of the annual value of $500 is open to all graduates of schools of architecture of approved standing in the world. The award is made in June for the following year, and each candidate must submit drawings and other credentials and file a formal application with the Registrar of the University on or before April 15th. Application forms may be obtained of The Registrar, Ithaca, N. Y.

THE COURSE LEADING TO THE DEGREE OF BACHELOR OF ARCHITECTURE.

Freshman Year.	No. Course.	1st Term.	2d Term.	3d Term.
French or German	1	3	3	3
Analytical Geometry	3	3	–	–
Calculus	3	–	3	3
Elements of Architecture	1	3	3	5
Freehand Drawing	2	3	3	3
Descriptive Geometry	3	2	2	–
Shades and Shadows	3	–	3	–
Perspective	4	–	–	3
Hygiene	1	1	–	–
Drill and Gymnasium	1	2	4	2
Sophomore Year.	No. Course.	1st Term.	2d Term.	3d Term.
History of Architecture	20	3	3	3
Design	21	8	8	8
Drawing from the Antique	22	3	3	–
Mechanics	7a	4	–	–
Structural Details	10	–	3	–
Masonry Construction	23	–	–	3
Sketching from Nature	24	–	–	2
Drill	1	2	–	2
Junior Year.	No. Course.	1st Term.	2d Term.	3d Term.
History of Architecture	30	3	3	–
History of Art	31	1	1	1
Working Drawings	32	14	–	–
Design	33	–	12	14
Seminary	34	1	1	1
Modeling	35	–	–	2
Heating and Ventilation	36	–	–	2
Geology	31	–	2	–
Senior Year.	No. Course.	1st Term.	2d Term.	3d Term.
Design	40	14	14	18
Construction	41	–	5	–
Theory of the Arch	16	3	–	–
Modeling	42	2	–	–
Seminary	43	–	–	2

A two year special course in Architecture.

Not leading to a degree, but a certificate will be issued upon satisfactory completion of the following course. Candidates proficient in any of the subjects scheduled in this course will be allowed to substitute other architectural subjects in their stead. For entrance requirements address the Professor in charge of the College of Architecture.

First Year.	1st Term.	2d Term.	3d Term.
Design	8	8	8
History of Architecture	3	3	3
Freehand Drawing	4	3	3
Descriptive Geometry	2	2	–
Shades and Shadows	–	3	–
Perspective	–	–	3
Modeling	–	–	2
Second Year.	1st Term.	2d Term.	3d Term.
Working Drawings	14	–	–
Design	–	12	14
History of Architecture	3	3	–
Drawing from the Antique	3	3	–
Masonry Construction	–	–	3
Sketching from Nature	–	–	2

Freshman Year.

1. **Elements of Architecture.** The five orders of Architecture drawn and rendered in India Ink and in Color. Fall and winter nine draughting hours per week. Spring twelve draughting hours and one lecture per week. Professor TROWBRIDGE.

2. **Freehand Drawing.** Charcoal drawing from the cast. Nine hours per week throughout the year. Assistant Professor BRAUNER.

3. **Shades and Shadows.** One lecture and six draughting hours per week. Winter term. Professor TROWBRIDGE.

4. **Perspective.** One lecture and six hours draughting per week. Spring term. Water color rendering of perspectives is a part of this course. Professor TROWBRIDGE and Assistant Professor MARTIN.

Sophomore Year.

20. **History of Architecture.** Fall: Egyptian, Greek and Roman Architecture. Winter: Romanesque and Byzantine, Architecture. Spring: Gothic Architecture. Three lectures per week throughout the year. Tu., Th., Sat., at nine. Mr. ———

21. **Design.** Periodical competitive problems arranged to occupy about twenty-four draughting hours per week throughout the year. Criticisms four times per week throughout the year and one lecture per week in winter and spring. Assistant Professor VAN PELT.

22. **Drawing from the Antique.** Charcoal and pencil drawing from plaster casts. Nine hours of drawing per week through fall and winter terms. Assistant Professor BRAUNER.

23. **Masonry Construction.** Spring term. Three hours. Lectures, discussions and drawing. Assistant Professor MARTIN.

24. **Sketching from Nature.** Two afternoons per week in spring term in out-of-door sketching in pencil and water colors. In bad weather this class works from still life groups indoors. Assistant Professor BRAUNER.

Junior Year.

30. **History of Architecture.** Fall. Renaissance Architecture. Winter. Modern Architecture. Three lectures per week in these terms. Mr. ———

31. **History of Art.** One lecture per week throughout the year on Friday afternoon at four o'clock. Assistant Professor BRAUNER.

32. **Working Drawings.** Fall. Fourteen hours. From 3 to 5 lectures and from thirty-five to forty hours drawing each week throughout the term. The term's work begins with a series of problems requiring sketch plans for a number of residences of the various classes both country and city, after which some good type of building is selected and the students are required to make preliminary sketches, complete quarter scale working drawings, several sheets of full size details, etc. During the latter half of the term and in conjunction with the scale and full size detail drawings one hour a day is given to a careful and thorough discussion of specifications, and the work pertaining to the various trades represented in building domestic structures. Assistant Professor MARTIN.

33. **Design.** Periodical competitive problems arranged to occupy about thirty-six hours per week in the winter and about forty-two hours per week in the spring. Criticisms four times a week and one lecture per week in the winter and spring term. Assistant Professor VAN PELT.

34. **Seminary.** Reviews of current technical journals. Papers and discussions upon subjects of professional interest not covered by other courses. One hour per week throughout the year. Assistant Professor MARTIN.

35. **Modeling.** Six hours per week in clay modeling from busts, architectural ornaments, animals heads, etc. Assistant Professor BRAUNER.

36. **Heating and Ventilation.** Two lectures per week through spring term. Professor CARPENTER.

Senior Year.

40. **Design.** Periodical competitive problems arranged to occupy about thirty-nine hours per week in the fall, forty-two hours in the

winter and fifty-four hours in the spring. Criticism four times per week throughout the year and one lecture per week in the winter and spring terms. Assistant Professor VAN PELT.

41. **Construction.** Five hours. This course consists of lectures and drafting room work and deals with the problems of special foundations, underpinning, steel buildings, fireproofing, etc. Assistant Professor MARTIN.

42. **Modeling.** A continuation of course 35, consisting of six hours per week in clay modeling. Assistant Professor BRAUNER.

43. **Seminary.** Papers on legal questions, disputes and judgments, contracts, competitions, professional practice, office methods, superintendence, etc. Spring term. One two hour session on one evening of each week. Professor TROWBRIDGE and Assistant Professor MARTIN.

COLLEGE OF CIVIL ENGINEERING.

FACULTY.

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

ESTEVAN ANTONIO FUERTES, Ph.D., C.E., M.A.S.C.E., Director of the College, Dean of the Faculty, and Professor of Sanitary Engineering.

IRVING PORTER CHURCH, C.E., Professor of Applied Mechanics and Hydraulics, in charge of the College Library and the Hydraulic Laboratories.

CHARLES LEE CRANDALL, C.E., Professor of Railway Engineering and Geodesy, in charge of the Geodetic Laboratory and Instrumental Equipment.

HENRY SYLVESTER JACOBY, C.E., Professor of Bridge Engineering and Graphics, in charge of the Museums.

GARDNER WILLIAMS, C.E., Professor of Experimental Hydraulics, in charge of the Hydraulic Laboratory at Fall Creek.

HENRY NEELY OGDEN, C.E., Assistant Professor of Civil Engineering, in charge of the Sanitary Laboratory and Civil Constructions, and Secretary of the College Faculty.

WILLIAM ELTON MOTT, S.B., Instructor in Civil Engineering, in charge of the Junior Laboratory, and Registrar of the College.

JOHN THOMAS PARSON, Instructor in Civil Engineering, in charge of the Photographic Laboratory and Drawing Collections.

ELMER JAMES McCAUSTLAND, C.E., M.C.E., Instructor in Civil Engineering, and Assistant in the Laboratories.

CLAUDE WILLIAM LEROY FILKINS, C.E., M.C.E., Instructor in Civil Engineering, in charge of the Astronomical Equipment.

IRA WELCH McCONNELL, C.E., Instructor in Civil Engineering, and Assistant in the Laboratories.

EDGAR KAY, C.E., Instructor in Civil Engineering, and Assistant in the Laboratories.

—— —— ——, Instructor in Civil Engineering, and Assistant in the Laboratories.

FRANK W. SKINNER, C.E., Lecturer in Field Engineering.

EBENEZER TURNER, C.E., Lecturer in Meteorology.

Members of the Faculty of Arts and Sciences who are heads of the departments in whose courses the students of this College receive non-

professional instruction. Arranged in the order of seniority of University appointments :

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

THOMAS FREDERICK CRANE, A.M., LL.D., Professor of Romance Literature.

HORATIO STEVENS WHITE, A.B., Professor of German Literature.

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

EDWARD HITCHCOCK, JR., A.M., M.D., Professor of Physical Cultnre.

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

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

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

GEORGE FRANCIS ATKINSON, Ph.B., Professor of Botany.

RALPH STOCKMAN TARR, B.S., Professor of Geology.

WALTER SCRIBNER SCHUYLER, Colonel, U.S.A., Professor of Military Science and Tactics.

WILLIAM ORLANDO STUBBS, Mechanician to the College of Civil Engineering.

EDWARD CHARLES MURPHY, M.S., C.E., Fellow in Civil Engineering.

CHESTER TORRANCE, C.E., Scholar in Civil Engineering.

Special Lecturers for 1898-99.

The non-resident lecturers before the College of Civil Engineering are as follows :

GEORGE S. MORRISON, C.E., New York, Past President Am. Soc. Civil Engineers: "On Masonry Structure."

MAJOR THOMAS W. SYMONS, Buffalo, N. Y., Corps of Engineers U. S. Army: "The Buffalo Breakwater."

JOHN C. TRAUTWINE, JR., Philadelphia, Pa., Chief Engineer of the Philadelphia Water Bureau : "The Philadelphia Water Works System."

ONWARD BATES, C.E., Milwaukee, Wis.. Superintendent of Bridges and Buildings, Chicago, Milwaukee & St. Paul R. R. Co., "The Engineer at Work."

HENRY GOLDMARK, C.E., Detroit, Mich., Engineer with the U. S, Deep Water Commission : "Locks and Lock Gates for Ship Canals."

GEORGE W. RAFTER, Rochester, N. Y., Consulting Hydraulic Engineer, etc.: "Stream Flow in Relation to Forests."

DAVID MOLITOR, U. S. Assistant Engineer on River and Harbor Improvements: "The Present Status of Engineering Knowledge respecting Masonry Construction."

EDWIN DURYEA, C.E., Brooklyn, N. Y.: "Qualities and Habits of Work Necessary to attain Success in Civil Engineering."

GENERAL PLAN OF STUDIES.

The courses of preparatory and professional studies have been planned with a view to laying a substantial foundation for the general and technical knowledge needed by practitioners in civil engineering; so that our graduates, guided by their theoretical education and as much of engineering practice as can be taught in schools, may develop into useful investigators and constructors.

The facilities for instruction and for advanced investigations are believed to be thorough and efficient. Laboratory work is required of the students in chemistry, mineralogy, geology, physics, 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 undargraduate student is based upon an extended course upon the mechanics, and the graphics and economics of engineering. The object aimed at is to give as thorough a preparation as possible for the general purposes of the profession in the following subjects: the survey, location, and construction of railroads, canals, and water works; the construction of foundations in water and on land, and of superstructures and tunnels; the survey, improvements, and defenses of coasts, and the regulation of rivers, harbors and lakes; the astronomical determination of geographical coördinates for geodetic and other purposes; the application of mechanics, graphical statics, and descriptive geometry to the construction of the various kinds of right and oblique arches, bridges, roofs, trusses, suspension and cantilever bridges; the drainage of districts, sewering of towns, and the relaiming of lands; the design, construction, application and tests of wind and hydraulic motors, air, electrical and heat engines, and pneumatic works; the preparation of detail drawings, of plans and specifications, and the proper inspection, selection, and test of the materials used in construction. A course of lectures is given in engineering and mining economy, finance and 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 extending over one year, of three lectures per week, is given for the purpose of elucidating the economic value of the civil engineer as director of industrial enterprises, and their rôle in the development of the country.

To the fundamental instruction of a general undergraduate course, many special courses are in full operation for graduates desiring advanced study in the separate branches of their profession. Admission to these courses is open to civil engineers of this or other institutions having undergraduate courses similar to our own. Advanced and special instruction is offered in the following subjects: bridge engineering, railroad engineering, sanitary, municipal, hydraulic and geodetic engineering. The object of this instruction is to provide the young graduate with the means of prosecuting advanced investigations after such experience in professional life as may lead him to decide in the choice of a specialty. The same courses are open to teachers and professional men in a more advanced form and with larger liberty in the use of laboratory equipment. Lectures in the museum and laboratories are given to these students for the purpose of directing and aiding their original researches. All graduate work may alternate with a limited number of elective studies in other colleges of this University; but the choice of electives implies suitable preparation for their prosecution, and must, besides, meet with the approval of the Director of the College.

The College of Civil Engineering is quartered in a substantial brown stone structure, two hundred feet long and seventy feet wide, specially designed for the purposes of the college. In addition to the laboratories and museums, the building contains the working library of the college, aggregating about three thousand volumes, reading-rooms, class rooms, and draughting rooms. The building contains also the offices of the professors, the offices of the U. S. Weather Bureau for the State of New York, and the meteorological observatory of the college of civil engineering. The astronomical department of this college is housed in an observatory containing all the instruments required to find time, latitude, longitude and azimuth. The instruments are duplicates, in the main, of similar ones in use by the U. S. Coast and Geodetic Survey. The great Hydraulic Laboratory with its equipment, buildings and appurtenances is located at the Fall Creek gorge, within a short distance from the College buildings.

LABORATORIES.

The Civil Engineering Laboratories within the college build-

ing, 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 the special laboratories.

2. **An Hydraulic Laboratory** with complete appliances for determination of "efficiency" ; piping, mouth-pieces, and special castings, for the derivation of coefficients ; wiers provided with all forms and heights of notches and orifices ; gauges, electrical and automatic devices for the most refined measurements of weights, pressures, velocities, equilibrium, viscosity, efflux in closed and open conduits, water reaction, etc. On the south bank of Fall Creek another laboratory is nearly finished consisting of a canal about five hundred feet long, sixteen feet wide and with ten feet of water depth. It is provided with waste and calibrating wiers at the upper end : and close to the canal and outside of it, a pipe 48 inches in diameter will tap a steel stand pipe six feet in diameter and seventy feet high. The stand pipe can be fed at will from the canal directly, or from the 48 inch pipe above mentioned. The six feet pipe pierces the roof of a building which will house nearly all the machinery for experiments with water motors ; and by means of reducers, the coefficients of efflux for pipes varying from four feet to six inches in diameter can be derived for suitable lengths and all conditions of internal surface and alignment. This house will also supply power for the maneuvers and apparatus in the canal above. Half way up, above the lower laboratory, a platform built around the stand pipe and reached by spiral stairs, will supply orifices of all sorts for experiment with thin plates, and short tubes and nozzles, valves and elbows. The canal will be used for experiments upon the motion of water in open channels ; upon the regulation of wiers, the relative conditions of the dragging and suspending power of running water ; the resistance of water to the motion of boats, as to their form, size, surface condition and ratio of their cross-section to that of the canal ; experiments upon the motion of sewage as to diameter and grade of pipes, and the effect of flushing ; and in addition to numberless experiments of much importance, this canal provides both material and problems for study in connection with the pollution of streams, purity of filter effluents and other special features of the sanitary laboratories described further on.

3. **A Cement Laboratory** provided with automatic machines for the establishment of standard tests. The furniture of this laboratory has been designed by specialists in view of its needs. Standard conditions are aimed to be obtained in all tests, nearly independent of

human agencies; and from the sifting of the cements, through the operations of moulding, mixing, condensing, and testing, to even portions of the computations, every maneuvre in this laboratory is done by machinery. The time of setting of cements is obtained by a machine describing curves characteristic of their nature.

4. **A Bridge Laboratory** for the study of stresses in many types of trusses, the determination of the effect of permanent and variable strains upon the nature and requirements of bridge designs and their details, etc. This laboratory has under way important investigations, and has lately been fitted with an original apparatus of great accuracy for determining the compressibility and modulus of elasticity of stones.

5. **The Gravimetric Laboratory** where cold and hot pendulums swing in connection with other instruments of precision. The college mechanician has now completed a set of half second pendulums for field work determinations of the force of gravity, and studies on the form of the earth like the extremely accurate ones devised by President Mendenhall for the U. S. Coast Survey, with improvements suggested by previous experience with them.

6. **A Geodetic Laboratory** for the determination of the values and errors of graduation of circles and levels of high precision, fitted with level testers, collimators, cathetometers, etc., etc.

7. **A Magnetic Laboratory** in which is acquired the skill necessary to use the Kew magnetometer and Barrow's circle. The instrumental constants are derived in an isolated "copper house"; but the magnetic quantities are obtained each year, by the students in civil engineering, at the astronomical stations of the systematic survey of the State. This work has been carried on since 1874 under the ausdices of Cornell University.

8. **A Metric Laboratory** for the absolute comparison of lengths, provided with line and end comparators and dividing engines, with independent microscopes mounted on isolated piers. This room is built with hollow double walls, and provision has been made to maintain it at a constant temperature. It has been constructed with great care, and contains a four meter comparator of extraordinary precision. Telescopic observations may be made through tubes in the walls, which avoid the necessity of entering the room, thus disturbing its temperature. In this laboratory are placed many other machines and apparatus for experimentation in such portions of optics, thermo-dynamics, etc., as form special parts of the educational equipment of the engineer.

9. **A Bacteriological Laboratory** in which students may become acquainted with bacterial forms and such portions of the subject as bear upon sanitary engineering. The optical apparatus has been ex-

pressly manufactured for us by Reichert 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. Rohrbeck of Berlin. With these exceptions the equipment contains apparatus specially manufactured by the mechanician of the college.

10. **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.

11. **An Astronomical Laboratory** near the main building, contains an astronomical transit by Troughton and Sims, provided with two collimators ; a sidereal clock ; a four-and-half inch Clark equatorial ; two large altazimuths reading to seconds by levels and micrometers ; and two three-and-three-eights inch zenith telescopes by Fauth, but modified by the mechanician of the college, besides sextants, chronographs. chronometers, etc.

The buildings of the College of Civil Engineering contains the Offices and Observatory of the U. S. Weather Bureau, being the central office for the reception of climate and other data for the State of New York, and for the dissemination of weather forecasts to the region tributary to this centre.

The Museums of the College of Civil Engineering contain the following collections : 1. The Muret collection of models in descriptive geometry and stone cutting. 2. The DeLagrave general and special models in topography ; geognosy, and engineering. 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. Grand collection of bridge and track details, roofs, trusses, and masonry, supplemented by similar models by Schroeder and other makers. 5. A model railroad bridge of twenty-five feet span, the scale being one-fourth the natural size, and a numerous collection of models of track details. 6. The Digeon collection of movable dams and working models in hydraulic engineering. 7. Working models of water wheels, turbines, and other water engines. 8. Several large collections of European and American photographs of engineering works, during the process of construction, and many other photographs, blue prints, models and diagrams. 9. An extensive collection of instruments of precision, such as 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 the most efficient equipment of a training observatory. 10. A geodesic collection, consisting of a four meter comparator of original design, built at this college of the University, and believed to be the most accurate instrument of precision in existence for the determination of cofficients of expansion; 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 twelve engineering laboratories of this College, as described above.

REQUIREMENTS FOR ADMISSION.

The following subjects are required for admission: English, Physiology and Hygiene, History, [the student must offer two of the four following divisions in History: (a) American, (b) English, (c) Grecian, (d) Roman,] Plane Geometry, Elementary Algebra.

In addition to the above primary entrance subjects, the applicant must offer as below:—

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

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

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

(a) History, or additional English language and literature,

(b) Additional modern languages or literature.

(c) Freehand or linear drawing.

(d) Physics, chemistry, botany, zoology, geology, descriptive astronomy, or additional physiology.

(e) Latin or Greek.

This college admits as *Special Students* only graduates of other institutions pursuing advanced work, when the applicants are not candidates for a degree. See page 52.

[*For details as to subjects and methods of admission see pages 33–72.*

For admission to the freshman class communications should be addressed to the Registrar. See pages 33–52.

For admission to advanced standing, from other colleges and universities, eommunications shonld be addressed to the Director of the College of Civil Engineering. See pages 52–53.

For admission to graduate work and candidacy for advanced standing, communicalions should be addressed to the Dean of the University Faculty. See pages 64–72.]

A FOUR-YEAR COURSE LEADING TO THE DEGREE OF CIVIL ENGINEER.

See Course of Study for the classes entering in September, 1898, and September, 1899, pages 285 and 286.

*For students from the State of New York, this requirement is equivalent to 12 counts on the Regents' scale.

Junior Year.	No. Course.	1st Term.	2d Term.	3d Term.
Mechanics	7	5	5	4
Structural Details	10	–	3	–
Geodesy	19	5	–	–
Railway Location, etc.	12	3	4	2
Bridge Stresses	13	–	–	4
Topographical Practice	14	–	–	3
Civil Constructions and Cement Laboratory.	17	–	3	3
Engineering Laboratory	25	2	3	–

Senior Year.	No. Course.	1st Term.	2d Term.	3d Term.
Bridge Design	13a	3	–	–
Survey of Central New York	14a	–	–	3
Spherical Astronomy	15	4	–	–
Practical Astronomy	15	2	–	–
Thesis	24	–	2	2
Engineering Laboratory	25	–	1	1
Theory of the Arch	16	3	–	–
Hydraulics	18	4	–	–
Hydraulic Engineering	21	–	3	–
Stone Cutting	20	–	3	–
Cartography	23	–	–	2
Hydraulic Motors	21	–	3	–
Sanitary Engineering	26	–	–	3
Meteorology	22	–	–	1
Field Construction	27	–	–	2
*Elective	—	2	2	2
*Special Laboratory work	—	–	3	3
Military Science	5	–	2	–

N. B.—During the entire senior year, the following advanced subjects marked "Elective" and "Special" above, may be elected by special registration in this college, with credits as there indicated: Astronomy, geodesy, mechanics, hydraulic engineering, (rivers, canals, harbors, irrigation, water works,); meteorology, sanitary engineering, (habitations, quarantine, drainage. sewers, purification of water, pavements, parks, crematories, statistics, municipal engineering, (lighting, fire protection, building regulations, scavenging, paving, property records, assessments, franchises, administration of municipal bureaux;) railway engineering, (elevated, surface, and underground railroads, railway financiering, and railway jurisprudence); bridge engineering, highway engineering and construction; masonry and foundations; contracts and specifications; dynamo laboratory. These studies may be taken separately or in groups, and with or without relation to such of them as may be taken in the Law School or in

*All electives and thesis must be chosen by the student at the beginning of the year, with the previous approval of the Director.

other branches of the University; their aim is to enable the student to choose such subjects for advanced work as may be most useful in direct lines of professional specialities.

The College reserves the right to withdraw any elective course (see course of instruction, C. E., 34–43) which is not chosen by a sufficient number of students.

Monthly reports of work done on thesis will be required; and in the case of laboratory work, a written report upon the experiments or investigations assigned to the student must be handed, each term, to the officer in charge of the subjects treated in the laboratories.

The following course of study is for the classes entering in September, 1898, and September, 1899:

Freshman Year.	No. Course.	1st Term.	2d Term.	3d Term.
Mathematics*	2	5	5	5
Chemistry	1	3	3	3
Botany	3	2	2	–
Linear and Freehand Drawing	2	3	–	–
Lettering	1	2	–	1
Architectural Drawing	8	–	2	–
Pen Topography	4	–	2	–
Colored Topography	6	–	–	2
Highway Construction	11	–	1	–
Structural Metals	9	–	–	2
Land Surveying	5	–	–	4
Hygiene and Gymnasium	1	1	4	–
Military Drill	1	2	–	2
Sophomore Year.	No. Course.	1st Term.	2d Term.	3d Term.
Physics	1	4	4	4
Geology	20, 10,	3	3	3
Mechanics	7	5	5	5
Engineering Laboratory	25	2	3	–
Descriptive Geometry	3	3	2	2
Lettering	1a	–	1	–
Tinting and Shading	2a	–	1	1
City and Mine Surveying	5a	–	–	3
Military Drill	1	2	–	2
Junior Year.	No. Course.	1st Term.	2d Term.	3d Term.
Political Economy	51	3	3	3
Railroad Location	12	4	–	–
Railroad Construction	12	–	4	–
Railroad Economics	12	–	–	2
Structural Details	10	4	–	–
Bridge Stresses	13	–	4	–
Bridge Design	13a	–	–	4
Hydraulics	18	4	–	–
Hydraulic Motors	21	–	3	–

*Analytic Geometry, Differential Calculus, Integral Calculus.

Hydraulic Engineering	28	–	3	–
Sanitary Engineering	26	–	–	3
Civil Constructions and Cement Laboratory.	17	3	–	3
Topographical Surveys	14	–	–	3

Senior Year.	No.	Course.	1st Term.	2d Term.	3d Term.
Stereotomy and Theory of the Arch	16	3	–	–	
Theory of Oblique Arches	20	–	3	–	
Spherical Astronomy	15	4	–	–	
Practical Astronomy	15	2	–	–	
Geodesy	19	–	5	–	
Cartography	23	2	–	–	
Geodetic Surveys of Cent. N. Y.	14a	–	–	3	
Municipal Engineering	26	–	–	3	
Hydraulic and Geodetic Laboratory	25	–	1	1	
Elective	34–42	3	3	3	
Elective Laboratory	43a–43e	–	3	3	
Engineering Jurisprudence	—	3	–	–	
Meteorology	22	–	–	1	
Field Construction	27	–	–	2	
Military Science	5	–	2	–	
Thesis	24	–	2	2	

The numbers following the names of instructors refer to the rooms in the College of Civil Engineering.

FRESHMAN YEAR.

1. **Lettering.** Fall term. Drawing, six hours per week. F., 10–1, S,, 9–12. Mr. PARSON, 23. Spring term. Drawing, three hours per week. S., 9–12. Mr. PARSON, 23.

2. **Linear and Freehand Drawing.** Fall term. Drawing, nine hours per week. M., T., W., 10–1. Mr. PARSON, 23.

4. **Pen Topography**. Winter term. Drawing, six hours per week. M., 10–1 ; S., 11–1. Mr. PARSON, 23.

5. **Land Surveying.** Spring term. Lectures and recitations, two hours per week. T., F., 10, 11. Mr. KAY, 10. Field work, six hours per week. T., Th., 2–5, Mr. KAY and Mr. MCCONNELL.

6. **Colored Topography.** Spring term. Drawing, six hours per week. M., W., 9–12. Mr. PARSON, 23.

8. **Architectural Drawing.** Winter term. Drawing, six hours per week. T., 10–1 ; W., 2–5. Mr. PARSON, 23.

9. **Structural Metals.** Spring term. Lectures. M., W., F., 12. Mr. MCCAUSTLAND.

11. **Highway Construction.** Winter term. Lectures and recitations. F., 9. Mr. MCCAUSTLAND, 33.

SOPHOMORE YEAR.

1a. **Lettering.** Winter term. Drawing, three hours per week. Th., 2–5. Mr. PARSON, 23.

2a. **Tinting and Shading.** Winter and spring terms. Drawing, three hours per week. Winter term. W., 11–1; S., 8–11. Spring term. T., Th., 10–1. Mr. PARSON, 23.

3. **Descriptive Geometry.** Fall, winter, and spring terms. Recitations, two hours per week. Fall term. M., W., 10, 12; T., Th., 10, 11. Winter and spring terms. M., W., 8, 10. Assistant Professor OGDEN, 44. Fall term. T., Th., 9. Winter and spring terms. M., W., 12. T., Th., 9, 10. Mr. FILKINS, Fall, winter and spring terms. T., Th., 10. Mr. MCCONNELL, 33. Fall and winter terms. M., W., 9; T., Th., 8, 9. Mr. KAY, 33. Fall, winter and spring terms. M., W., 9, 10, 12. Mr. ———, 44, 33, 32. *Original Problems.* Two hours per week. Fall term. M., W., F., 8. Fall, winter and spring terms. F., S., 9–11. Assistant Professor OGDEN, 42. Fall term, M., W., F., 9. Mr. FILKINS, 42. Fall, winter and spring terms. S. 9–11. Mr. MCCONNELL, 31. Fall term, Th. 10–12. Winter term, T., Th., 10–12. Spring term, Th., 10–12. Mr. KAY, 42. Fall, winter and spring terms. T., 8–10; Th., 10–12; F., 9–11; F., 11–1. Winter and spring terms. T., 10–12. Mr. ———, 31.

5a. **Higher Surveying.** Spring term. Recitation, one hour per week. F., 9. Professor CRANDALL, 33. F., 10. Mr. FILKINS, 33. Field work, eight hours per week. S., 8–12; 1–5. Mr. FILKINS and Mr. ———.

7. **Mechanics of Engineering.** Fall, winter and spring terms. Lectures and recitations daily except S. Spring term, 8. Mr. MOTT, 32. Fall and winter terms, 8, 10. Spring term, 10. Mr. MCCAUSTLAND, 32, 45. 11. Mr. FILKINS, 32. 8, 9, 11. Mr. MCCONNELL, 43. 8, 9, 10. Mr. ———, 45, 45, 43.

7a. **Mechanics.** For students in Architecture. Fall term. Lectures and recitations, four hours per week. M., W., Th., F., 9. Mr. MCCAUSTLAND, 10.

25. **Engineering Laboratory.** Fall term, five hours per week. W., F., 10–1½. Mr. MOTT, 2, 10, 14, 15. F., 2–4½; S., 9–11½. Mr. ———, 2, 10, 14, 15.

JUNIOR YEAR.

7. **Mechanics of Engineering.** Fall, winter and spring terms. Lectures and recitations daily, except S. Fall and winter terms, 9. Spring term, 8. Professor CHURCH, 34. 9. Mr. MOTT, 32.

10. **Structural Details.** Winter term. Lectures, one hour per week. Th. 10. Associate Professor JACOBY, 34. Computation and Drawing, five hours per week. M., 10–12; T., 10–1; T. Th., 2–4½. Associate Professor JACOBY, 26. M., T., 11. Mr. MCCAUSTLAND, 26.

12. **Railway Location, Railway Construction, and Railway Economics.** Lectures, recitations, drawing and field work. Fall term. W., F., 10–1. Professor CRANDALL, 45. Mr. KAY, 10. S., 8–6. Professor CRANDALL, Mr. KAY, and Mr. ———. Winter term. Lectures and recitations, two hours per week. M., 10, T., 12; M., Th., 12. Professor CRANDALL, 32, 45. Drawing, six hours per week. W., F., 10-1. Professor CRANDALL, 26; Mr. KAY, 23. Spring term. Lectures and recitations, three hours per week. M., W., F., 10, 11. Professor CRANDALL, 34, 45.

13. **Bridge Stresses.** Spring term. Lectures and recitations, five hours per week. Daily, ex. S., 9, 10. Associate Professor JACOBY, 34, 32. 8. Mr. MCCAUSTLAND, 33.

17. **Civil Constructions.** Winter term. Lecture, one hour per week. S., 11. Assistant Professor OGDEN, 44. Recitations, two hours per week. M., F., 8; T., Th., 11. Assistant Professor OGDEN, 44. Spring term. Lectures, three hours per week. T., Th., 11; S., 8. Assistant Professor OGDEN, 34. Cement laboratory, two and a half hours per week. T., 2–4½. Assistant Professor OGDEN. M., 2–4½; S., 9–11½. Mr. KAY.

19. **Geodesy.** Fall term. Lectures and recitations five hours per week. M., W., Th., 11; W., F., 8. Professor CRANDALL, 10, 44. M., T., W., Th., F., 8. Mr. FILKINS, 34.

14. **Topographical Practice, etc.** Spring term. Two weeks' field work in the C. U. Survey of Central New York, twelve hours per day, and one week office work, six hours per day. Professors FUERTES and CRANDALL, Assistant Professor OGDEN, and Messrs. MOTT, MCCAUSTLAND, FILKINS and ———.

25. **Engineering Laboratory.** Fall term, two afternoons per week. Professor CHURCH. T., Th., 2–4½. Mr. MOTT, 2, 10, 14, 15. M., W., 2–4½. Mr. ———. 2, 10, 14, 15. Winter term, two afternoons per week. Professor CHURCH. T., Th., 2–5¾. Mr. FILKINS. M., W., 2–5¾. Mr. ———.

SENIOR YEAR.

13a. **Bridge Designing.** Fall term. Lectures and recitations, one hour per week. F., 9. Associate Professor JACOBY, 26. Computation and Drawing, five hours per week. Th., 8–10; F., 10–1. Associate Professor JACOBY, 26.

14a. **Geodetic Practice, etc.** Spring term. Two weeks' field work in the C. U. Surveys of Central New York, twelve hours per day. Office work, one week, five hours per day. Professors FUERTES, CHURCH, and CRANDALL.

15. **Spherical Astronomy.** Fall term. Lectures and computations. M., T., W., Th., 12. Professor FUERTES, 34. Laboratory work, one afternoon a week. M., T., W., Th., 2–5. Professor FUERTES, Mr. FILKINS and Mr. MCCONNELL. Night observations, twice a week, 7–11. Professor FUERTES, Assistant Professor OGDEN, Mr. FILKINS, and Mr. MCCONNELL.

16. **Stereotomy and Theory of the Arch.** Fall term. Lectures and drawing, six hours per week. M., T., Th., 8–10. Professor CRANDALL, 26; Associate Professor JACOBY, 23.

18. **Hydraulics.** Fall term. Lectures and recitations. M., T., W., Th., 10. Professor CHURCH, 34; Mr. MOTT, 32.

20. **Theory of Oblique Arches, Masonry Designs, and Stone Cutting.** Winter term. Lectures and designs, six hours per week. T., Th., F., 8–10. Professor CRANDALL, and Mr. FILKINS, 26.

21. **Hydraulic and other Motors.** Winter term. Lectures and recitations. M., W., F., 10. Professor CHURCH, 34. M., T., Th., 10. Mr. MOTT.

22. **Meteorology.** Spring term. Two lectures per week. Hours to be assigned. Mr. TURNER, 34.

23. **Hydrographic and Topographic Mapping.** Spring term. Drawing, six hours per week. Th. 8–10; F. 8–[illegible] Mr. PARSON, 26.

24. **Theses.** Winter and spring terms. The subject to be approved by the Director of the College.

25. **Engineering Laboratory.** Winter and spring terms. One afternoon per week as assigned. M., T., 2–4:30. Professors CHURCH and CRANDALL, and Mr. MOTT, 2, 3, 4, 7, 8, 9.

26. **Municipal and Sanitary Engineering.** Spring term. Lectures. M., T., W., Th., 10. Professor FUERTES, 24.

27. **Field Construction.** Spring term. Three lectures per week. Hours to be assigned. Mr. SKINNER, 34.

28. **Hydraulic Engineering.** Winter term. Lectures. M., W., F., 12. Professor FUERTES, 34.

32. **Lectures** by non-resident civil engineers on professional topics.

33. **Special courses** for graduates and advanced students, as may be arranged.

34. **Mining.** Fall and spring terms. M., W., 11. Winter term. W., F., 11. Mr. MCCAUSTLAND.

36. **Advanced Mechanics.** Fall, winter and spring terms. M., W., 11. Professor CHURCH.

37. **Advanced Geodesy and Astronomy.** Fall and winter terms. M., W., 11. Spring term. M., W., 9. Professor FUERTES and Professor CRANDALL, 45.

38. **Bridge Engineering.** Fall, winter and spring terms. M., W., 11. Associate Professor JACOBY, 33.

39. **Railway Engineering.** Fall, winter and spring terms. T., Th., 11. Professor CRANDALL, 45.

40. **Hydraulic Engineering.** Fall, winter and spring terms. T., Th., 11. Professor FUERTES and Mr. MOTT, 34, 44.

41. **Sanitary Engineering.** Fall, winter and spring terms. M., W., 11. Professor FUERTES and Assistant Professor OGDEN, 44.

42. **Masonry and Foundations.** Fall, winter and spring terms. T., Th., 11. Associate Professor JACOBY, 33.

43. **Special Laboratory Work.** Winter and spring terms. Seven and one-half hours per week. (a) Geodetic and Astronomic. (b) Hydraulic. (c) Sanitary. (d) Cement. (e) Testing materials. W., Th., F., 2–4:30. Professors CHURCH and CRANDALL, Assistant Professor OGDEN and Messrs. MCCAUSTLAND and KAY.

Course 43 may be taken with the approval of the Director, as well as some of the courses under the department of Physics, when the applicants have the necessary preparation.

DEGREES.

First Degree.

The degree of *Civil Engineer, C.E.*, is conferred upon such candidates as may successfully complete the four year undergraduate course (see pages 284–286) 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 68–72. Such courses are also open to graduates of any institution having an equivalent curriculum, when such graduates are accepted as candidates by the Faculty of this College. All graduate students are under the jurisdiction of the University Faculty.

The degrees of Master of Civil Engineering (M.C.E.), and Doctor of Philosophy (Ph.D.) are conferred after the conditions are fulfilled which are detailed on pages 71, 72.

For fellowships and scholarships, see pages 64–67.

PRIZES.

The Fuertes Medals, founded by Professor E. A. Fuertes and consisting of two gold medals, will be awarded under the following conditions :

One of these medals will be awarded annually by the University Faculty to that student of the College of Civil Engineering who may be found, at the time of graduation, to have maintained the highest degree of scholarship in the subjects of his course ; and the other medal will be awarded annually by the University 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 ; provided, however, that neither medal shall be awarded unless it appear to the University Faculty 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 Truttees, be given to aid needy and meritorious students of any course.

SIBLEY COLLEGE

OF MECHANICAL ENGINEERING AND THE MECHANIC ARTS.

FACULTY.

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

ROBERT HENRY THURSTON, M.A., LL.D., Dr.Eng'g, Director of the College, Dean of the Faculty, and Professor of Mechanical Engineering.

JOHN LEWIS MORRIS, A.M., C.E., Sibley Professor of Practical Mechanics and Machine Construction.

ROLLA CLINTON CARPENTER, M.S., C.E., M.M.E., Professor of Experimental Engineering.

HARRIS JOSEPH RYAN, M.E., Professor of Electrical Engineering.

WILLIAM FREDERICK DURAND, Ph.D., Professor of Marine Engineering, and Principal of the Graduate School of Marine Engineering and Naval Architecture.

JOHN HENRY BARR, M.S., M.M.E., Professor of Machine Design.

EDWIN CHASE CLEAVES, B.S., Assistant Professor of Freehand and Mechanical Drawing.

GEORGE ROBERT McDERMOTT, Assistant Professor of Naval Architecture.

HERBERT WADE HIBBARD, A.B., A.M., M.E., Assistant Professor of Mechanical Engineering of Railways and Principal of the Graduate School of Railway Mechanical Engineering.

DEXTER SIMPSON KIMBALL, A.B., Assistant Professor of Machine Design.

HIRAM SAMUEL GUTSELL, B.P., A.M., Instructor in Industrial Drawing and Art.

JOHN S REID, Instructor in Mechanical Drawing and Design.

VICTOR TYSON WILSON, Instructor in Industrial Drawing and Art.

DAVID REID, Instructor in Mechanical Drawing and Design.

OLIVER SHANTZ, M.M.E., Instructor in Experimental Engineering.

HENRY HUTCHINS NORRIS, M.E., Instructor in Electrical Engineering.

CHARLES WELLINGTON FURLONG, Instructor in Industrial Drawing and Art.
WILLIAM NICHOLS BARNARD, M.E., Instructor in Machine Design.
GEORGE L. HOXIE, M.M.E., Instructor in Electrical Engineering.
GEORGE HUGH SHEPARD, U. S. Navy (retired), Instructor in Machine Design.
HERMAN DIEDERICHS, M.E., Instructor in Experimental Engineering.
FREDERICK NOÉ, M.E., Instructor in Machine Design.
THOMAS MOONEY GARDNER, M.M.E., Instructor in Experimental Engineering.

JAMES WISEMAN, Foreman of Machine Shop, and Instructor in Machine Construction.
WILLIAM HENRY WOOD, Foreman of Woodshop.
JAMES WHEAT GRANGER, Foreman in Forging.
JAMES EUGENE VANDERHOEF, Foreman in Foundry.
GEORGE CONGER POLLAY, Assistant in Woodshop.
ROBERT VANDERHOEF, Assistant in Foundry.
FRANK STARKINS, Assistant in Machine Shop.
WILLIAM FREDERICK HEAD, Assistant in Forging.
ARTHUR HENRY SWEET, Mechanician in Sibley College.

NON-RESIDENT LECTURERS, 1898-9.

A. E. KENNELLY, Ph.D., of Philadelphia, Wireless Telegraphy.
R. W. RAYMOND, Ph.D., of New York (Lecturer before Law School and Sibley College), Mining Laws of United States.
COL. E. D. MEIER, M.E., of St. Louis, Diesel and other Gas-Engines.
F. H. REES, of Elmira, Horological Constructions.
H. T. BAILEY, of Boston, "Our Heritage from the Masters."
C. J. FIELD, M.E., of New York, Recent Electrical Engineering.
OBERLIN SMITH, M.E., of Bridgeton, Chinese Mint Construction.
KATHARINE GORDON BREED, Art Work from the Yellowstone.
E. W. RICE, JR., M.E., of Schenectady, Rotary Converters.

DEPARTMENT OF LIGHT AND POWER.

JOHN LEWIS MORRIS, A.M., C.E., Head of Department.
HARRIS JOSEPH RYAN, M.E., Consulting Engineer.
HENRY HUTCHINS NORRIS, M.E., Electrician.
RICHARD HISCOCK, Chief Engineer and Assistant in Steam Engineering.

HORACE MARSHALL, Engineer of Light and Power Station.
ALONZO WHITLOCK, Lineman.
WILLIAM WESTCOTT, First Assistant Engineer.
ALBERT TUCKER, Second Assistant Engineer.
TRACEY HISCOCK, Assistant in Charge of Boilers.

The Sibley College of Mechanical Engineering and the Mechanic Arts, as its name implies, is organized as a technical and professional college in Cornell University. Its courses are planned and conducted with a view, primarily, to the promotion of the fundamental ideas of the law establishing that institution and the most cherished plans of its Founders—the advantage of the "industrial classes", through training in the industrial arts and professions, as supplementary to so much of academic education as its students may have found it practicable to secure. Before preparing for or entering upon such courses of instruction as are here offered, it is presumed that the student has secured as complete a general education as time and means permit, and that he is ready to give all his thought and energy to business. For him, these courses constitute the first step in his business career and it may be expected that they will be so regarded, both by him and by his instructors. The methods of the college will be, as far as practicable, those of the business establishment or engineer's office, and admission and discharge will be governed as far as possible by business rules. Men of ambition and business holding to principles and methods will be given every assistance in their endeavors to obtain a professional training; others will be directed into other departments of study or into other lines of business.

Candidates for admission are reminded that these courses are intended solely for the student proposing to enter the professional work into which these lines of study lead, and that it is assumed that his general academic education has been completed to the full extent of his available time and means. He is advised, in all cases, to secure, before entering Sibley College, a good academic education, including, if practicable, a liberal college course. His success in the practice of his profession will be found to depend, more and more, in the future, and always in large degree, upon the position which he may be able to assume among men of education and culture. The courses here offered are not intended to give him more than a technical preparation for the special professional work of his business life. Even the entire devotion of four years to this specific and limited purpose will be

found none too much, and the courses are therefore organized to meet the demands, solely, of engineering as a profession. Education and culture should precede it; notwithstanding the fact that technical studies must always constitute a very effective line of education of the faculties and of the mind.

The Sibley College of Mechanical Engineering and the Mechanic Arts receives its name from the late Hiram Sibley, of Rochester, who between the years of 1870 and 1887, gave one hundred and eighty thousand dollars toward its equipment and endowment. Mr. Hiram W. Sibley has added above fifty thousand dollars for later constructions. It now includes eight departments: Mechanical Engineering, Experimental Engineering, Electrical Engineering, Machine Design, Mechanic Arts or shop work, Industrial Drawing and Art, Graduate Schools of Marine Engineering and Naval Architecture and of Railway Mechanical Engineering.

Departments.

1. **Department of Mechanical Engineering.**—The work of this department is conducted in connection with the several other departments to be presently described. The full course of instruction consists of the study, by text-book, or lectures, of the materials used in mechanical engineering; the valuable qualities of these materials being exhibited in the mechanical laboratory by the use of the various kinds of testing machines. The theory of strength of materials is here applied, and the effects of modifying conditions—such as variation of temperature, frequency and period of strain, method of application of stress—are illustrated. This course of study is accompanied by instruction in the science of pure mechanical kinematics, which traces motions of connected parts, without reference to the causes of such motion, or to the work done, or the energy transmitted. The study is conducted largely in drawing rooms where the successive positions of moving parts can be laid down on paper. It is illustrated in some directions by the set of kinematic models known as the Reuleaux models, a complete collection of which is found in the museum of Sibley College.

The study of machine design succeeds that of pure mechanism, just described, and is also largely conducted in the drawing rooms.

The closing work of the course consists of the study, by text-book and lectures, of the theory of complete machines, as the steam-engine and other motors. The last term of the regular four-year course is devoted largely to the preparation of a graduating thesis in which the student is expected to exhibit something of the working power and the knowledge gained during his course.

Students are allowed, in their senior year, to begin to specialize somewhat, taking, for example, work in steam, in marine, in railway, or in electrical engineering, with specialists.

2. **Department of Experimental Engineering, or Mechanical Laboratory Instruction.** The work in this department comprises a systematic course of instruction intended not only to give the student skill in the use of apparatus of exact measurement, but to teach him also the best methods of research. Its courses of instruction include the theory and use of machines for testing the strength and determining other valuable properties, of the materials of construction, of lubricants, and of fuels, etc., the processes of belt-testing, and of power measurement, and the standard system of gas and steam-engine and of steam-boiler test-trials. All students take part in this work and, when sufficiently expert, in commercial work of this kind at the University, and sometimes extensively in the large cities throughout the state and elsewhere.

3. **Department of Electrical Engineering.** The student at the end of the third year of the course in Mechanical Engineering, may, if he chooses, substitute the special work in electrical engineering for the prescribed work of the regular course. The special work of the fourth year comprises the study, under the direction of the Professor of Electrical Engineering, of station design and construction of the prime movers, the design and construction of electrical machinery, the study of the problems involved in the distribution of the 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 and telephone and telegraph lines and cables, and to the purposes of investigation ; while a large amount of work in the laboratories of the Department of Physics is given with special reference to the needs of the practical electrician.

Graduates in the course of Electrical Engineering, are given the degree of Mechanical Enginer, as in the regular course, with a statement in the diploma that the student has elected the special work offered in this department.

Electricians unfamiliar with engineering may pursue special work. Students entering the undergraduate courses for the purposes of the electrician, rather than those of the electrical engineer, should take the course leading to the degree of A.B., and should take its electives in physics. No student deficient in talent for either mathematics, physics, or the mechanic arts should attempt electrical engineering.

4. **Department of Mechanic Arts.** The aim of the instruction in

this, the department of practical mechanics and machine construction, is to make the student, as far as time will permit, acquainted with the most approved methods of construction of machinery. The courses are as follows :

Wood-working and Pattern-making. This course begins with a series of exercises in wood-working, each of which is intended to give the student familiarity with a certain application of a certain tool ; and the course of exercises, as a whole, is expected to enable the student to perform any ordinary operations familiar to the carpenter, the joiner and the pattern maker. Time permitting, these prescribed exercises are followed by practice in making members of structures, joints, small complete structures, patterns, their core-boxes, and other constructions in wood. Particular attention is paid to the details of pattern-making.

Forging, Moulding and Foundry-work. These courses are expected not only to give the student a knowledge of the methods of the blacksmith and the moulder, but to give him that manual skill in the handling of tools which will permit him to enter the machine shop and there quickly to acquire familiarity and skill in the manipulation of the metals, and in the management of both hand and machine tools.

Ironworking. The instruction in the machine shop, as in the foundry and the forge, is intended to be carried on in substantially the same manner as in the wood-working course, beginning with a series of graded exercises, which will give the student familiarity with the tools of the craft, and with the operations for the performance of which they are particularly designed, and concluding by practice in the construction of parts of machinery, and time permitting, in the building of complete machines which may have a market value.

5. **Department of Industrial Drawing and Art, (excluding Machine Design).** Freehand Drawing and Art : The instruction begins with freehand drawing, which is taught by means of lectures and general exercises from the blackboard, from flat copies, and from models. The work embraces a thorough training of the hand and eye in outline drawing, elementary perspective, model and object drawing, drawing from casts and sketching from nature. The course in freehand drawing may be followed by instruction in decorative art, in designing for textiles and ceramics, in modeling, and in other advanced studies introductory to the study of fine art.

Mechanical drawing : The course begins with freehand drawing, and in the latter part of this work considerable time is expected to be given to the sketching of parts of machines and of trains of mechanism,

and, later, of working machines. The use of drawing instruments is next taught, and after the student has acquired some knowledge of descriptive geometry and the allied branches, the methods of work in the drawing rooms of workshops and manufacturing establishments are learned. Line drawing, tracing and "blue printing," the conventional section-lining and colors, geometrical construction, projections and other important details of the draughtsman's work are practiced until the student has acquired proficiency.

Industrial Art. Instruction in industrial and fine art, continuing through four years, is arranged for students having a talent for such work, and desiring to devote their time mainly to this subject. Modeling and landscape drawing and painting occupy the spring term. No degree is conferred, but certificates of proficiency may be given at the end of course. Occasional general and public lectures on the history of art and the work of great artists are given.

6. **Department of Machine Design.**—The advanced instruction in the Department of Machine Design is developed directly out of the preceding courses and includes the tracing of curves and cams, the study of kinematics on the drawing board, tracing the motion of detail mechanism, and the kinematic relations of connected parts, This part of the work is accompanied by lecture-room instruction and the study of the text-book ; the instructors in the drawing rooms being assisted by the lecture-room instructor, who is a spcialist in his branch. The concluding part of the course embraces a similar method of teaching machine-design, the lecture-room and drawing-room work being correlated in the same manner as in kinematics or mechanics. The course concludes, when time allows, by the designing of complete machines, as the steam engine or other motor, or some important special type of machine. Students often make original designs, and not infrequently put on paper plans relating to their own inventions.

Besides the preceding undergraduate courses, graduate courses are arranged for students in mechanical or electrical engineering who desire further instruction and advanced work in engineering.

7. **The Graduate School of Marine Engineering** and Naval Architecture, which was established by the Board of Trustees in 1890, has for its object to provide courses of instruction and opportunities for research in such special branches of engineering as relate to the design, building, powering, and propulsion of vessels of any and all types. The course is so arranged that students during their senior year in mechanical engineering will be able to carry on in the School their special or elective work of that year. For the student entering

Cornell University with Marine Construction as an objective point, the course for the first three years will be the general course in Mechanical Engineering, as given in the Register. For juniors who may be ahead of their course, however, or who may be allowed to take work outside of the regular schedule, special introductory work may be provided in Ship Drawing and Naval Architecture, and all juniors who propose taking this conrse and who may have such time at their disposal, are urged to elect such special work.

8. **The Graduate School of Railway Mechanical Engineering** was authorized by the Board of Trustees, June, 1896, and was organized in February, 1898. Its purpose is to concentrate and systematize the work in the mechanical engineering of railway machinery previously constituting a subordinate part of the existing courses, and to offer special instruction to students who have completed a general course in technical institutions of high rank, and, furthermore, to members of the engineering profession desiring special knowledge in this field. For all such, in addition to instruction in this department of engineering of immediate practical value, courses of work are also available in other associated departments of the College and of the University, in such form and in such amount as will be best adapted to their necessities.

The courses in the School have special relation to the designing, manufacture, service in operation, repairing, and the test trials of locomotives and other rolling stock and their equipment; and with the problems connected with the other kinds of machinery employed in railway operation. They are particularly adapted to the needs of the young engineer seeking to find his way into the mechanical departments of railways and into the positions, ultimately, of superintendents of shops and of motive power. These courses are also suitable for those who desire to become locomotive or car builders, as managers eventually of so-called "contract shops"; and for those whose interests lean towards the railway supply business, as the mechanical engineer, superintendent of works, or travelling representative of firms furnishing equipment, supplies and tools for locomotives, cars, and shops.

In addition to the courses offered in Sibley College, as purely professional, there will be found in the scheme of the special courses leading to advanced degrees, opportunities for pursuing work in economics, in law, and in allied professional and scientific departments, in all that great variety characteristic of the University.

The School so arranges its work, also, as to connect closely with the undergraduate work of Sibley College. Students in the undergradu-

ate courses may begin to specialize in their sophomore year by electing problems related to locomotive details in course D. 5, Mechanical Drawing. In the junior year, those who are ahead of their course and have the proper preparation and time, may still further specialize by elections from the senior courses in the Railway School. In the senior railway year, about half the student's time is devoted to railway subjects. The graduate year carries the specialized instruction to far greater thoroughness, handling the various problems with the strictly engineering completeness of the actual railway motive power department. Railway seniors, who have the available time, may elect some of this advanced graduate work. In general, with the above additions, the railway course is identical with the regular course in mechanical engineering for the first three years.

Graduates of engineering schools who have had the equivalent of the senior year in the regular course, can take a special graduate year, made up of the senior railway subjects and such electives from the graduate subjects as may be desired.

Particular attention is called to the opportunity offered for practical experience in railway and locomotive shops during the summer vacation. In 1899 there were twenty shops open to the students for this three months of work, at wages more than covering expenses, of which sixty students availed themselves. The importance of this work, as preparatory to the courses of the Railway School, cannot be overestimated. The notice of such students, by the railway officers and locomotive builders employing them, should also not be ignored.

[Circulars of Schools will be sent on application to the department.]

Courses in Chemical Engineering may be arranged.

Special Students.—Special students are sometimes admitted who are expected to follow as closely as possible a course of instruction planned with reference to their needs. This instruction does not lead to a degree and is only intended for students who are unable to pursue a complete college course, or who desire special instruction in advanced and graduate work.

Non-Resident Lecturers, etc.—Supplementing the regular course of instruction, lectures are delivered from time to time by the most distinguished men and the great specialists of the profession. Extended "Inspection Tours" are made to the great cities and manufacturing establishments during the spring vacation, when sufficient numbers are enrolled.

Persons desiring more information in regard to any subject connected with Sibley College should address "The Director of Sibley College."

BUILDINGS AND EQUIPMENT OF SIBLEY COLLEGE.

The buildings of **Sibley College** occupy a ground enclosed between East and Central Avenues, at the north end of the Campus, leased from the University for the purposes of the College, under an agreement with the late Hiram Sibley.

The two main buildings of the **Sibley College** are each one hundred and sixty feet long, fifty feet in width, and three stories in height. They contain museums, the reading-room, drawing-rooms, large and well-lighted lecture-rooms, and the rooms of the different professors. The workshops are placed in separate buildings and consist of a machine shop, a foundry, a blacksmith shop, and a wood-working shop. and include rooms devoted to the storage of tools. Besides these there is an additional building, one hundred and fifty feet by forty in dimensions, and two stories in height, occupied by the laboratories of the department of experimental engineering. At the bottom of Fall Creek Gorge is the house protecting the turbines which supply the power ordinarily required for driving the machinery of the College, and the electric apparatus for lighting the campus and the buildings, and, near it, a steam pumping station used as a reserve when the power of the hydraulic station is unequal to the demand for water supply. The large engine and dynamo room, containing all the engines and dynamos employed in lighting the University, is adjacent to the shops, and beside the boiler-room in which are placed the 200 H. P. boilers furnishing steam to these and the experimental engines.

The Collections of Sibley College are of exceptional extent, value, and interest. The principal room on the first floor of one building is devoted to the purposes of a museum of illustrative apparatus, machinery, products of manufacturing, and collections exhibiting processes and methods, new inventions, forms of motors and other collections of value in the courses of technical instruction. In this museum is placed a large Reuleaux collection of models of kinematic movements. Besides these are the Schroeder and other models, exhibiting parts of machinery, the construction of steam engines and other machines, and a large number of samples of machines constructed to illustrate special forms and methods of manufacture. Many of these machines and tools have been made in the University shops. The lecture rooms of Sibley College, each being devoted to a specified line of instruction and list of subjects, are each supplied with a collection of materials, drawings, models, and machines, especially adapted to the wants of the lecturer. The course of instruction in mechanical

engineering is illustrated by a fine collection of steam engines, gas and vapor engines, water-wheels and other motors, models and drawings of every standard or historical form of prime mover, or parts of machines, and of completed machinery.

The collections of the Department of Drawing and Art include a large variety of studies of natural and conventional forms, shaded and in outline, geometrical models, casts and illustrations of historical ornament, and remarkably fine collections of casts, of pattern and other art work.

The workshops are supplied with every needed kind of machine or tool, including lathes, and hand and bench tools sufficient to meet the wants of two hundred students of the first year, in wood-working; in the foundry and forge, all needed tools for a class of over one hundred and fifty in the second year; in the machine shop, machine tools from the best builders, and a great variety of special and hand tools, which are sufficient for a class of one hundred and fifty in the third year, and as many seniors and graduate students.

The Sibley College Mechanical Laboratories constitute the department of demonstration and experimental research of Sibley College, in which not only instruction, but investigation is conducted. They are supplied with the apparatus for experimental work in the determination of the power and efficiency of heat motors, and of the three turbines driving the machinery of the establishment; with a boiler-testing plant and instruments; and with twenty machines of the various standard types for testing the strength of metals, including machines of 50, 100, and 150 tons capacity; and one 60,000 and one 200,000 pound Emery machine, of extraordinary accuracy and delicacy. Sixteen steam-engines, nine air, oil, and gas engines, fourteen dynamometers, eight lubricant-testing machines, about fifty standard pressure guages and an equally numerous collection of steam engine indicators, together with other apparatus and instruments of precision employed by the engineer in such researches as he is, in practice, called upon to make, are collected here. A large hydraulic "plant" is employed for experimental purposes and for research. All the motors of the University, and its boilers, amounting to 1000 horse-power, are available for test trials. The steam-engines are set up, with the heavy lighting dynamos, adjacent to the boilers; among them a 200 H.P. "experimental engine," and several of smaller power, including 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 of Electrical Engineering, including the apparatus of the Department of Electrical Engineering of Sibley College and also that available in the Department of Physics, comprehend many special collections of apparatus and equipment. In addition to large numbers of workings drawings of stations, "plants," motor and electrical machinery, there are extensive collections of experimental machinery and apparatus of research. These collections include a great number of large and small dynamos of arc and incandescent lighting types, including a five hundred light and a twenty-five light Edison, two Thomson-Houston, three Weston, a Ball, a Mather, a Waterhouse third brush, a Gramme, a Siemens and Halske, a six hundred and fifty light Westinghouse alternate current machine and its complement of converters, and a Westinghouse forty arc-light alternate with its full complement of lamps, and a ten H.P Laval turbine and dynamo; a variety of motors, including two ten H.P. automatic Sprague motors, a Brush five H.P. constant current, and a Tesla alternate current motor. Storage batteries are of the Julien, Gibson, Sorley, and other "accumulator" types; aggregating about 200 cells. There are also arc and incandescent lamps of all the various types, and commercial electric meters. The great tangent galvanometer and electro-dynamometers, and the potential instrument at the Magnetic Observatory, and the authorized copies of the British Association standards of resistance afford every facility for making measments in absolute measure of current, E.M.F., and resistance, with the highest attainable accuracy.

There are large numbers of ammeters, voltmeters, Wheatstone bridges, electro-dynamometers, electric balances, long range electrometers, etc., many constructed here, others purchased, for general use, and always kept in correct adjustment by comparison with the above standardizing apparatus. Apparatus is provided for all delicate testing, for the exact study and determination of alternate current energy, for conductivity and insulation tests, and for the determination of the properties of the magnetic materials. Means for making quantitative measurements are supplied through a well equipped photometer room for the photometry of arc and incandescent lamps; several Brackett "cradle" dynamometers for efficiency tests of dynamos and motors; a rehostat of german-silver wire, for a working resistance, with a capacity ranging from twenty-two hundred ohms and four ampères to four-tenths of an ohm and three hundred ampères.

REQUIREMENTS FOR ADMISSION.

The following subjects are required for admission ; English, Physiology and Hygiene, History, [the student must offer two of the four following divisions in History : (a) American ; (b) English ; (c) Grecian ; (d) Roman ;] Plane Geometry, Elementary Algebra. See pages 33–36.

In addition to the above primary entrance subjects, the applicant must offer as below :—

1. In *Solid Geometry*, *Advanced Algebra*, and in *Plane* and *Spherical Trigonometry* as much as is contained in the standard American and English text-books See page 45.

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

3. The applicant must have presented a Regents' diploma (page 49) or a certificate (page 50) of graduation from an approved school. Otherwise he must, in addition to the requirements mentioned in 1 and 2, pass examinations or present acceptable certificates representative of an amount of work equivalent to three years time in a single subject in preparatory schools of approved standing.*

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

[*For details as to subjects and methods of admission see pages 33–72.*

For admission to the freshman class, communication should be addressed to the Registrar. See pages 33–52.

For admission to advanced standing from other colleges and Universities communication should be addressed to the Director or the Secretary of Sibley College. See pages 52 and 53.

For admission to graduate work and candidacy for advanced degrees, communication should be addressed to the Dean of the University Faculty. See pages 64–72.]

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

COURSES IN MECHANICAL ENGINEERING LEADING TO THE DEGREE OF MECHANICAL ENGINEER.†

Regular Course.

The letters and figures in parenthesis relate to the departments and courses in Sibley College as described on pp. 308 to 312.

Freshman Year.	No. Course.	1st Term.	2d Term.	3d Term.
German or French	I	3	3	3
Analytical Geometry	2	5	Differ'l. Cal. 5	Integ. Calcu. 5
Chemistry	I	3	3	3
Drawing	I	3	3	(D 2) 3
Shopwork	I	3	3	3
Hygiene	I	I	–	–
Drill	I	2	–	2

Sophomore Year.	No. Course.	1st Term.	2d Term.	3d Term.
Mechanics of Eng.	7	5	5	5
Drawing	5	2	2	2
Descriptive Geom.	3	2	2	2
Physics	I	4	4	4
Chemical Laboratory	3–4	3	3	3
Shopwork	5	3	3	3
Drill	I	2	–	2

Junior Year.	No. Course.	1st Term.	2d Term.	3d Term.
Steam Machinery	M. D. 11	2	2	2
Electrical Machinery	E. E. 10	2	2	2
General Machine Design	M. D. 12	3	3	3
Kinematics and Drawing	M. D. 10	3	3	3
Materials of Engineering	X. E. 10	I	I	I
Physical Laboratory	Physics. 3	2	2	2
Mechanical Laboratory	X. E. 11	3	3	3
Shopwork	M. A. 10	3	3	3

Senior Year.	No. Course.	1st Term.	2d Term.	3d Term.
Steam Engines and other Motors	M. E. 20	5	5	Thesis: Designing and Drawing, Mechanical Laboratory Investigations, Shopwork 12
Physical Laboratory	5	2	2	
Mechanical Lab.	X. E. 20	2	2	
Eng. Design	M. D. 20 and 21 or 22 and 23	6	6	Time divided optionally, but subject to approval of the Director.
Shopwork	M. A. 20	3	3	
Elective		0 to 3	0 to 3	5 to 8

†All elections to be approved by the Director. See final note. Students will report for instructions. Siudents are advised and encouraged to take shop practice in vacation.

Course in Electrical Engineering.†

The freshman, sophomore, and junior years are identical with the course in Mechanical Engineering; in the senior year, laboratory work is increased, and advanced electrical engineering work introduced.

Senior Year.	No. Course.	1st Term.	2d Term.	3d Term.
Physics, Lectures and	4	4	4	4
Laboratory work	8	1	1	1
Steam Engine and other Motors	M. E. 20	5	5	Thesis,* including laboratory, drawing, shop, 3 hours each, unless substituted for 12
Mechanical Lab.	X. E. 20	2	2	
Electrical Eng.	E. E. 20, 21	5	5	
Shopwork	M. A. 20	2	2	Elective 0 to 3

Courses in Marine Engineering and Naval Architecture.

The courses for the freshman, sophomore and junior years in Marine Engineering and Naval Architecture are substantially the same as for the regular student of Mechanical Engineering. A senior year is especially arranged for such as desire to take this work, similarly to the arrangement for the electrical engineering course. This may be taken as regular elective work, whenever desired, by seniors in other courses. Special elective work can sometimes be provided. Circulars are sent on application.

Senior Year.	No. Course.	1st Term.	2d Term.	3d Term.
Naval Architecture	M. C. 20	4	4	3
Ship Const'n and Design	M. C. 21	5	5	5
Marine Engineering	M. C. 22	5	5	5
Steam Engine and other Motors	M. E. 20	5	5	Thesis 12
Mechanical Laboratory	X. E. 20	2	2	–
Physical Laboratory	5	2	2	–
Shopwork	M. A. 20	2	2	–

Of the above courses, the last four and from 6 to 9 hours of the first three are required.

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†Students taking this course are entitled to the degree of M.E.; and the statement that they have given special attention to electrical work is engrossed on their diploma. None should enter it unless strong in *mathematics, both pure and applied, and in physics.*

*This term is devoted largely to the preparation of a thesis, which must be approved by the Director. *If not otherwise arranged, the student will take shopwork laboratory work, and drawing, 3 hours each.* Elective time in the Fall and Winter terms may be devoted to thesis work if desired, and a corresponding amount of elective time added to the Spring term in substitution for such work. See fina note.

Graduate Year.	1st Term.	2d Term.	3d Term.
Naval Arch. and Ship Design	10	10	10
Marine Engineering	10	10	10
Seminary	1	1	1
Elective	4	4	4

Of the above work in the graduate year, 15 hours per week is considered full time, and the student is expected to elect them between courses (30), (31), (32), (33), (34), (35).

Courses in Railway Mechanical Engineering.

The freshman, sophomore, and junior years are identical with the regular course in mechanical engineering. The senior year of the Graduate School of Railway Mechanical Engineering is arranged to take the place of the senior year in the regular course. The graduate year is arranged for those who have taken the senior railway year.

For graduate students who have not taken any of the railway subjects of the senior railway year, but have had the equivalent of M. E. 20, X. E. 20, Physical Laboratory 5, and M. A. 20, a special graduate year is provided, consisting of R. 20, R. 21, R. 22, two hours of R. 30, E. E. 32, and electives as follows: 4 hours first term, 4 hours second term, and 7 hours third term.

The senior railway courses may be elected separately by seniors in other departments or by juniors who may have the proper preparation and time.

Circulars are sent on application.

Senior Year.	No. Course.	1st Term.	2d Term.	3d Term.
Rolling Stock	R. 20	4	4	4
Locomotive Designing	R. 21	3	3	–
Seminary	R. 22	1	1	1
Electric Railways	E. E. 32	1	1	–
Steam Eng., other Motors	M. E. 20	5	5	Thesis 12
Mechanical Laboratory	X. E. 20	2	2	–
Physical Laboratory	5	2	2	–
Shopwork	M. A. 20	2	2	–
Elective		–	–	0 to 3

Graduate Year.	No. Course.	1st Term.	2d Term.	3d Term.
Advanced R'y Mech'l Eng.	R. 30	5	5	5
Railway Designing	R. 31	3	3	3
Seminary	R. 22	1	1	1
Elective		6	6	6

Courses of Instruction.

The courses in each department are numbered in accordance with the following plan:

Numbers 1 to 4 inclusive denote Freshman subjects.
" 5 to 9 " " Sophomore "
" 10 to 19 " " Junior "
" 20 to 29 " " Senior "
" 30 to 35 " " Graduate "

Three hours in the shops or drawing rooms, or two and one-half hours in the laboratories count as one hour in the schedule.

Department of Mechanical Engineering. [M.E.]

20. **Steam Engines and other Motors.** Thermodynamics and the theory of steam and other heat engines. Fall and winter terms. Lectures. Five hours. Daily, except S., 11. Professor THURSTON.

21. **Applied Theory of Steam and other Engines.** Finance of Design and Operation. Spring term. Two hours. T., Th., 11. Professor THURSTON.

30. **Advanced Work in Special Courses and Graduate Work in Mechanical Engineering.** As may be assigned by Professor THURSTON.

31. **Finance of Engineering and Economics of Manufacturing Establishments.** Spring term, elective. Three hours. M., W., F., 11. Professor THURSTON.

Department of Experimental Engineering. [X.E.]

10. **Materials of Engineering.** Juniors. One hour. Lectures. M., 9; Th., 9; F., 9. Professor CARPENTER and Mr. SHANTZ.

11. **Mechanical Laboratory.** Three hours. Juniors. Fall term. Lectures. Strength of materials, tension, and transverse testing, calibrating, dynamometers, steam gauges, weirs, and meters. Winter term. Lectures. Strength of materials, compression, torsion and impact testing, oil testing, flue gas analysis, calorimetry, thermometer calibration, valve setting and indicator practice. Spring term. Lectures. Strength of large specimens, special research, strength of materials, test of durability of lubricants, efficiency tests, water motors, centrifugal pumps, gas engines, injectors, steam pumps, and indicator practice. One hour of class room work. Daily 2–5. Professor CARPENTER, Messrs. SHANTZ and DIEDERICHS.

20. **Mechanical Laboratory.** Two hours. Seniors. Fall term. Lectures. Efficiency tests, steam boilers, steam engines, turbine water-wheels, air-compressor, hot air engines, transmission of power by belting and gearing. Winter term. Lectures. 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. Spring term. Special research, thesis work. Daily 2–5. Professor CARPENTER, Messrs. SHANTZ and DIEDERICHS.

21. **Elementary Problems in Consulting Practice.** Power Plant Design. Engine Handling. Seniors. Lectures. M., T., 5–6. Mechanical Laboratory practice and research. Daily 2–5. Professor CARPENTER.

30. **Special Research; Commercial Tests.** Graduates and advanced students. Professor CARPENTER, Messrs. SHANTZ and DIEDERICHS.

Department of Electrical Engineering. [E.E.]

10. **Electrical Machinery.** Juniors. Two hours. Recitations. M., W., 9, 11, 12; T., Th., 11, 12. Mr. HOXIE.

20. **Electrical Engineering.** Requires Course 7 C. E. and Junior Physics. Seniors. Fall and winter terms. Three hours. Lectures. T., Th., S., 12. Professor RYAN.

21. **Designing and Drawing.** Seniors. Fall and winter terms. Three hours. M., T., W., Th., 8–11. Professor RYAN, and Mr. NORRIS.

22. **History of the Development of Electrical Engineering.** Lectures. Seniors and graduates. Spring term. One hour. T., 12. Professor RYAN.

23. **Finance of the Production and Utilization of Electrical Energy.** Lectures. Seniors and graduates. Spring term. One hour. Th., 12. Professor RYAN.

30. **Electrical Engineering.** Study of University equipment, local "plants," etc. Two hours. Spring term. Professor RYAN and Mr. NORRIS.

31. **Electrical Engineering.** Graduates. Professor RYAN and Mr. HOXIE.

32. **Electric Railways.** Advanced work. One hour. Fall and winter terms. S., 9. Professor RYAN.

33. **Electrical Engineering.** Practical tests of equipment and materials. Fall and winter. S., 8. Mr. NORRIS.

Department of Mechanic Arts. [M.A.]

1. **Shopwork.** Woodworking; use of tools; carpentry; joinery; pattern making; turning.

5. **Shopwork.** Blacksmithing; use of tools, forging, welding, tool-dressing, etc.

10. **Shopwork.** Foundry work : moulding, casting, mixing metals, brass work, etc.

20. **Shopwork.** Machinist work ; use of hand and machine tools; working to form and to gauge ; finishing ; construction ; assemblage; erection.

Each of the above courses 3 hours. Daily as assigned, 8–11, 1–2, 2–5. Professor MORRIS ; Messrs. WISEMAN, WOOD, VANDERHOEF, GRANGER, POLLAY, VANDERHOEF, STARKINS, and HEAD.

Department of Industrial Drawing and Art. [D.]

1. **Freehand Drawing.** (a) Freshmen. Three hours. Daily, 8–11, 2–5, ex. S. Assistant Professor CLEAVES, Messrs. GUTSELL, FURLONG and WILSON. (b) Pen and Ink. (c) Decoration, Modelling, Water-colors, as assigned.

2. **Instrumental Drawing.** Required of freshmen in Mechanical and Electrical Engineering. Spring term. Three hours. Daily, 8–11 ; M., W., F., 2–5. Assistant Professor CLEAVES, and Messrs. FURLONG and WILSON.

5. **Mechanical Drawing.** Specials and sophomores. Two hours. Daily as assigned. Messrs. J. S. and D. REID.

20. **History of Art.** Lectures on Painting, Sculpture, and the Industrial Arts in mediæval and modern times. T., Th., 12. Mr. GUTSELL.

Department of Machine Design. [M.D.]

10. **Kinematics and Drawing.** Requires course 3 C. E. Juniors. Three hours. Lectures and Drawing. Lectures (1 hour), T., 9. Assistant Professor KIMBALL. Drawing (2 hours credit) ; M., W., F., 8–10 ; 10–12 ; T., Th., S., 11–1. Assistant Professor KIMBALL and and Mr. NOE.

11. **Steam Machinery.** Requires course 1 Physics, and 7 C. E. Juniors. Two hours. Recitations. T., Th., 11, 12 ; W., F., 10, 11 ; Th., S., 8. Mr. SHEPARD.

12. **Machine Design.** Requires course 7 C. E. Juniors. Three hours. Lectures and Recitations. Lectures (2 hours), T., Th., 10. Recitations (1 hour), W., 9, 11 ; F., 9, 10, 11. Mr. BARNARD.

20. **Steam Engine Design.** Requires course 11. Seniors. Fall and winter terms. Three lectures. M., W., F., 12. Mr. SHEPARD.

21. **Designing and Drawing.** Requires course 11. Seniors. Fall and winter terms. Three hours credit. Designing of engines, boilers, steam plants, etc. ; intended to accompany course 20. Drawing daily, except M., 8–11. Messrs. SHEPARD, BARNARD and NOE.

22. **Machinery and Millwork.** Requires course 10. Seniors. Fall and winter terms. Two lectures. T., Th., 12. Assistant Professor KIMBALL.

23. **Designing and Drawing.** Requires course 10. Seniors. Fall and winter terms. Four hours credit. Designing of machine tools, transmission machinery, hoisting machinery, etc.; intended to accompany course 22. Drawing daily except M., 8–11. Assistant Professor KIMBALL, and Messrs. BARNARD and NOE.

34. **Advanced Designing.** Requires courses 20 and 21; or 22 and 23. Assistant Professor KIMBALL.

School of Marine Construction. [M.C.]

20. **Naval Architecture.** Elementary theory of a floating body. Computation of various geometrical quantities. Stability. Strength of ship. Introduction to resistance, propulsion, and powering. Lectures and exercises in computations. Four hours. Lectures T., Th., 9. Professor DURAND.

21. **Shipbuilding and design.** Methods of ship construction. Laying down and fairing lines. Drawing out scantling sections in accordance with the rules of Registration Societies. Drawing various structural elements. Introduction to problem of design, embodying the application of the subjects considered in course 20. Lectures and drawing. Five hours. Lectures, M., W., F., 9. Assistant Professor MCDERMOTT.

22. **Marine Machinery.** Descriptive study of marine boilers, engines, and auxiliary machinery. Design of characteristics and of structural details. Operation and care when under way. Lectures and drawing. Five hours. Lectures, M., W., F., 10. Professor DURAND.

30. **Naval Architecture.** Advanced work. As assigned. Professor DURAND.

31. **Ship Design.** Advanced work. As assigned. Assistant Professor MCDERMOTT.

32. **Marine Machinery.** Advanced work as assigned. Professor DURAND.

33. **Seminary.** One hour. Professor DURAND and Assistant Professor MCDERMOTT.

34. **Specifications, Contracts, Estimates.** As assigned. Assistant Professor MCDERMOTT.

35. **Marine Auxiliaries.** As assigned. Professor DURAND and Assistant Professor MCDERMOTT.

School of Railway Mechanical Engineering. [R.]

20$_c$ **Rolling Stock.** The designing, manufacture, service in operation, and repairing of locomotives, tenders and cars. Requires M. D. 11 and 12. Four lectures. M., T., Th., F., 8. Assistant Professor HIBBARD.

21. **Locomotive Designing.** Requires M. D. 11, 12. Fall and winter terms, elective spring. Three hours (nine hours in drafting room), forenoons as may be arranged. Assistant Professor HIBBARD.

22. **Seminary.** Discussion upon previously assigned railway journals. Special papers and reports. Juniors, seniors and graduates. One hour. W., 8. Assistant Professor HIBBARD.

30. **Advanced Railway Mechanical Engineering.** Lectures and directed reading in amplification of course 20, taking up also Shop Arrangement, Equipment and Methods, Drafting Room Management, Railway Testing and Test Department, Organization, methods and records of Motive Power Department, Foreign Railway Engineering, Compound Locomotives, Freight Car Design. Five hours, as assigned. Assistant Professor HIBBARD.

31. **Railway Designing.** Advanced work. Three hours, as assigned. Assistant Professor HIBBARD.

X. E. 20 includes locomotive road-testing.

D. 5. **Mechanical Drawing.** Those expecting to enter the Railway School should devote considerable time in this course to locomotive details. Specials and sophomores. Two hours. Messrs. J. S. and D. REID.

N. B.—It is particularly recommended and desired that at least one entire summer vacation, previous to taking any work in this school be spent in the shops of a railroad or locomotive builder. Arrangements are made for this through Assistant Professor HIBBARD.

Suggested Electives: M. E. 21, 30, 31. X. E. 21, 30 in railway equipment and supplies. E. E. 23; 31. M. D. 20, 21, 22. C. E. 10, 13, 38, roofs, cranes and turn tables, 39, 42. Political Economy: Elementary 51, Transportation 62, Wages 55. Law: Contracts, Torts, Specifications, Patents, Carriers, Corporations. Chemistry 7. Advanced railway quantitative analysis. 270 hours of actual work in the laboratory, subdivided as follows, will be sufficient: The irons, 50; oils, 30; paints and varnishes for wood and for iron, 30; boiler feed water, 30; feed water compounds, 30; alloys of copper, tin, zinc, lead, antimony, phosphorus, 50; steam pipe coverings, 20; waste, 20; sulphur in coal, 10. Also Chemistry, course 10.

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 their college work.

The Frank William Padgham Scholarship will be assigned to the best competing candidate in the scholarship examinations in the studies required for entrance to the regular course in Mechanical Engineering, who shall have had his preparatory education in the public schools of Syracuse, New York. For particulars see pp. 59 and 60 or address the Registrar.

THE UNIVERSITY LIBRARY.

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FRANK DELBERT MOREHOUSE, Assistant in the Law Library.
ROBERT JAMES MOORE, Assistant in the Law Library.
CHARLES EZRA CORNELL, A.B., LL.B., Librarian of the New York State Veterinary College.

The University Library comprises the General Library of the University, the seven Seminary Libraries, the Law School Library

and the Flower Veterinary Library. The total number of bound volumes in the University Library is now two hundred and twenty-five thousand and twenty-two, distributed as follows:

General Library	192,920
Seminary Libraries	3,340
Law School Library	27,562
Flower Veterinary Library	1,200
	225,022

The General Library of the University and the Seminary Libraries are all grouped under one roof in the Library Building, while the Law School 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 gray Ohio sandstone, and its construction is fireproof throughout. It is heated by steam from the central heating station, is provided with a thorough system of artificial ventilation, and fully equipped with incandescent electric lights. The extreme dimensions of the building are one hundred and seventy by one hundred and fifty-three feet, and it has a storage capacity of four hundred and seventy-five thousand volumes. The general outlines of the ground plan are somewhat in the form of a cross, the bookstacks occupying the southern and western arms, the reading room and periodical room, the eastern, the White Historical library, the seminary rooms and the offices of administration, the northern. The abundantly lighted and handsomely furnished reading room contains ample accommodations for two hundred and twenty readers, and the open book-cases around its walls provide shelf-room for a carefully selected reference library of eight thousand volumes. In the basement, beneath the reading room, is a lecture room, with seating capacity for nine hundred and eighty auditors. In the tower are placed the great bell of the University, the gift of Mrs. Mary White, the chime of bells, the gift of Mrs. Jennie McGraw-Fiske, and the University clock.

The General Library is under the supervision of the LIBRARY COUNCIL, consisting of seven members, as follows: The President of the University and the Librarian, *ex officio*, one member chosen by the Board of Trustees, and four members nominated by the University Faculty and confirmed by the Board of Trustees. The President of the University is *ex officio* chairman of the council. The elected members hold office until their successors are chosen.

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 library, the average annual additions being now about twelve thousand volumes. The number of periodicals and transactions, historical, literary, scientific and technical, currently received, is over eight hundred, and of many of these complete sets are on the shelves.

Among the more important special collections which from time to time have been incorporated in the General Library may be mentioned: THE ANTHON LIBRARY, of nearly seven thousand volumes, consisting of the collection made by the late Professor Charles Anthon, of Columbia College, in the ancient classical languages and literatures, besides works in history and general literature; THE BOPP LIBRARY, of about twenty-five hundred volumes, relating to the oriental languages and literatures, and comparative philology, being the collection of the late Professor Franz Bopp, of the University of Berlin; THE GOLDWIN SMITH LIBRARY, of thirty-five hundred volumes, comprising chiefly historical works and editions of the English and ancient classics, presented to the University in 1869 by Professor Goldwin Smith, and increased during later years by the continued liberality of the donor; THE PUBLICATIONS of the Patent Office of Great Britain, about three thousand volumes, of great importance to the student in technology and to scientific investigators; THE WHITE ARCHITECTURAL LIBRARY, a collection of over twelve hundred volumes relating to architecture and kindred branches of science, given by ex-President White; THE KELLEY MATHEMATICAL LIBRARY, comprising eighteen hundred volumes and seven hundred tracts, presented by the late Hon. William Kelley, of Rhinebeck; THE CORNELL AGRICULTURAL LIBRARY, bought by the late Hon. Ezra Cornell, chiefly in 1868; THE SPARKS LIBRARY, being the library of Jared Sparks, late president of Harvard University, consisting of upwards of five thousand volumes and four thousand pamphlets, relating chiefly to the history of America; THE MAY COLLECTION, relating to the history of slavery, and anti-slavery, the necleus 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 1892, especially

rich in the primary sources of history, and containing notable collections on the period of the Reformation, on the English and French Revolutions, on the American Civil War, and on the history of superstition; THE ZARNCKE LIBRARY, containing about thirteen thousand volumes and pamphlets, especially rich in Germanic philology and literature, including large collections on Lessing, Goethe, and Christian Reuter, purchased and presented in 1893 by William H. Sage; THE DANTE COLLECTION, containing at present over six thousand volumes, presented in 1893-8 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 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, with certain restrictions, is extended to graduate students, candidates for advanced degrees. Books may also be taken for home use by students after twelve o'clock on days preceding holidays, when the library is closed, to be returned at the reopening of the library. The library is open on week days, during term time, from 8 A.M. till 11 P.M., except on Saturdays, when it is closed at 5 P.M. In vacation it is open on week days from 9 A.M. till 5 P.M.

All students of the University have free access to the shelves of the Reference Library of eight thousand volumes in the main reading room, but apply at the delivery desk for other works they may desire. This reference Library comprises encyclopædias, dictionaries, and standard works in all departments of study, together with books designated by professors for collateral reading in the various courses of instruction. In the same room, and accessible to all readers, is the card catalogue of the general library, including also the books in the seminary libraries. The catalogue is one of authors and subjects, arranged under one alphabet on the dictionary plan. Cards of admission to the shelves in the stack-rooms, and to the White Historical Library, will be issued by the librarian to graduate students for purposes of consultation and research, and also to members of the senior or junior classes upon the recommendation of any professor under whom they may be engaged in advanced work.

Since its incorporation with the general library in 1891, the valuable historical collections of the PRESIDENT WHITE LIBRARY are displayed

in a spacious room, in the north wing of the Library Building, communicating directly with the historical seminary rooms. The White Library is open only to officers of the University, members of the seminaries, and others holding cards of admission. The SEMINARY ROOMS in the Library Building contain the seminary libraries proper, supplemented by collections of works and periodicals from the general library deposited in these rooms for use in Seminary work. Books so deposited in the seminary rooms are available for the use of students in the general reading room, except when in actual use in the seminaries. The books forming the seminary libraries proper are subject to such regulations as may be made for each seminary room by the professor in charge, to whom application for admission to the room must be made. In several of the scientific and technical departments similar collections of reference books have been formed, access to which may be obtained upon application to the department concerned.

The Law School Library occupies the third floor of Boardman Hall. It includes the famous library of the late N. C. Moak, which was presented to the school, in 1893, by Mrs. Douglas Boardman and Mrs. George R. Williams, as a memorial of Dean Boardman. This collection contains all the reports of every State in the Union, all the Federal reports, all the English reports, the colonial reports, complete sets of all the leading legal periodicals, all kept up to date. It is also rich in sets of leading cases and in specialties, and contains a large collection of text books, thus offering facilities second to none in the country.

BIBLIOGRAPHY.

The following course is offered for 1899–1900:

Introductory survey of the historical development of the book, illustrated by examples of manuscripts and incunabula: explanation of book sizes and notation; systems of classification and cataloguing; bibliographical aids in the use of the Library. Winter and spring terms. One hour. M., Mr. HARRIS.

THE SAGE CHAPEL AND BARNES HALL.

The Sage Chapel.—The chapel is situated between Boardman and Barnes Halls. Its auditorium has a seating capacity of eight hundred persons. In the chapel discourses, provided for by the Dean Sage Preachership Endowment, are delivered by eminent clergymen selected, in the spirit of the charter, from the various religious denominations. 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."

The Sage Chapel was given to the University in 1873 by the Hon. Henry W. Sage. In 1884 the University and the estate of Jennie McGraw-Fiske joined in erecting, upon the north of THE SAGE CHAPEL, THE MEMORIAL CHAPEL, as a memorial to Ezra Cornell, John McGraw, and Jennie McGraw-Fiske, whose remains there repose. In the summer of 1898 the University reconstructed THE SAGE CHAPEL and doubled the seating capacity, which was previously four hundred. In 1898 also, the University erected at the eastern extremity of THE SAGE CHAPEL a semi-octagonal apse, as a memorial to the original donor of the Chapel, the late Hon. Henry W. Sage, and as a repository of his remains and those of his wife, Susan Linn Sage, at whose suggestion the original gift was made.

The Chapel as reconstructed is still in the Gothic style of architecture. It is built of red brick with elaborately carved stone trimmings. The elevations show two gables at the north side and two at the south, each gable containing a rose window of ten feet diameter, with stone tracery. A fifth similar (wheel) window is in the gable of the western half of the nave, which is all that remains of the original chapel. The window formerly in the east end of the nave has been placed in the east wall of the apse. In place of the tower, south transept, and eastern half of the nave of the original structure stand two parallel transepts covering a space 64 × 66 feet.

The Memorial Chapel, constructed 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. On entering the Chapel the eye is at once arrested by the rich memorial windows constructed by Clayton and Bell, of London. They are designed not only to commemorate the connection of Mr. Cornell, Mr. McGraw, and Mrs. Jennie McGraw-Fiske with this University, but

also to associate their names with the names of some of the greatest benefactors in the cause of education. The north window contains the figures of William of Wykeham, John Harvard, and Ezra Cornell; the east window the figures of Jeanne of Navarre, Margaret of Richmond, and Jennie McGraw-Fiske; the west window those of Elihu Yale, Sir Thomas Bodley, and John McGraw. Directly beneath the great northern window is a recumbent figure of Ezra Cornell, in white marble, of heroic size, by William W. Story of Rome; near this is another recumbent figure, that of Mrs. Andrew D. White, also in white marble, by Ezekiel, of Rome.

THE MEMORIAL APSE is a semi-octagonal structure 31 feet wide by 16 feet deep, which opens into the main building by a massive cut stone arch. The interior walls from the window-sills upward are of stone. The oaken ribs of the ceiling are carried on stone columns with carved capitals, supported by corbels.

Barnes Hall.—The University is indebted to the generosity of the late Alfred S. Barnes, Esq., of New York, for a commodious and elegant building designed mainly for the use of the University Christian Association. This building is one hundred and twenty feet by eighty feet in dimensions, and three stories in height. The material is brick, with trimmings of Ohio stone, brown stone, and granite. On the north, the main entrance is marked by a graceful tower rising to a height of one hundred feet. The building contains a secretary's room, assembly-room, library, reading-room, and all other needed accommodations for the work of the Association, in addition to a spacious auditorium, which occupies the larger 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 Christian Association is a voluntary organization of about five hundred students and professors for the promotion of their religious culture, and for Christian work in the University. It has a permanent Secretary, a carefully selected library of biblical literature, and a well-equipped reading room of religious and secular journals. Courses of Bible study are carried on by the Association throughout the year. A committee of this Association is in attendance at Barnes Hall during the first week of every fall term for the purpose of assisting those entering the University with information in regard to rooms, board, times and places of examinations, etc., and in general to afford any assistance in their power which students who are strangers in Ithaca may feel inclined to seek from them.

THE CORNELL INFIRMARY.

The mansion of the late Hon. Henry W. Sage was in 1897 presented to the University by his sons Dean Sage and William H. Sage, to be known and used as the Cornell Infirmary. To this gift the donors added an endowment of $100,000, and during the summer of 1898 they refitted the mansion for its new purpose at their own expense.

The building is a structure of Medina brownstone 96 x 88 feet, including verandas and porches, and three stories in height besides a basement. A wide hall runs through the first floor from south to north, having on the right a sitting room for young women, the dining-room, pantry, and kitchen; on the left the library, which will be used as a sitting room for young men, the Matron's office, bath room, lavatory and telephone closet, and an emergency room. On the second floor are four large rooms for the sick, two nurses' rooms, two large bath rooms, a small nurses' kitchen, a large room for surgical work, with an instrument room containing sink, cold and hot water, and a slop closet, not connected with the bath rooms. On the third floor is the Matron's room, two large rooms for patients, two nurses' rooms, three servants' rooms, a bath room, nurses' kitchen, slop closet, store rooms, linen closets, etc. The basement contains a laundry, servants' bath room, and the heating apparatus.

The house is supplied throughout with both gas and electric lighting; and heated by a system of hot water. The height of the rooms in the first story is 12½ feet in the clear; that of the rooms in the second story is 11 feet; and the rooms on the third story are 10½ feet in the clear. There is also a high attic. There is a balcony opening from one third-story room, upon which a bed can be rolled, and there are large verandas.

SUMMER SESSION.

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.

ISAAC PHILLIPS ROBERTS, M.Agr., Professor of Agriculture in charge of Nature-Study on the Farm.

HORATIO STEVENS WHITE, A.B., Professor of the German Language and Literature.

JOHN HENRY COMSTOCK, B.S., Professor of Entomology, in charge of Nature-Study in Insect Life.

LIBERTY HYDE BAILEY, M.S., Professor of Horticulture in charge of Nature-Study in Plant Life.

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

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

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

EDWARD BRADFORD TITCHENER, A.M., Ph.D., Sage Professor of Psychology.

GEORGE FRANCIS ATKINSON, Ph.B., Professor of Botany.

RALPH STOCKMAN TARR, B.S., Professor of Geology and Physical Geography.

GEORGE PRENTICE BRISTOL, A.M., Professor of Greek.

EVANDER BRADLEY McGILVARY, A.B., Ph.D., Sage Professor of Moral Philosophy.

—— —— —— Professor of Political Science.

—— —— —— Professor of English Literature.

PIERRE AUGUSTINE FISH, B.S., D.Sc., D.V.S., Assistant Professor of Physiology.

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

WILLIAM STRUNK, JR., A.B., Ph.D., Assistant Professor of Rhetoric and English Philology.

ANNA BOTSFORD COMSTOCK, B.S., Assistant Professor of Zoology with reference to Nature-Study in Insect Life.

—— —— ———— Assistant Professor of Vertebrate Zoology.

—— —— ———— Assistant Professor of Psychology.

HIRAM SAMUEL GUTSELL, B.P., A.M., Instructor in Drawing and Industrial Art.

JOHN SIMPSON REID, Instructor in Mechanical Drawing and Designing.

FREDERICK JOHN ROGERS, M.S., Instructor in Physics.

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

DANIEL ALEXANDER MURRAY, Ph.D., Instructor in Mathematics.

BLIN SILL CUSHMAN, B.S., Instructor in Chemistry.

THEODORE WHITTELSEY, A.B., Ph.D., Instructor in Chemistry.

GEORGE ABRAM MILLER, A.M., Ph.D., Instructor in Mathematics.

HEINRICH RIES, Ph.D., Instructor in Economic Geology.

HECTOR RUSSELL CARVETH, Ph.D., Instructor in Chemistry.

MARY ROGERS MILLER, Instructor in Nature-Study, with special reference to Insect Life.

—— —— ———, Instructor in Nature-Study in Insect Life.

JOHN LEMUEL STONE, B.Agr., Instructor in Nature-Study in Farm Life.

LOUIS ADELBERT CLINTON, B.S., Instructor in Nature-Study in Farm Life.

GEORGE NIEMAN LAUMAN, B.S.A., Instructor in Nature-Study in Farm Life and Plant Life.

—— —— ———, Instructor in Nature-Study in Plant Life.

—— —— ———, Instructor in Nature-Study in Plant Life.

—— —— ———, Instructor in Nature-Study in Plant Life.

JAMES WISEMAN, Foreman of the Machine Shop.

WILLIAM HENRY WOOD, Foreman in Wood Shop.

JAMES WHEAT GRANGER, Foreman in Forging.

JAMES EUGENE VANDERHOEF, Foreman in Foundry.

GUY MONTROSE WHIPPLE, A.B., Assistant in Psychology.

HEINRICH HASSELBRING, B.S.A., Assistant in Botany.

ROY MANDEVILLE VOSE, Assistant in Physiology.

JUDSON FREEMAN CLARK, B.S. in Agr., A.M., Assistant in Botany.

MARGARET EVERETT SCHALLENBERGER, A.B., Assistant in Psychology.

JAMES OTIS MARTIN, B.S.A., Assistant in Geology.

FRANKLIN SHERMAN, JR., Assistant in Nature-Study in Insect Life.

EXPENSES.

The single tuition fee for the entire Summer Session 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, except as below.

The only students excused from the payment of the fee of $25, are teachers from New York State who are enrolled in the course of Nature-Study. See pages 336 and 337.

Persons from other states taking the Nature-Study course must pay the regular fee of $25.

Information about board, room and other expenses, including shop and laboratory fees, may be found on pages 55 and 56.

CREDIT FOR WORK.

Regular matriculated students of the University may receive credit to the extent of ten university hours for work done during the Summer Session.

Students of the Summer School not matriculated in the University may receive certificates of attendance and satisfactory work done.

In the announcement below, "five hours", "three hours", etc., indicates the number of lectures and recitations given each week. Where the hours and days are not given in the announcements they will be arranged for later.

The number of university hours allowed for each course may be determined from the professor concerned.

A fuller announcement of the Summer Session will be sent on application to the Registrar.

COURSES OF INSTRUCTION.

GREEK.

A. **The Greek Language.**

(1) The elements of phonetics, and the analysis of sounds in Greek and in English. History of the Greek alphabet. Pronunciation in theory and in practice. Accent in speaking and in writing. The relation of Greek to Latin and to English. The Greek elements in English. T.. Th., 8. *White 3 B.* Professor BRISTOL.

(2) The Attic dialect in its official use at Athens. Study and interpretation of inscriptions from squeezes, lantern views and photographs. S., 8–10. *White 6.* 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 features of life in the "Homeric period"; the value of archæology for the understanding of the poem; aims and methods in translating.

(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. M., W., F., 8. *White 3 B.* Professor BRISTOL.

C. **Greek Lyric Poetry.** Selections from the lyric fragments in Hiller's "Anthologia Lyrica." (Continuation of the reading done in 1899.) Selected idyls of Theocritus. M., T., Th., F., 9. *White 3 B.* Professor BRISTOL.

Persons who contemplate taking any of the above work are requested to correspond with Professor Bristol.

LATIN.

A. Course for Teachers.

(a) **Pronunciation.** Evidences in support of the Roman method. Sources of knowledge. Testimony of the Roman grammarians. Evidence from philological investigation.

(b) **Hidden Quantity.** Should we pronounce *fĕstus* or *fēstus? mĭssus* or *mīssus? cīnctus* or *cĭnctus? etc.* Methods of determining the quantity of hidden vowels.

(c) **Orthography.** What should be the standard in spelling? Should we write *volnus* or *vulnus; aequos, aequus* or *aecus: optumus* or *optimus; adsequor* or *assequor; inrideo* or *irrideo, etc.?*

(d) **Syntax of the Subjunctive.** The subjuuctive in independent sentences. Origin of the different varieties of the subjunctive appearing in subordinate clauses. Development of the thesis that all subordinate uses of the subjunctive are an outgrowth of originally independent sentences.

Syntax of the Cases. Fundamental force of the several (e) cases. Explanation of the different uses that have developed from each of these.

(f) Discussion of the purposes and methods of Preparatory Study of Latin, as follows: Why is Latin of value to the secondary student? The elementary work. What author should be read first? Reading at sight. Unseen translation. Theory of Latin versification. What was ictus? How to read poetry. Latin composition. How to teach it.

The Teachers' course will be conducted mainly by lectures. Daily ex. W. and S., 10. *Morrill 3.* Professor BENNETT.

B. Translation Course.

Interpretation of Plautus's *Captivi* and Terence's *Andria.* Lectures on Latin Comedy. Daily ex. W. and S., 11. *Morrill 3.* Professor BENNETT.

C. Textual Criticism.

Introduction to the textual and exegetical study of Horace's *Odes.* W., S., 10–11.30. *Morrill 3.* Professor BENNETT.

Courses A. and C. are intended more particularly for graduates; but A. is well adapted for any teacher of Latin who has already had practical experience in giving instruction.

GERMAN.

A. **Selections from the standard German Classics.** Lessing, Goethe, Schiller and Freytag. Translation, and comments on the text, including points of etymology, syntax, and literary criticism; and practical directions to teachers regarding a linguistic school-equipment, and the preparation of the subjects presented. M., T., W., Th., F., 10. *Morrill* 5. Professor WHITE.

B. **Heine's Life and Works.** Selections from Heine's prose and poetry, with an examination of his views on literature, art, politics, and religion; and some study of the metrical and linguistic characteristics of his verse. M., T., W., Th., F., 9. *Morrill 5.* Professor WHITE.

ROMANCE LANGUAGES.

A. **Recent French Literature.** Selections from Coppée and Maupassant. Rostand's *Cyrano de Bergerac.* Translation and comments on the text, including points of etymology, syntax and literary criticism, with practical directions to teachers regarding a linguistic school-equipment and the preparation of the subjects presented. M., T,, W., Th., F., 8. White 10. Assistant Professor OLMSTED.

B. **The French Drama of the Eighteenth Century.** Translation, and comments on the text, with reference to the question of versification, the unities, the decline of the classical drama, and relation to the political condition of France. M., T., W., Th., F., 9. *White 10.* Assistant Professor OLMSTED.

ENGLISH.

A. **English Literature.** Courses in English Literature will be arranged for and announced in the larger circular which may be had on application. Professor ———.

B. **The Drama.** Its Theory and Forms, with English illustrations. Lectures and Exercises. Five hours. Daily except S., 9. *White 2.* Assistant Professor STRUNK.

SCIENCE AND ART OF EDUCATION.

A. **The Philosophy of Education.** Lectures, discussions, and readings. Daily ex. Sat., 10. *White 10.* Professor DEGARMO.

This course is founded upon the dual character of education. It will discuss the following topics: The bearing of social forces upon education. The doctrine of interest. The function of imitation in education, apperception, will training. The doctrine of formal culture. The relative value of studies. The correlation of studies. The laws governing rational methods of teaching in departments and individual branches, as founded upon general logic, the logic of sense-perception and apperception.

B. **History of Education.** Lectures, discussions, and prescribed reading. Daily ex. Sat., 11. *White 10.* Professor DEGARMO.

This course will give a survey of the leading educational movements of the 18th and 19th centuries in education, including a special study of Rousseau, Pestolozzi, Froebel, Herbart, and the leaders of modern scientific education. It will also trace the development of humanism, and make a survey of the history of modern science as an instrument of instruction.

PSYCHOLOGY.

A. An elementary course in laboratory work. Textbook: Titchener's First Experiments in Psychology. M., W., F., 2. Professor TITCHENER, Assistant Professor ———, Mr. WHIPPLE and Miss SCHALLENBERGER.

B. An elementary course in general psychology. Textbook: Titchener's Prinmer of Psychology. M., W., F., 9. Assistant Professor ——— and Miss SCHALLENBERGER.

C. Typical psychological problems and the manner of their solution. T., Th., 9. Assistant Professor ———.

D. Advanced laboratory work. Hours to be arranged. Professor TITCHENER and Mr. WHIPPLE.

All courses will be given in the *Psychological Laboratory, Morrill Hall.*

ETHICS.

A. **Systematic Ethics.** An elementary course with emphasis upon the social basis of moral action. Readings in assigned authors, with lectures, and discussions. Five hours. Daily ex. S., 9. *White 9.* Professor MCGILVARY.

B. **Development of Morals and Moral Theory.** Typical stages in the ethical progress of the race will be studied, and the more prominent ethical theories will be explained and examined. Lectures and readings. Five hours. Daily ex. S., 8. *White 9.* Professor MCGILVARY.

HISTORY.

A. **Ancient Rome.** Course for teachers. Discussions of methods, of sources, and of literature, with practical exercises in research. T., Th., 12. *Barnes Hall.* Professor BURR.

B. **The Dawn of Modern History.** Lectures and chats on the history of Christendom during the later Middle Ages, with especial attention to social life and progress: the Crusades and their outcome,—the rise of commerce, industry, and modern thought,—the Church and the heretics,—the revival of literature, of art, of science, of conscience. M., W., F., 12. *Barnes Hall.* Professor BURR.

C. **Historical Method.** A practice-class for study of the materials and methods of History and for training in their use—historical investigation, criticism, and interpretation. M., 3–5. *European History Seminary.* Professor BURR.

D. **Palæography.** The reading of historical manuscripts, especially those of the Middle Ages. A practice-class, dealing at first hand with originals and facsimiles. Some previous knowledge of Latin is necessary. W., 3–5. *European History Seminary.* Professor BURR.

CIVICS, POLITICAL AND SOCIAL SCIENCE.

Courses will be arranged, with special reference to meeting the needs of teachers of History and of Civics.

The courses below were given in 1899 and those for 1900 will be of like grade and will have the same purpose as mentioned below; but will be arranged to suit the wishes of the professor in charge. An effort will be made to change the courses from year to year enough so that the same student may profitably follow the work for successive years.

A. **Principles of Government.** The foundations for the study and teaching of Civics and Civil Government. The specific use to be made of other subjects of study, such as geography, history and literature will be discussed, as well as practical exercises to be employed in all grades of school and college work. 8 A. M. *Morrill 12.* Professor ———.

B. **Comparative Governments.** Study of the governments of leading foreign countries, and the use to be made of them in teaching the Civil Government of the United States. 9 A.M., *Morrill 12.* Professor ———.

While these courses are partly pedagogical in nature, they are studies of principles and are intended for graduate students as well as for practical teachers.

MATHEMATICS.

A. **Elementary and Advanced Algebra.** An advanced course on the principles of Algebra and methods of teaching it. Daily ex. Sat., 5. *White 21.* Dr. MILLER.

B. **Solid Geometry.** A review in which the primary definitions, the axioms, the fundamental theorems, and the theory of proportion of geometric magnitudes, will be critically examined. Daily ex. Sat., 4. *White 21.* Professor WAIT.

D. **Trigonometry.** An elementary course covering parts of Murray's Trigonometry. Daily ex Sat., 11. *White 17.* Dr. MURRAY.

E. **Analytic Geometry.** An elementary course covering parts of Tanner and Allen's Analytic Geometry. Daily ex. Sat., 9. *White 17.* Dr. MURRAY.

F. **Analytic Geometry.** An advanced course based on Salmon's Conic Sections. M., W., F., 9. *White 22.* Professor WAIT.

G. **Differential Calculus.** An elementary course covering parts of McMahon and Snyder's Differential Calculus. Daily ex. Sat., 8. *White 22.* Professor WAIT.

H. **Integral Calculus.** An elementary course covering parts of Murray's Integral Calculus. Daily ex. Sat., 10. *White 17.* Dr. MURRAY.

I. **Differential Calculus.** An advanced course, based on Todhunter's and Williamson's Differential Calculus. M., W., F., 10. *White 22.* Professor WAIT.

J. **Integral Calculus.** An advanced course, based on Todhunter's and Williamson's Integral Calculus. M., W., F., 12. *White 22.* Professor WAIT.

K. **Differential Equations.** An elementary course covering parts of Murray's Differential Equations. M., W., F., 8. *White 17.* Dr. MURRAY.

L. **Projective Geometry.** An elementary course in Cremona's Projective Geometry. M., W., F., 11. *White 22.* Dr. MILLER.

M. **Theory of Functions of a Complex Variable.** The elements of the theories of Cauchy, Riemann and Weierstrass. M., W,. F,. 9. *White 18A.* Dr. MILLER.

N. **Introductien to the Theory of Groups and the Theory of Numbers.** M., W., F., 10. *White 21.* Dr. MILLER.

O. **Seminary in Groups.** T., Th., 9. Dr. MILLER.

PHYSICS.

A. **Experimental Lectures in General Physics.** Three lectures per week. The course is intended to meet the needs of those who wish a general knowledge of physical laws or intend to use lecture methods in part of their teaching, as well as for those wishing a brief review of general physics. The unusually large collection of lecture-room apparatus makes it possible to illustrate a great number of physical phenomena. M., W., F., 12. Mr. SHEARER.

AA. **Recitations in General Physics.** This course may be taken with or without A, and is designed for those wishing to prepare for teachers' or other examinations. The number of hours per week, text-books, etc., to be arranged to suit the needs of applicants. A and AA may be taken by those wishing to prepare for the University examination at the beginning of the fall term. Mr. SHEARER.

B. **Laboratory work** in General Physics with accompanying lectures. This course is especially designed for teachers of Physics in

high schools and academies. Lecture at 8, Laboratory 8:40 to 12, daily ex. S. Mr. ROGERS.

C. **Physical Laboratory work.** Same as Course 3, page 141. Daily ex. S., 9–12. Mr. SHEARER.

D. **Advanced Laboratory work in Electrical Measurements.** Daily ex. S., 9–12. Mr. ROGERS.

CHEMISTRY.

A. **General Inorganic Chemistry.** Lectures, recitations, and laboratory work. The lectures, which are fully illustrated by experiments and by specimens from the chemical museum, are devoted to a discussion of the facts and theories of chemistry, and in connection therewith careful attention is given to the writing of chemical eqnations and the solving of chemical problems. The laboratory work furnishes an opportunity for gaining a practical knowledge of the chemical compounds and reactions discussed in the lectures. Daily ex. S., 8–12. Dr. CARVETH.

C. **Qualitative Analysis.**—Elementary. Laboratory work and recitations. A study of the reactions and separations of all the principal bases and of the mineral acids. Daily, 8–12. Dr. WHITTELSEY.

D. **Qualitative Analysis.**—Advanced course for those who have already had an equivalent of course C. This course will include the analysis and reactions of all the important acids, a study of oxidation and reduction reactions and a comparison of different methods of separation of the bases. Laboratory hours elective. Dr. WHITTELSEY.

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. This work may also include an extended course in the electrolytic separation and determination of the various metals. Laboratory hours elective. Mr. CUSHMAN.

BOTANY.

Lectures and laboratory practice in courses A, B, and C will be held at the time scheduled below unless a change is found to be necessary for a majority of the applicants. Three hours of actual laboratory work are required to count as one hour; and a lecture counts as one hour. The amount of time scheduled for each course is the minimum time per week, and a three hour course for the summer will count as two University hours.

Courses A and D are especially designed for those who are fitting themselves for teaching botany in the high schools. The work in these courses will be based on Atkinson's Elementary Botany, the most important topics being selected for study. The other courses will provide additional equipment for teachers who have already had course A. Courses A, B, D may all be combined in one summer for those who wish to put all their time on botany.

A. **Elementary Plant Physiology.** First half of the term. A study of the general principles underlying the processes of nutrition, growth, etc.

General Comparative Morphology. Second half of the term: A comparative study of the form and reproduction of representative species in all the great groups of plants. Six hours. M., W. Lectures, 9; laboratory practice 10–1, and 2–5. Professor ATKINSON and Mr. CLARK.

B. **Mycology.** Studies of the fleshy fungi with especial reference to methods of distinguishing the commoner edible and poisonous species, and the genera of the basidiomycetes. Six hours. T., Th. Lecture 9, laboratory practice 10–1, and 2–5. A portion of the time will be spent in the field. Professor ATKINSON and Mr. HASSELBRING.

C. **Advanced Course.** An opportunity will be offered for advanced work in Courses A and B by those who are prepared. Advanced students who are able to take up methods of research in these courses will be assigned some subject for investigation dealing with important botanical problems. It is very desirable that applicants for research work correspond with Professor Atkinson in advance to arrange for the work in order that ample provision may be made. Since the summer period is a short one research students will be expected to devote all their time to botany in order to accomplish satisfactory results. Hours for conference and laboratory work by appointment. Professor ATKINSON and Messrs. HASSELBRING and CLARK.

D. **Ecology**, or nature study in its broadest aspects as exemplified by plants. Lectures, Thursday at four o'clock, unless another hour is

found to be more desirable. The lectures will deal with the most important problems of the plant in relation to its environment, and will suggest suitable topics for study in the high schools. The lectures may be taken as a separate course.

One day each week will be devoted to excursions and explorations. Field studies will be made of the relations of plants to each other and to the different topographic conditions in the vicinity of Ithaca. The varied flora of this beautiful locality with its streams, chasms, lakes, moors and morainic regions, offers exceptional opportunities for the study of certain plant formations and of the life processes on a grand scale. Each student will be expected to prepare field notes, collections, and photographs illustrating the various phases of the study. A camera will be a desirable addition to an outfit for those who prefer to make their own illustrations, but students not possessing one can make arrangements with some one for the prints. The excursion and preparation of a note book will count four University hours.

Friday will be devoted to the excursion unless prevented by storm, when it will take place on the following Saturday or Tuesday.

Students' wishing to do additional work in this subject will be assigned some problems for independent study. Professor ATKINSON.

For description of the botanical laboratory, conservatory, the general equipment, etc., see the University Register, p. 155.

A small fee will be charged for the use of apparatus, material etc., in the laboratory courses. No laboratory fee will be charged in course D, but students are expected to bear their share of the expense of the excursions, and deposits must be made in advance.

Students who are prepared to take up graduate work can do so upon application.

GEOLOGY.

The Geological Department is equipped with an excellent teaching collection of maps, specimens and models, besides fully 3,000 lantern slides on geological and geographic subjects. The opportunity for field work near the University is excellent, particularly for the illustration of physiographic features. In addition to the field work near the University, voluntary excursions will be made each week to more distant points on Saturday, or in case two days are needed, upon Friday and Saturday. One excursion will go to the Mohawk Valley; one to the anthracite coal region at Wilkes-Barre; one to Niagara Falls; one to Watkins Glen and others to other places of special interest.

(A) **The Geography of North America.** A lecture course treating of the physiographic features of the continent, with especial reference to their influence upon the history and industrial development of the several nations of the continent. This course is intended primarily for teachers of geography, the object being to show the application of modern physiography to geography teaching. The lectures are fully illustrated by lantern slides. Three hours. M., T., W., 9. Professor TARR.

(B) **Physiography of the Land.** A course for teachers upon the modern aspect of physiography, treating the origin of land form and its relation to mankind. Four lectures a week, illustrated by lantern slides of various land forms, and one laboratory practice, chiefly devoted to the study of physiography in the field. Five hours. Lectures M., T., W., Th., 10. Laboratory M., afternoon. Profesor TARR, Dr. RIES and Mr. MARTIN.

(C) **General Geology.** A lecture, laboratory and field course with special stress upon the dynamic side of geology. Lectures illustrated by lantern slides ; and the laboratory work is largely done in the field. Five hours. Lectures. M., T., W., Th., 11. Laboratory T. afternoon, Professor TARR, Dr. RIES, and Mr. MARTIN.

(D) **Economic Geology.** A lecture course upon the Economic Geology of the United States, being devoted to a consideration of the various valuable mineral deposits from the standpoint of their cause, the materials produced from them and the effect of the mining industry upon the development of the country. Two hours. Dr. RIES.

VERTEBRATE ZOOLOGY.

Courses in **Vertebrate Zoology** will be arranged for and announced in a later circular. Professor ———.

PHYSIOLOGY.

The instruction will be given in the form of lectures and laboratory work ; the laboratory courses, to some extent, supplementing the others.

A. Among the subjects to be discussed are : foods ; the various processes of digestion and respiration. M., T., 10. *Veterinary College.* Assistant Professor FISH.

B. **The Physiology of circulation,** excretion, etc. W., Th., 10. *Veterinary College.* Assistant Professor FISH.

C. Laboratory work correlated with course A.

The experiments are devoted to the action of the digestive ferments upon various kinds of food and to a study of the blood, M., T., 2:30-5. *Veterinary College.* Assistant Professor FISH and Mr. VOSE.

D. Laboratory experiments in the physiology of the muscular, nervous and circulatory systems. W., Th., 2:30-5 P. M. *Veterinary College.* Assistant Professor FISH and Mr. VOSE.

In the lectures much attention is given to practical demonstrations and the exhibition of charts and preparations bearing upon the subject under discussion.

It is the purpose to have the work in this department bear as much as possible upon the direct and practical. Students are rendered every assistance in the comprehension of the fundamental parts of the work, without, however, losing sight of the fact that careful observation and self-interpretation are most essential for a thorough scientific training. Every encouragement is offered to those, properly fitted, to pursue their work upon special physiological problems.

The equipment includes dymographs, sphygmographs, induction coils, centrifuges, microscopes, and other apparatus usually found in a physiological laboratory. An abundance of material for experimentation is easily obtained, and to teachers or others who may be interested, directions are given as to how this may be procured and prepared to the best advantage.

The correlation of structure and function is discussed and a carefully selected supply of anatomical and histological preparations are shown and explained as may be required.

DRAWING AND ART.

A. **Drawing.** The use of the lead pencil, pen and ink, or charcoal. The grouping and lighting of models. Also, blackboard and other methods available in nature study and primary work. Daily ex. S., 9–12. Mr. GUTSELL.

B. **History of Art.** Lectures on the development of Art in Painting and Sculpture from the Middle Ages to recent times. The course will include a discussion of the works of some of the more notable masters in each of the great national movements, but with especial attention to the Italian and the Dutch. Illustrated with lantern slides, prints and photographs. Daily except S., 11. Mr. GUTSELL.

C. Special arrangement may be made for work in water colors, pen and ink, or perspective, elementary or advanced, according to the needs of individual students. Should it be called for, work may probably be arranged for out of doors. Daily except S., 9. Mr. GUTSELL.

Those desiring advanced work in Drawing and Art are requested to correspond with Mr. Gutsell.

MECHANICAL DRAWING AND DESIGNING.

A. **Mechanical and Architectural Drawing.** Use of instruments, geometrical problems, orthographic projection, inking and tinting, shading and shade lines, lettering, isometrical drawing, working drawings and conventions. *Sibley, 303.* Mr. J. S. REID.

B. **Elementary Designing.** Problems in machine drawing and designing. Three hours daily except Saturday. *Sibley, 303.* Mr. J. S. REID.

C. **Kinematic Drawing and Machine Design,** including special course in locomotive design. Three hours daily except Saturday. *Sibley, 303.* Mr. J. S. REID.

These courses can be arranged to suit individual needs; they are especially suitable for teachers of manual training.

Course A is designed for beginners or those who desire to obtain a more perfect knowledge of approved methods in modern practice.

In course B the principles, methods, and conventions of course A are applied to the drawing and designing of general machine and engine details and small machines.

Many valuable samples and models of machines and details of machines and engines are used to illustrate the problems in this course.

Course C consists of problems in irregular curves, cams, gears, chamber wheels, chain wheels, linkages and original designing of complete machines and locomotive details.

MECHANIC ARTS.

A. **Shopwork.** Woodworking; use of tools; carpentry; joinery; pattern-making; turning.

B. **Shopwork.** Blacksmithing; use of tools, forging, welding, tool-dressing, etc.

C. **Shopwork.** Foundry work: moulding, casting, mixing metals, brass work, etc.

D. **Shopwork.** Machinist work: use of hand and machine tools; working to form and to gauge; finishing; construction; assemblage; erection.

Each of the above courses, three hours. Daily as assigned, 8–1, 2–5. Messrs, WISEMAN, WOOD, VANDERHOEF, GRANGER.

NATURE-STUDY.

[Because of lack of room, it will be necessary to limit the attendance in Nature Study courses. Names will be registered in the order of application to COLLEGE OF AGRICULTURE, ITHACA, N. Y.]

A course is offered in Nature-study in three departments: (1) Nature-study in insect-life, (2) Nature-study in plant-life, (3) Nature-study on the farm.

This course in Nature-Study is a one-session course. Its purpose is to awaken interest in Nature-Study, and to present the means and materials to be employed in the teaching of nature subjects. Persons who desire advanced instruction will register in the other courses of the summer session, or in other courses in Agriculture in the University.

The course is open to teachers in New York State free of tuition, since the work is supported by a state fund for the extension of agricultural knowledge. *The three subjects comprise a full course, and persons who register for the course are required to devote their whole time to it.* The instruction will consist of lectures, laboratory work, and field excursions. It is the purpose of the course to teach both the facts and the methods of serious Nature-study, with particular reference to fitting teachers to take up the work in their own schools. The vicinity of Ithaca is rich in animal and plant life and in entertaining scenery.

The different subdivisions of the course in Nature-study cannot be taken separately, but the entire course must be taken.

A. **On the Farm.** Two lectures per week, laboratory work and excursions. A study of the Effect of Tillage on Plants and of Food on the Growth of Animals: The Composition and Texture of Soils: The Natural Features of Beauty in Rural Life. M., 9–5, *Morrill Hall.* In charge of Professor ROBERTS.

B. **Insect Life.** Lectures and field work on the habits of insects. Two lectures and one excursion each week. In charge of Professor COMSTOCK.

BB. **Insect Life.** Laboratory work in the methods of nature-study, available for secondary schools. Two days each week excepting time occupied by course B. W., F., 9–5, *White Hall.* Assistant Professor A. B. COMSTOCK.

C. **Plant Life.** Lectures, laboratory work, and excursions, with special attention to the kinds, habits and characteristics of plants as they grow in the fields. T., Th., 9–5, *Morrill Hall.* In charge of Professor BAILEY.

For further information about Nature-Study and for "Teacher's Leaflets on Nature-Study." address COLLEGE OF AGRICULTURE, ITHACA, N. Y.

FELLOWS AND SCHOLARS.

UNIVERSITY FELLOWS.

The Cornell Fellowship,
Charles Bell Burke, B.L., (Vanderbilt Univ.), A.B., (Harvard), *English Literature*

The McGraw Fellowship,
Edward Charles Murphy, B.C.E., M.S., C.E., *Civil Engineering*

The Sage Fellowship,
Charles Edward Brewer, A.M., (Wake Forest), *Chemistry*

The Schuyler Fellowship,
Margaret Clay Ferguson, B.S., *Botany*

The Sibley Fellowship,
Erastus Lovette West, M.E., *Mechanical Engineering*

The Goldwin Smith Fellowship,
Hugh Daniel Reed, B.S., *Vertebrate Zoology*

The President White Fellowship,
Charles Tobias Knipp, A.B., A.M., (Indiana Univ.), *Physics*

The Erastus Brooks Fellowship,
Harry Waldo Kuhn, B.S., (Ohio State Univ.), *Mathematics*

Frank Eurich, Jr., B.Arch., *Architecture*
Albert Stamford, M.E., *Mechanical Engineering*
Chester Murray, Ph.B., *Romance Languages*
George Maxwell Howe, A.B., (Univ. of Indiana), *Germanic Languages*
Carl Warren Gay, D.V.M., *Veterinary Science*
William Benjamin Fites, Ph.B., *Mathematics*

PRESIDENT WHITE FELLOWS IN HISTORY AND POLITICAL SCIENCE.

Lilian Wyckoff Johnson A.B., (University of Michigan).
Ambrose Paré Winston, A.B., (University of Wisconsin).

FELLOWS IN POLITICAL ECONOMY AND FINANCE.

Roswell Cheyney McCrea, A.B., (Haverford College).
Edwin Walter Kemmerer, A.B., (Wesleyan Univ.).

FELLOWS IN LATIN AND GREEK.

Marion Clyde Weir, A.B., (St. John's Coll.), A.M., (Univ. of Chicago).
Donald Alexander McRae, A.B., (Dalhousie College).

FELLOW IN AMERICAN HISTORY.

Walter Henry Ottman, A.B.

SUSAN LINN SAGE FELLOWS IN PHILOSOPHY AND ETHICS.

Boyd Bode, A.B., (Penn. Coll.), A.B., (Univ. of Mich.).
Alexander Wellington Crawford, A.B., A.M., (Toronto Univ.).
Margaret Everitt Schallenberger, A.B., (Stanford Univ.).

FELLOW IN ARCHITECTURE.

William Herbert Dole, B.S. in Arch.

HONORARY FELLOWS.

Wilmot Burkemar Lane, A.B., A.M, (Toronto Univ.), Ph.D., (Univ. of Wisconsin), *Psychology*
Azariah Thomas Lincoln, B.S., M.S., Ph.D., (Univ. of Wisconsin), *Chemistry*
Arthur Percy Saunders, Ph.D., (Johns Hopkins Univ.), *Chemistry*

GRADUATE SCHOLARS IN THE SCHOOL OF PHILOSOPHY.

Lena May Aldrich, A.B., (Mt. Holyoke College).
William Chandler Bagley, B.S., (Mich. Agr. College), M.S., (Univ. of Wisconsin).
Georgia Benedict, A.B., (Wells College).
Roy Victor Nye, B.L., (University of California).
Henry Leroy Taylor, A.B.
Florence McLean Winger, A.B., (University of Nebraska).

UNIVERSITY GRADUATE SCHOLARS.

Leon Wilson Hartman, B.S., A.M., *Physics*
Julia Ramsay Vaulx, A.B., (Univ. of Arkansas), A.M., (Cornell University), *English Philology*

Kenneth Percival Rutherford Neville, A.B., A.M., (Queen's College), A.M., (Harvard), *Greek and Latin*
Roscoe Blake Morton, B.S., *Petrography*
William Atwood Hilton, B.S., *Microscopy, Histology, Embryology*
Eva Woodward Grey, A.B., A.M., *Comparative Philology*
Chester Clay Torrance, C.E., *Civil Engineering*
Benton Dales, B.S., A.M., (Univ. of Nebr.), *Chemistry*
Henry Lewis Rietz, B.S., (Ohio State Univ.), *Mathematics*
Charles Crawford Whinery, B.S., *American History*

UNIVERSITY UNDERGRADUATE SCHOLARS.

SOPHOMORE CLASS.

THE CORNELL SCHOLARSHIPS,

Charles Herman Snyder, *Course in Civil Engineering*
Oswego High School—C. W. Richards, Principal.

Ruth Bentley, *Course in Arts*
Jamestown High School—A. N. Taylor, Principal.

THE H. B. LORD SCHOLARSHIPS,

Clarence Elmer Randall, *Course in Civil Engineering*
Oswego High School—C. W. Richards, Principal.

Sidney Graves Koon, *Course in Electrical Engineering*
Auburn High School—Floyd J. Bartlett, Principal.

THE MCGRAW SCHOLARSHIPS,

Ray Hughes Whitbeck, *Course in Arts*
Geneseo State Normal School—John M. Milne, A.M., Ph.D., Principal.

Kathryn Elizabeth Clare Carrigan, *Course in Arts*
Ithaca High School—F. D. Boynton, A.M., Principal.

THE SAGE SCHOLARSHIP,

Horace Luther Field, *Course in Arts*
Spencer Union School—E. O'Neil, A.B., Principal.

THE SIBLEY SCHOLARSHIPS,

Alan Estis Flowers, *Course in Electrical Engineering*
Privately prepared.

Albert Walton, *Course in Mechanical Engineering*
Lake View High School—James H. Norton, M.A., Principal.

THE PRESIDENT WHITE SCHOLARSHIPS,

Frank Custer Edminster, *Course in Arts*
Brooklyn Boys' High School—John Mickleborough, Ph.D., Principal.

Theodore Eckford Rhoades, *Course in Civil Engineering*
Peddie Institute—J. E. Perry, Ph.D., Principal.

THE HORACE GREELEY SCHOLARSHIPS,

Frances Clare Longnecker, *Course in Arts*
Columbus High School—Mary N. Welch, A.M., Principal.

Ernest Henry Riedel, *Course in Arts*
Brooklyn Boys' High School—John Mickleborough, Ph.D., Principal.

THE JOHN STANTON GOULD SCHOLARSHIPS,

James Aaron Magoffin, *Course in Arts*
North Tonawanda High School—F. J. Beardsley, A.B., Principal.

Isaac Levy, *Course in Arts*
Elmira Free Academy—C. W. Evans, A.M., Principal.

THE STEWART L. WOODFORD SCHOLARSHIPS,

Bertha Louise Alexander, *Course in Arts*
Girls' High School, Brooklyn—Calvin Patterson, B.S., Principal.

Melvin Herbert Coulston, *Course in Arts*
Wellsville High School—L. W. Craig, A.M., Principal.

FRESHMAN CLASS.

THE CORNELL SCHOLARSHIPS,

Walter Augustus Frederick, *Course in Mechanical Engineering*
Wilmington Military Academy—Wm. H. Morrison, B.S., Principal.

Chester Lee Mills, *Course in Arts*
Pike Seminary—Chas. W. Whitney, Pd.B., Ph.M., Principal.

THE H. B. LORD SCHOLARSHIPS,

Harold Frederick Jewett, *Course in Mechanical Engineering*
Hoosick Falls High School—H. H. Snell, Ph.B., Principal.

Herbert Carpenter Shattuck, *Course in Arts*
Ithaca High School—F. D. Boynton, A.M., Principal.

THE MCGRAW SCHOLARSHIPS,

Frederick William Charles Lieder, *Course in Arts*
Manual Training High School, Brooklyn—Charles D. Larkin, Principal.

Ross Gilmore Marvin, *Course in Electrical Engineering*
Elmira Free Academy—Chas. W. Evans, A.M., Principal.

THE SAGE SCHOLARSHIPS,

Irene Belle Van Kleeck, *Course in Arts*
Spencer Union School—E. O'Neill, Ph.B., Principal.

Florence Daisy Lefferts, *Course in Arts*
Gloversville High School—G. M. Davison, A.B., Principal.

THE SIBLEY SCHOLARSHIPS,

William Gordon Allen, *Course in Mechanical Engineering*
Gouverneur High School—John C. Bliss, A.B., Principal.

Ike Baum, *Course in Electrical Engineering*
Kiskimmetas Springs School—Messrs. Wilson and Fair, Principals.

THE PRESIDENT WHITE SCHOLARSHIPS,

John Calder Pearson, *Course in Arts*
Cooperstown High School—W. D. Johnson, Principal.

John Elwood Wentworth, *Course in Arts*
Bridgeton Academy, North Bridgeton, Me. C. C. Spratt, A.B., Principal.

THE HORACE GREELEY SCHOLARSHIPS,

Herbert Darius Augustine Donovan, *Course in Arts*
Franklin Academy, Malone—O. H. Burritt, M.A., Principal.

Lillian Cecilia Dunn, *Course in Arts*
Union Classical Institute—Arthur Marvin, A.M., Principal.

THE JOHN STANTON GOULD SCHOLARSHIPS,

Cornelius Dubois Bloomer, *Course in Mechanical Engineering*
Newburg Academy—James M. Crane, M.A., Principal.

Louise Fargo Brown, *Course in Arts*
Buffalo High School—F. A. Vogt, Principal.

THE STEWART L. WOODFORD SCHOLARSHIPS,

Charles Willard Chapin, *Course in Medicine*
Colgate Academy—F. L. Shepardson, A.M., Principal.

Rollin Kimball Cheney, *Course in Electrical Engineering*
Jamestown High School—A. N. Taylor, Principal

ASSOCIATE ALUMNÆ SCHOLAR.

Anna B Townsend, *Course in Arts*

FRANK WILLIAM PADGHAM SCHOLAR.

— — ————————, *Course in Mechanical Engineering*
Syracuse High School—W. K. Wickes, A.M., Principal.

CATALOGUE OF STUDENTS.

GRADUATES.

Candidates for Advanced Degrees.

* *In absentia.*

Aldrich, Lena Mary, A.B., (*Mt. Holyoke*), 1898, A.M., (*same*), 1899, *E. Douglas, Mass.*
Philosophy, Latin. *Ph.D.*
[Logic and Metaphysics, Psychology, Latin.]

Alexander, Charles Anderson, M.E., 1897, *Ithaca*
Mechanical Engineering, Chemistry. *M.M.E.*
[Experimental Engineering, Analytical Chemistry.]

Allen Frank, A.B., (*Univ. of New Brunswick*), 1895, A.M., (*same*), 1897, *Fredericton, N. B., Canada*
Physics. *A.M.*
[Experimental Physics, Theoretical Physics.]

Anderson, Leroy, B.S., 1896, M.S. in Agr., 1887, *Ithaca*
Agriculture. *Ph,D.*
[Animal Industry, Dairy Husbandry, Breeding.]

Andrews, Arthur Lynn, B.L., 1893, M.L., 1895, *Ithaca*
English. *Ph.D.*
[English Philology.]

Andrews, Eugene Plumb, A.B., 1895, *Ithaca*
Greek, Classical Archæology, Comparative Philology. *Ph.D.*

Austin, Blanche Tudor, B.S., (*Wells Coll.*) 1895, *Cincinnati, O.*
Entomology and Invertebrate Zoology. *A.M.*

Babcock, Clinton Leroy, A.B., 1895, *Boonville*
Latin, Greek, Classical Archæology. *Ph.D.*

Badenhausen, John Phillips, M.E., (*Stevens Institute*) 1896, *Hoboken, N. J.*
Mechanical Engineering. *M.M.E.*
[Marine Engineering, Naval Architecture.]

Bagley, William Chandler, B.S., (*Mich. Agr. Coll.*), 1895, M.S., (*Univ. of Wis.*), 1898, *Detroit, Mich.*
Philosophy, Neurology, Vertebrate Zoology and Physiology. *Ph.D.*
[Psychology, Education, Neurology.]

Baker, William Charles, B.S.A., 1898, *Buffalo*
Horticulture, Botany. *M.S. in Agr.*
[Landscape Gardening, Systematic Botany.]

Barnard, William Nichols, M.E., 1897, *Washington, D.C.*
Mechanical Engineering. *M.M.E.*
[Marine Engineering, Naval Architecture.]

Beal, Alvin Casey, B.S. in Agr., (*Univ. of Illinois*), 1897, *Mt. Vernon, Ill*
Horticulture, Entomology. *M.S. in Agr.*

Beard, Charles Austin, Ph.B., (*DePauw Univ.*), 1898, *Newcastle, Ind.*
History and Political Science. *A.M.*
[English History, American History.]

Beckett, Charles Harrison, B.S., (*Moore's Hill Coll.*), 1896, *Dillsboro, Ind.*
Mathematics, Physics. *A.M.*
[Mathematics, Mathematical Physics]

Benedict, Georgia, A.B., (*Wells Coll.*), 1899, *Ellenville*
Philosophy, History and Political Science. *Ph.D.*
[Moral Philosophy, Logic and Metaphysics, Ancient and Mediæval History.]

Blaker, Ernest, B.S., (*Kansas State Univ.*), 1893, *Kansas City, Kan.*
Physics, Mathematics. *Ph.D.*

Blakeslee, Robert Byron, M.E., 1899, *Coal Glen, Pa.*
Mechanical Engineering. *M.M.E.*
[Mechanical Engineering, Electrical Engineering.]

Bode, Boyd, A.B., (*Univ. of Mich.*), 1897, *Leighton, Ia.*
Philosophy. *Ph.D.*
[History of Religion and Philosophy, Moral Philosophy, Psychology.]

Borden, Garrick Mallory, B.S., 1899, *Tunkhannock, Pa.*
History and Political Science. *A.M.*
[Modern European History, Mediæval History.]

Brewer, Charles Edward, A.M., (*Wake Forest Coll.*), 1886, *Wake Forest, N. C.*
Chemistry. *Ph.D.*
[Organic Chemistry, Inorganic Chemistry, Analytical Chemistry.]

Brooks, Robert Clarkson, A.B., (*Indiana Univ.*), 1896, *Ithaca*
History and Political Science, Philosophy. *Ph.D.*
[Political and Social Science, Political Economy, History of Philosophy.]

Burke, Charles Bell, B.L., (*Vanderbilt Univ.*), 1889, A.B., (*Harvard Univ.*), 1891, *Jackson, Tenn.*
English, Romance Languages, Germanic Languages. *Ph.D.*
[English Literature, French, German.]

Burnett, Samuel Howard, A.B., 1892, M.S., 1896, *Webster*
Veterinary Science, Histology. *Ph.D.*
[Pathology, Bacteriology, Histology.]

Cavanaugh, George Walter, B.S., 1896, *Ithaca*
Chemistry. *Ph.D.*
[Agricultural Chemistry, Organic Chemistry, Analytical Chemistry.]

Clark, Judson Freeman, B.S. in Agr., (*Univ. of Toronto*), 1896, A.M., (*Cornell Univ.*), 1899, *Guelph, Canada*
Botany, Chemistry *Ph.D.*
[Plant Physiology, Mycology, Organic Chemistry.]

Clinton, Louis Adelbert, B.S., (*Mich. Agr. Coll.*), 1889, *Ithaca*
Agriculture, Botany. *Ph.D.*
[Agriculture, Animal Industry, Systematic Botany.]

Colpits, Julia Trueman, A.B., (*Mt. Allison Univ.*), 1899, *Point de Bute, Canada*
Mathematics. *A.M.*
[Mathematics, Applied Mathematics.]

Cowen, Jacob Hoover, B.S., (*Colorado Agr. Coll.*), 1894, B.S.A., (*Cornell Univ.*), 1899, *Hotchkiss, Colo.*
Horticulture, Botany. *A.M.*

Cox, Edward Godfrey, A.B., (*Wabash Coll.*), 1899, *Crawfordsville, Ind.*
English, German. *A.M.*

Crawford, Alexander Wellington, A.B., (*Toronto Univ.*), 1895, A.M., (*same*), 1898, *Galt, Canada*
Philosophy. *Ph.D.*
[Logic and Metaphysics, Moral Philosophy, History and Philosophy of Religion.]

Culver, John Morton, A.B., (*Indiana Univ.*), 1895, *Sharpsville, Ind.*
History and Political Science. *A.M.*
[Modern European History, American History.]

Cushman, Blin Sill, B.S., 1893, *Ithaca*
Chemistry, Geology. *Ph.D.*
[Inorganic Chemistry, Analytical Chemistry, Economic Geology.]

Dales, Benton, B.S., (*Univ. of Nebraska*), 1897, A.M., (*same*), 1899, *Lincoln, Neb.*
Chemistry, Geology. *Ph.D.*
[Inorganic Chemistry, Physical Chemistry, Economic Geology.]

Davis, Kary Cadmus, B.S., (*Kansas Agr. Coll.*), 1891, M.S., (*same*), 1894, *Ithaca*
Horticulture, Botany, Entomology. *Ph.D.*
[Horticulture, Histology of Plants, Entomology.]

Derby, Ira Harris, B.S., (*Harvard Univ.*), 1899, *Lyme Center, N. H.*
Chemistry, Physics. *Ph.D.*
[Physical Chemistry, Inorganic Chemistry, Physics.]

Dole, William Herbert, B.S. in Arch., 1894, *Brooklyn*
Architecture. *M.S. in Arch.*

Dutcher, George Matthew, A.B., 1897, *Owego*
History and Political Science. *Ph.D.*
[Modern European History, American History, History of the Middle Ages.]

Ebersole, Morris Rogers, B.S., (*Univ. Cincinnati*), 1898, *Cincinnati, O.*
Chemistry, Geology. *Ph.D.*
[Organic Chemistry, Physical Chemistry, Mineralogy and Crystallography.]

Edgerton, Charles Eugene, A.B., (*Hamilton Coll.*), 1882, *Ithaca*
History and Political Science. *Ph.D.*
[Political Economy, Social and Political Science, Modern European History.]

Ferguson, Margaret Clay, B.S., 1899, *Seneca Castle*
Botany. *Ph.D.*
[Comparative Morphology and Embryology, Physiology, Mycology.]

Filkins, Claude William, C.E., 1893, M.C.E., 1894, *Ithaca*
Mathematics, Civil Engineering. *Ph.D.*
[Pure Mathematics, Mechanics, Geodesy and Astronomy.]

Fischer, Robert, B.S., (*Ohio State Univ.*), 1898, *Columbus, O.*
Chemistry, Geology. *Ph.D.*
[Organic Chemistry, Inorganic Chemistry, Geology.]

Fite, William Benjamin, Ph.B., 1892, *Marion, O.*
Mathematics, Physics. *Ph.D.*
[Pure Mathematics, Applied Mathematics, Physics.]

Fletcher, Stevenson Whitcomb, B.S., (*Mass. Agr. Coll.*), 1896, M.S. in Agr., (*Cornell Univ.*), 1898, *Middleboro, Mass.*
Horticulture, Botany. *Ph.D.*
[Horticulture, Landscape Gardening, Systematic Botany.]

Gager, Charles Stuart, A.B., (*Syracuse Univ.*), 1895, Pd.M. (*Albany Normal Coll.*), 1897, *Albany*
Botany. *A.M.*
[Comparative Morphology and Embryology, Plant Physiology.]

Gaston, Charles Robert, Ph.B., 1896, *Ithaca*
English, History and Political Science *Ph.D.*
[English Philology, Mediæval History, Rhetoric.]

Gortner, Rose May, B.S., (*Susquehanna Univ.*), 1898, *Selins Grove, Pa.*
English, History and Political Science. *A.M.*
[English Literature, English History.]

Grey, Eva Woodward, A.B., 1898, A.M., 1899, *Brooklyn*
Greek, Classical Archæology, Comparative Philology. *Ph.D.*

Griswold, Hervey DeWitt, A.B., (*Union College*) 1885, *Dryden*
Philosophy, Comparative Philology, Semitic Language. *Ph.D.*
[Logic and Metaphysics, Sanskrit, Hebrew.)

Groat, George Graham, A.B. (*Syracuse Univ.*), 1895, Pd.M., (*State Normal Coll.*), 1897, *Albany*
History and Political Science, Philosophy. *A.M.*
[Political Science, Education.]

Hall, Edith Rockwell, A.B., (*Bryn Mawr*), 1893, *Philadelphia, Pa.*
History and Political Science. *Ph.D.*
[Mediæval History, Modern European History, English History.]

Harlow, Leslie Cleveland, B.S.A., 1899, *Lockport, Canada*
Chemistry. *Ph.D.*
[Organic Chemistry, Inorganic Chemistry, Analytical Chemistry.]

Hartman, Leon Wilson, B.S., 1898, A.M., 1899, *Ithaca*
Physics, Mathematics. *Ph.D.*
[Experimental Physics, Theoretical Physics, Mathematical Physics.]

Hasselbring, Heinrich, B.S.A., 1899, *Flint, Mich.*
Botany, Horticulture, *Ph.D.*
[Mycology, Horticulture, Plant Physiology.]

Hastings, George Tracy, B.S., 1898, *Phoenix*
Botany, Entomology. *Ph.D.*
[Histology of Plants, Entomology, Physiology of Plants.]

*Hayward, Harry, B.S. in Agr., 1894, *State College, Pa.*
Agriculture. *M.S. in Agr.*
[Dairying, Dairy Bacteriology.]

Hilton, William Atwood, B.S., 1899, *Waverly*
Histology, Vertebrate Zoology. *A.M.*

Hotchkiss, Homer James, C.E., (*Allegheny Coll.*), 1888, B.A. (*same*), 1889, M.M.E., (*Cornell Univ.*), 1896, *Ithaca*
Physics, Mechanical Engineering. *Ph.D.*
[Experimental Physics, Theoretical Physics, Applied Electricity.]

Hoverstad, Bertha, B.L., (*Univ. of Minn.*), 1899, *Holden, Minn.*
English, Philosophy. *A.M.*
[English Literature, Logic and Metaphysics.]

Howe, George Maxwell, A.B., (*Univ. of Indiana*), 1894. *Ithaca*
Germanic Languages, English, Romance Languages. *Ph.D.*
[German, Old English, Old French.]

Hoxie, George L, M.E., 1892, M.M.E., 1897, *Ithaca*
Mechanical Engineering, Physics. *Ph.D.*
[Electrical Engineering, Mechanical Engineering, Physics.]

Hunn, Myrta Eleanor, A.B., 1899, *Batavia*
Greek, Latin. *A.M.*

Hunt, Frederick Burton, A.B., (*Bucknell Coll.*), 1896,
Clark's Summit, Pa.
Latin, Greek. *A.M.*

Jones, Clement Ross, B.S. in C.E., (*West Virginia Univ.*), 1894,
M.E., (*same*), 1897, *Morgantown, W. Va.*
Mechanical Engineering. *M.M.E.*
[Mechanical Engineering, Experimental Engineering, Electrical Engineering.]

Johnson, Lilian Wyckoff, A.B., (*Michigan Univ.*), 1891,
Memphis, Tenn.
History and Political Science. *Ph.D.*
[Mediæval History, Modern European History, American History.]

Kellerman, Ivy, A.B., (*Ohio State Univ.*), 1898, A.M., (*Cornell Univ.*), 1899, *Columbus. O.*
Greek, Latin, Comparative Philology. *Ph.D.*

Kemmerer, Edwin Walter, A.B., (*Wesleyan Univ.*), 1899.
History and Political Science. *Ph.D.*
[Economics, Social Science, American History.]

Knipp, Charles Tobias, A.B., (*Indiana Univ.*), 1894, A.M., (*same*), 1896, *Bloomington, Ind.*
Physics, Mathematics. *Ph.D.*
[Experimental Physics, Theoretical Physics, Mathematics.]

Knisely, Abraham Lincoln, B.S., (*Univ. of Mich.*), 1891, M.S., (*same*), 1893, *Geneva*
Chemistry, Horticulture, Agriculture. *D.Sc.*
[Agricultural Chemistry, Horticulture, Agriculture.]

Knowlton, Daniel Chauncey, A.B., 1898, *Ithaca*
History and Political Science. *Ph.D.*
[Modern European History, Mediæval History, American History.]

Knox, Sara Cecelia, A.B., 1899, *Ithaca*
Latin, Italian. *A.M.*

Kochi, Chujiro, B.S., (*Ohio Wesleyan Univ.*), 1896, *Bingo, Japan*
Entomology, Histology, Botany. *Ph.D.*

Kuhn, Harry Waldo, B.S., (*Ohio State Univ.*), 1897, *Etna, O.*
Mathematics. *Ph.D.*
[Pure Mathematics, Applied Mathematics, Astronomy.]

Lauman, George Nieman, B.S.A., 1897, *Allegheny, Pa.*
Horticulture, Agriculture. *A.M.*

Lipman, Jacob Goodale, B.Sc., (*Rutgers Coll.*), 1898,
Woodbine, N. J.
Chemistry, Agriculture. *A.M.*
[Agricultural Chemistry, Dairy Husbandry.]

McCaustland, Elmer James, B.C.E., (*Cornell Coll.*), 1892, C.E., (*same*), 1895, M.C.E., (*Cornell Univ.*), 1897, *Ithaca*
Civil Engineering, Mathematics. *Ph.D.*
[Hydraulics, Mathematics, Mechanics,]

McConnell, Ira Welch, C.E., 1897, *Kansas City, Kan.*
Civil Engineering. *M.C.E.*
[Mechanics and Hydraulics, Railroads.]

McCrea, Roswell Cheney, A.B., (*Haverford Coll.*), 1897,
Norristown, Pa.
History and Political Science. *Ph.D.*
[Economics, Sociology and Statistics, American History.]

McGonegal, Grace Ethelyn, A.B., 1899, *Rochester*
Philosophy, Greek. *A.M.*
[Education, Greek.]

MacKay, Ira, A.B., (*Dalhousie Coll.*), 1897, A.M., (*same*), 1898,
Pictou. N. S., Canada
Philosophy. *Ph.D.*
[Psychology, Logic and Metaphysics, Science and Art of Education.]

McNutt, Elijah Bailey, A.B., 1899,
History and Political Science. *A.M.*
[American History, Political Science.]

MacRae, Donald Alexander, A.B.. (*Dalhousie Coll.*), 1898, A.M., (*Cornell Univ.*), 1899, *Canoe Cove, P. E. I., Canada*
Greek, Latin, Comparative Philology. *Ph.D.*

Magone, Sarah Louise, A.B., (*Wellesley Coll.*), 1889,
Latin, Greek. *A.M.*

Martin, James Otis, B.S.A., 1899, *Ithaca*
Geology. *A.M.*
[Dynamic and Physiographic Geology, Paleontology.]

Mead, Herman Ralph, Ph.B., 1899, *Jamestown*
History and Political Science. *A.M.*
[American History, English History.]

Mercer, William Fairfield, Ph.B., (*Hillsdale Coll.*), 1890, Ph.M., (*same*), 1893, *Randolph*
Entomology and General Invertebrate Zoology, Microscopy, Histology and Embryology. *Ph.D.*
[Entomology, Histology, Insect Morphology.]

Miller, Wilhelm, A.B., (*Univ. of Mich.*), 1892, A.M., (*Cornell Univ.*), 1897, *Detroit, Mich.*
Horticulture, Agriculture. *Ph.D.*

Moffet, Edna Virginia, A.B. (*Vassar Coll.*), 1897, *Richmond, Va.*
History and Political Science. *A.M.*
[Mediæval History, Political Science.]

Monroe, Benton Sullivan, A.B., 1896, A.M., 1897, *Romulus*
English, Comparative Philology. *Ph.D.*
[English Philology, Comparative Philology.]

Moore, Alfred Austin, A.B., (*Hamilton Coll.*), 1890, *Clinton*
Romance Languages, Germanic Languages. *Ph.D.*
[Romance Philology, Middle High German, Spanish.]

Moore, Vida Frank, Ph.B., (*Wesleyan Univ.*), 1893, M.S. (*same*) 1897, *Steuben, Me.*
Philosophy. *Ph.D.*
[Logic and Metaphysics, Moral Philosophy, Psychology.]

Morgan, John Harcourt Alexander, B.S.A., (*Toronto Univ.*), 1889, *Baton Rouge, La.*
Entomology and Invertebrate Zoology. *A.M.*

Morris, Charles Elmer, A.B., (*Indiana Univ.*), 1899, *Salem, Ind.*
English. *A.M.*
[English Philology, Rhetoric.]

Morton, Roscoe Blake, B.S., 1899, *Chicago, Ill.*
Geology, Chemistry. *Ph.D.*
[Petrography, General Geology, Inorganic Chemistry.]

Murphy, Edward Charles, B.C.E., 1884 ,M.S., 1885, *Ithaca*
Civil Engineering, Physics. *Ph.D.*
[Hydraulics, Aerodynamics, Electricity.]

Murray, Chester, Ph.B., 1899, *Tottenville*
Romance Languages, Comparative Philology, Germanic Languages, *Ph.D.*
[French Language and Literature, Comparative Philology, German.]

Murrill, William Alphonso, B.S., (*Vir. Poly. Inst.*), 1887, B.S., (*Randolph Macon Coll.*), 1889, A.B., (*same*), 1890, A.M., (*same*), 1891, *Blacksburg, Va.*
Botany. *Ph.D.*
[Embryology, Histology, Mycology.]

Myers, Burton Dorr, Ph.B.. (*Buchtel Coll.*), 1893, *Attica, O.*
Microscopy, Histology and Embryology, Neurology,
Physiology and Vertebrate Zoology. *A.M.*
[Histology, Neurology.]

Neville, Kenneth Percival Rutherford, A.B., (*Harvard Univ.*), 1898,
A.M., (*same*), 1899, *Newburg, Canada*
Greek, Latin, Comparative Philology. *Ph.D.*

Noé, Frederick, M.E., 1897, *Newburg*
Mechanical Engineering. *M.M.E.*
[Experimental Engineering, Machine Design.]

Nye, Roy Victor, B.L., (*Univ. of California*), 1899,
Los Angeles, Calif.
Philosophy. *A.M.*
[Moral Philosophy, Logic and Metaphysics.]

Ottman, Walter Henry, A.B., 1897, *Elmira*
History and Political Science. *Ph.D.*
[American History, English History, Political Science.]

Pattengill, Ernest Alanson, B.S., (*Iowa State Agr. Coll.*), 1897,
B.S., (*Cornell Univ.*), 1899, *Osage, Ia.*
Mathematics. *A.M.*
[Pure Mathematics.]

Phelps, Mary, B.L., (*Albion, Coll.*), 1896, *Pontiac, Mich.*
English, Philosophy. *A.M.*
[English Literature, Education.]

Rammelkamp, Charles Henry, Ph.B., 1896, *South Orange, N. J.*
History and Political Science. *Ph.D.*
[American History, English History, Political Science.]

Ramsey, Rolla Ray, A.B., (*Indiana Univ.*), 1895, A.M., (*same*),
1898, *Morning Sun, O.*
Physics, Mathematics. *Ph.D.*
[Experimental Physics, Theoretical Physics, Mathematics.]

Reed, Hugh Daniel, B.S., 1899, *Hornellsville*
Vertebrate Zoology, Histology and Embryology, Entomology,
and Invertebrate Zoology. *Ph.D.*

Reed, Raymond Clinton, Ph.B., 1896, *Ithaca*
Veterinary Science. *Ph.D.*
[Bacteriology, Veterinary Medicine, Comparative Physiology.]

Rietz, Henry Lewis, B.S., (*Ohio State Univ.*), 1899, *Gilmore, O.*
Mathematics, Physics. *Ph.D.*
[Pure Mathematics, Applied Mathematics, Physics.]

Riley, William Albert, B.S., (*DePauw*), 1897, *Greencastle, Ind.*
Entomology and General Invertebrate Zoology, Botany. *Ph.D.*
[Insect Histology, Botany (Mycology), Insect Embryology.]

Rogers, Frederick John, B.S., (*Kansas Agr. Coll.*), 1885, M.S., (*Cornell Univ.*), 1891, *Ithaca*
Physics, Chemistry, Mathematics. *Ph.D.*
[Physics, Physical Chemistry, Mathematics.]

Ross, Hedley Vicars, A.B., (*Dalhousie Coll.*), 1893, A.M., (*same*) 1895, A.B., (*Harvard Univ.*), 1895,
Stanley Bridge, P.E.I., Canada
English, History and Political Science, Greek. *Ph.D.*
[English Literature, Ancient and Mediæval History, Greek.]

Schallenberger, Margaret Everitt, (*Stanford Univ.*), 1898,
San José, Cal.
Philosophy, Microscopy, Histology and Embryology. *Ph.D.*
[Psychology, History of Philosophy, Histology.]
Committee: Titchener, Creighton, Hammond, Gage, Kingsbury.

Scheffer, Theophillus H., A.B., (*Kansas State Univ.*), 1895,
Delphos, Kan.
Entomology, Botany. *A.M.*

Seaton, Frances, A.B., (*Wellesley Coll.*), 1888,
Entomology and General Invertebrate Zoology. *A.M.*

Shearer, John Sanford, B.S., 1893, *Ithaca*
Physics, Mathematics. *Ph.D.*

Sheldon, Seth L, B.S.A., 1898, *Ithaca*
Chemistry, Physics. *M.S. in Agr.*
[Agricultural Chemistry, Experimental Physics.]

Shepard, George Hugh, (*U. S. Naval Academy*), 1891, *Ithaca*
Mechanical Engineering. *M.M.E.*
[Machine Design, Electrical Engineering.]

Simpson, Charles Baird, B.S., (*Univ. of Idaho*), 1898, B.S., (*Cornell Univ.*), 1899, *Moscow, Idaho*
Economic Entomology, Histology and Embryology. *A.M.*

Smith, Edmund Sewall, B.S., 1899, *Buffalo*
Chemistry, Geology. *Ph.D.*
[Inorganic Chemistry, Analytical Chemistry, Mineralogy and Crystallography.]

Smith, George Armstrong, B.S. in Agr., (*Toronto Univ.*), 1896,
Morrisburg, Ont., Can.
Chemistry, Geology. *Ph.D.*
[Inorganic Chemistry, Agricultural Chemistry, Economic Geology.]

Smith, George Gates, Jr., C.E., 1898, M.C.E., 1899, *Flint*
Civil Engineering. *Ph.D.*
[Bridge Engineering, Railroad Engineering, Mechanics.]

Stamford, Albert, M.E., 1899, *Grand View*
Mechanical Engineering. *M.M.E.*
[Marine Engineering, Naval Architecture.]

Stewart, George Walter, A.B., (*DePauw*), 1898, *Kansas City, Mo.*
Physics, Mathematics. *Ph.D.*
[Experimental Physics, Theoretical Physics, Physical Mathematics.]

Taylor, Harry Leroy, A.B., 1898, *Hamburg*
Philosophy, History and Political Science. *Ph.D.*
[Philosophy of Religion and History of Philosophy, Moral Philosophy, Mediæval History.]

Teeple, John Edgar, B.S., 1899, *Ithaca*
Chemistry, Mathematics. *Ph.D.*
[Organic Chemistry, Inorganic Chemistry, Mathematics.]

Torrance, Chester, C.E., 1899, *Gowanda*
Civil Engineering. *M.C.E.*
[Hydraulics, Sanitary Engineering, Advanced Astronomy.]

*Towl, Forest Milton, C.E., 1886, *Brooklyn*
Civil Engineering. *M.C.E.*
[Hydraulics and Pneumatics, Hydraulic Machinery.]

Vaulx, Julia Ramsey, A.B., (*Univ. of Arkansas*), 1897, A.M., (*Cornell Univ.*), 1897, *Fayetteville, Ark.*
English, Germanic Languages. *Ph.D.*
[English Philology, Rhetoric, German.]

Viles, George Burridge, A.B., (*Harvard*), 1892, A.M., (*same*), 1896, *Lowell. Mass.*
Germanic Languages, Romance Languages. *Ph.D.*
[German, French, Italian.]

West, Erastus Lovette, M.E., 1899, *Lakeville*
Mechanical Engineering. *M.M.E.*
[Electrical Engineering, Experimental Engineering.]

Weston, Nathan Austen, B.L., (*Univ. of Illinois*), 1889, M.L., (*same*), 1898, *Champaign, Ill.*
History and Political Science. *Ph.D.*
[Political Economy, Political Science, American History.]

Whinery, Charles Crawford, B.S., 1899, *East Orange, N. J.*
History and Political Science. *A.M.*
[American History, Political Science.]

Whipple, Guy Montrose, A.B., (*Brown Univ.*), 1897, *Danvers. Mass.*
Philosophy, Neurology. *Ph.D.*
[Psychology, Neurology, Education.]

Wier, Marion Clyde, A.B., (*St. Johns*), 1892, A.M., (*same*), 1894, A.M., (*Univ. of Chicago*), 1897, *Bunker Hill, Ill.*
Greek, Latin, Comparative Philology. *Ph.D.*

Wilson, Norman Richard, A.B., (*Toronto Univ.*), 1899, *Cobourg, Canada*
Mathematics, Physics. *Ph.D.*
[Pure Mathematics, Applied Mathematics, Physics.]

Winger, Florence MacLean, A.B., (*Univ. of Nebraska*), 1895, A.M., (*same*), 1898, *Ithaca*
Philosophy. *Ph.D.*
[Psychology, Ethics, Education.]

Winston, Ambrose Paré, A.B., (*Univ. of Wisc.*), 1887, *Chicago, Ill.*
History and Political Science. *Ph.D.*
[Political Economy, Political Science, Modern European History.]

Woodbury, George Foster, A.B., (*Colgate Univ.*), 1890, *Enfield Centre*
History and Political Science, Semitic Languages. *Ph.D.*
[Mediæval History, Modern European History, Oriental History.]

Wright, Henry Wilkes, Ph.B., 1899, *Harbor Springs, Mich.*
Philosophy. *Ph.D.*
[History of Philosophy, Ethics, Psychology.]

Graduate Students not in Residence for 1899—1900.

Ashe, William Willard, B.L., (*Univ. of N. Carolina*), 1891, M.S., (*Cornell Univ.*), 1892. *Raleigh, N. C.*
Botany, Geology. *Ph.D.*
[Botany, (Comparative Morphology and Embryology), Geology, Systematic Botany.]

Ellery, Eloise, A.B., (*Vassar Coll.*), 1897, *Wellesley, Mass.*
History and Political Science. *Ph.D.*
[Modern European History, American History, English History.]

Fleming, Sophy Phillippa, A.B., 1874, *Ithaca*
Romance Languages, Germanic Languages. *Ph.D.*

Martin, Gertrude Shorb, Ph.B., (*Univ. of Mich.*), 1894, *Ithaca*
History and Political Science, Philosophy. *Ph.D.*
[Social Science, Politics, Ethics.]

Maury, Carlotta Joaquina, Ph.B., 1896, *Cambridge, Mass.*
Geology, Philosophy. *Ph.D.*
[Conchology, Palaeontology, History of Philosophy.]

Nichols, Susie Percival, B.S., 1898, *Phippsburg, Me.*
Botany, Entomology and General Invertebrate Zoology. *Ph.D.*
[Botany (Embryology), Systematic Botany, Entomology.]

Orvis, Julia Swift, A.B., (*Vassar Coll.*), 1895, *Dixon, Ill.*
History and Political Science. *Ph.D.*
[Modern European History, American History, English History.]

Powell, Benjamin, A.B., 1896, A.M., 1898, *Seneca Falls*
Greek, Latin, Archæology. *Ph.D.*

Prosser, Charles Smith, B.S., 1883, M.S., 1886, *Columbus, O.*
Geology, Invertebrate Zoology. *Ph.D.*
[Stratigraphic Geology, Paleontology, Invertebrate Zoology.]

Spinney, Louis Bevier, B.M.E., (*Iowa Agr. Coll.*), 1892, B.S., (*same*), 1893, *Ames, Ia.*
Physics, Mathematics. *D.Sc.*
[Experimental Physics, Mathematical Physics, Mathematics.]

Stewart, Fred Carlton, B.S., (*Iowa Agr. Coll.*), 1892, M.S., (*same*), 1894, *Geneva*
Botany. *Ph.D.*
[Mycology, Physiology of Plants, Histology of Plants.]

White, Georgia Laura, Ph.B., 1896, *Ithaca*
History and Political Science. *Ph.D.*
[Political Science, Social Science, Modern European History.]

Not Candidates for Degrees.

Benton, Harmon, B.S., (*A. & M. College of Alabama*), 1891, M.Sc., (*same*), 1892, *Uniontown. Ala.*
Horticulture, Botany, Entomology.

Carss, Elizabeth, Ph.B., 1895, *New York City*
Entomology.

Claypole, Agnes Mary, Ph.B., (*Buchtel Coll.*), 1892, M.S., *Cornell Univ.*), 1894, Ph.D., (*Chicago Univ.*), 1896, *Akron, O.*
Histology.

Cordley, Arthur Burton, B.S., (*Mich. Agr. Coll.*), 1888, *Cornwallis, Ore.*
Botany.

Eurich, Frank, Jr., B.Arch., 1899, *Detroit, Mich.*
Architecture.

Fassett, Harvey Learn, Ph.B., (*Bucknell Univ.*), 1894, *Scottville, Pa.*
Chemistry, Mathematics.

Hines, Linnaeus, A.B., (*Indiana Univ.*), 1894, *Evansville. Ind.*
Romance Languages, History and Political Science, Mathematics, English.

Hopkins, Millicent Beecher, B.S., 1899, *Stone Church*
Entomology.

Mann, Warren, A.B., (*Syracuse Univ.*), 1872, A.M., (*same*), 1875, *Potsdam*
Entomology.

Middleton, Arthur Renwick, A.B., (*Univ. of Rochester*), 1891, *Ithaca*
Chemistry, Mineralogy, Physics.

Robert, Albert William, Ph.B., (*Yale Univ.*), 1883. *Ithaca*
Architecture.
Scheffer, Theophilus H, B.S., (*Kansas State Univ.*), 1895, *Minneapolis, Kan.*
Entomology.
Walbridge, George, C.E., (*Lafayette Coll.*), 1898, *Colorado Springs, Colo.*
Chemistry, Geology, Mechanical Engineering.

Honorary Fellows.

Lane, Wilmot Burkemar, A.B., (*Toronto Univ.*), 1893, A.M., (*same*), 1894, Ph.D., (*Univ. of Wisc.*), 1898, *Napanee, Ont., Canada*
Psychology.
Lincoln, Azariah Thomas, B.S., (*Wisconsin Univ.*), 1894, M.S., (*same*), 1898, Ph.D., (*same*), 1899, *Mountfort, Wisc.*
Chemistry.
Saunders, Arthur Percy, Ph.D., (*Johns Hopkins Univ.*), 1894 *Experimental Farm, Canada*
Chemistry.

Graduate in the New York State Veterinary College.

Gay, Carl Warren, D.V.M., 1899. *Ithaca*

Graduate Students in Undergraduate Courses.

Abbott, John, M.E., (*Univ. of Alabama*), 1893, *E.E.*
Adams, George Edward, B.S. Agr., (*R. I. Agr. Coll.*), 1894, *Special*
Ambler, William, Ph.B., (*Hillsdale Coll.*), 1896, B.S., (*Case School*), 1896, *E.E.*
Ambos, Charles Ludwig, Ph.G., (*N. Y. Coll. of Pharmacy*), 1893, *M.D.*
Andrews, Charles Bradley, A.B., (*Princeton Univ.*), 1898, *M.E.*
Andrews, Frank Hiscock, D.V.M., (*Univ. of Penn.*), 1894, *D.V.M.*
Atwood, Edward Snow, Ph.B., (*Rochester Univ.*), 1899, *M.E.*
Barker, John Hammond, B.S., 1899, *LL.B.*
Bartlett, Robert Lauder, M.D., (*Tufts Med. Coll.*), 1897, *Special*
Beach, George Cameron, B.L., (*Hobart Coll.*), 1898, *LL.B.*
Bowen, Willis Elliott, Ph.G., (*Phila. Coll. of Pharmacy*), 1894, *M.D.*
Brecht, Frederick William, Ph.G., (*New York Coll. of Phar.*), 1898, *M.D.*
Brunor, Emile, Ph.G., (*Brooklyn Coll. of Pharmacy*), 1897, *M.D.*
Buck, Guerdon Conde, B.S., (*Univ. of Wis.*), 1896, *M.D.*

Bunnell, George Lincoln, Ph.B., (*Yale Univ.*), 1896, *M.D.*
Burnett, Samuel Howard, A.B., 1892, M.S., 1896, *D.V.M.*
Bushnell, Fred Forbes, B.Agr., (*Storrs Agr. Coll.*), 1897, *D.V.M.*
Bushnell, Horace Carlton, A.B., (*Carleton Coll.*), 1897, *M.E.*
Bushong, Jacob, B.E., (*West Chester State Normal*), 1895, *M.E.*
Callahan, Dennis George, A.B., (*Manhattan Coll.*), 1897, *M.D.*
Cavaguaro, John Joseph, B.S., (*Coll. of City of N. Y.*), 1898, *M.E.*
Clark, Albert Harvey, Ph.B., 1898, *LL.B.*
Clark, Frank Durborn, B.S., (*Univ. of Rochester*), 1895, *E.E.*
Clark, William Alexander Graham, B.S., (*N. C. Agr. and Mech.*), 1897, M.E., (*same*), 1899, *M.E.*
Claypole, Agnes Mary, Ph.B., (*Buchtel Coll.*), 1892, M.S., (*Cornell*), 1894, Ph.D., (*Chicago Univ.*), 1896, *M.D.*
Claypole, Edith Jane, Ph.B., (*Buchtel Coll.*), 1892, M.S., (*Cornell Univ.*), 1893, *M.D.*
Cohen, Rose, M.E., (*Bloomsburg Normal*), 1885, B.E., (*same*), 1897, *M.D.*
Cohoon, Anson Elikem, B.S., (*A. & M. Coll. of N. Carolina*), 1898, *Special*
Colton, Gordon Weir, B.S., (*Brooklyn Poly. Inst.*), 1898, *M.E.*
Cook, William Leigh, C.E., (*Princeton Univ.*), 1898, *E.E.*
Corrigan, George Francis, M.D., (*Marion Lines*), 1899, *M.D.*
Corrigan, John W, V.S., (*Ontario Vet. Coll.*), 1899, *D.V.M.*
Curran, Hugh McCollum, B.S., (*N. C. College*), 1898, *Special*
Dargan, Samuel S., A.B., (*Cloflin Univ. S. C.*), 1895, *Arts*
Dearborn, Richard Harold, A.B., (*Portland Univ.*), 1895, *E.E.*
DeGarmo, Walter Charles, B.S. in C.E., (*Swarthmore Coll.*), 1897, *B.Arch.*
Dennis, Helen, A.B., (*Wellesley Coll.*), 1895, *M.D.*
Dolan, Paul, A.B., (*Fordham Coll.*), 1899, *M.D.*
Donaldson, Clara Rosella, M.S., (*Ohio Normal Univ.*), 1889, *Special*
Doughty, Phebe Van Vlack, A.B., (*Vassar*), 1895, Pd.B., (*State Normal College*), 1898, *M.D.*
Druskin, Samuel Jerome, B.S., 1898, *M.D.*
Dunning, Emily, B.S., 1897, *M.D.*
Earle, Samuel Broadus, B.A., (*Furman Univ.*), 1898, M.A., (*same*), 1899, *E.E.*
Edlich, Theodore Julius, Ph.G., (*N. Y. Coll. of Pharmacy*), 1893, *M.D.*
Edwards, Franklyn Ellsworth, M.D., (*Univ. of Buffalo*), 1893, *Special*
Ely, Harold Franklin, B.S., [M.E.], (*Purdue Univ.*), 1899, *M.E.*
Evans, Newton Gurdon, B.S., (*Union Coll. Lincoln, Nebr.*), 1895, *M.D.*

Everett, Frederick, B.S., 1899, *M.D.*
Everett, George Abram, A.B., 1899, *LL.B.*
Fenner, Robert Coyner, B.S., (*Phila. Cent. H. S.*), 1899, *M.E.*
Fincke, Harry Stark, Ph.G., (*N. Y. Coll. of Pharmacy*), 1899, *M.D.*
Fischer, Henry John, Ph.G., (*N. Y. Coll. of Pharmacy*), 1892, *M.D.*
Flint, Clinton Medbury, A.B., (*Univ. of Rochester*), 1898, *LL.B.*
Follmer, William Wilcox, B.S., (*Dickinson Sem.*), 1897, *M.E.*
Fowler, John Scott, B.S., (*Phila. Cent. H. S.*), 1899, *M.E.*
Garcia, Fabian, B.S., (*New Mexico Agr. Coll.*), 1894, *Special*
Gillies, Charles Holmes, M.D., (*Phila. Medico Chi*), 1899, *M.D.*
Gilmore, Harry Wilson, Ph.B., (*Penn. Coll.*), 1894, *C.E.*
Gilmour, Matthew, Jr., A.B., (*Hampden-Sidney*), 1898, *E.E.*
Gorton, James Treat, B.S., (*New York Univ.*), 1898, *M.D.*
Gundacker, Henry John, A.B., (*Trinity Coll.*), 1897, *M.D.*
Haas, Magnus Sigmund, A.B., (*Univ. of Georgia*), 1899, *M.E.*
Hankinson, Thomas Leroy, B.S., (*Mich. Agr. Coll.*), 1898, *B.S.*
Hardy, Carl Earnest, B.S. in E.E., (*Va. Poly. Inst.*), 1897, *M.E.*
Hawley, Charles Crane, Ph.B., (*Hamilton Coll.*), 1899, *LL.B.*
Hay, Walter Wing, A.B., 1899, *LL.B.*
Hess, Ralph Jones, B.S., 1896, *M.D.*
Hicks, Shirley Nathaniel Combs, B.S., 1899, *M.D.*
Hildreth, Edward Raymond, A.B., 1898, *M.D.*
Hilpert, Mercir George, B.S., (*Iowa State Univ.*), 1898, *C.E.*
Hopkins, Grant Sherman, B.S., 1887, D.Sc., 1890, *D.V.M.*
Houston, Levin James, Jr., A.B., (*Maryland Agr. Coll.*), 1898, *C.E.*
Hueston, Jessie Elliott, B.S., (*Nat. Normal Univ.*), 1883, *Special*
Hunter, John Alexander, B.S., (*Centre Coll.*), 1896, *E.E.*
Hunting, Irving Adelbert, B.S., (*Alfred Univ.*), 1894, *M.E.*
Janney, Walter Thompson, A.B., (*Phila. Central H. S.*), 1898, *M.E.*
Johnston, Harold Eddy, A.B., (*Williams Coll.*), 1899, *E.E.*
Joiner, Mortimore Eugene, A.B., (*Bates Coll.*), 1893, *LL.B.*
Kingsbury, Benjamin Freeman, A.B., (*Buchtel*), 1893, M.S., (*Cornell*) 1894, Ph.D., (*Cornell*), 1895, *M.D.*
Kingston, Augustine Thomas Vincent, A.B., (*Fordham Coll.*), 1898, *M.D.*
Kyle, Edwin Jackson, B.S.A., (*Texas Agr. Coll.*), 1899, *B.S.A.*
Landsman, Arthur Armin, Ph.G., (*N. Y. Coll. of Pharmacy*), 1896, *M.D.*
Lee, Herbert Blanchard, A.B., 1899, *LL.B.*
Licht, Louis Frederick, Ph.G., (*Brooklyn Coll. of Phar.*), 1898, *M.D.*
Lippman, Thomas Charles, Ph.G., (*New York Coll. of Phar.*), 1898, *M.D.*

Lock, Elizabeth, A.B., (*Union College*), 1895, *A.B.*
Lowell, Mary Chandler, M.D., (*Physicians and Surgeons, Boston*), 1886, *LL.B.*
McCracken, George Lewis, M.E., (*West Chester Normal*), 1896, B.P. (*same*), 1899, *Special*
McCracken, Mary, B.E., (*West Chester Normal*), 1894, M.E., (*same*), 1896, *Special*
MacDonald, Robert Stevenson, Ph.B., 1899, *M.D.*
McKee, John Warren, B.S., (*Northern Indiana Normal*), 1898, B.P., (*same*), 1899, *A.B.*
McLaughlin, Grant Brown, A.B., (*Phila. Central H. S.*), 1895, *C.E.*
McLean, John Howell, Jr., A.B., M.D., (*Southwestern Presb. Univ.*), 1896, 1899, *M.D.*
MacMillan, Mary, A.B., (*Gale Coll.*), 1895, *M.D.*
Magill, William Henry, Ph.B., (*Brown Univ.*), 1893, *M.D.*
Martin, James Francis, A.B., (*St. Frances Xavier*), 1894, *M.D.*
Mayer, Ethel, A.B., (*New York Normal Coll.*), 1896, *M.D.*
Miltimore, Dean, B.S., 1899, *M.D.*
Mislig, Michael, Ph.G., (*Moscow Univ.*), 1898, *M.D.*
Mix, Charles Melvin, A.B., 1898, *D.V.M.*
Morrison, Clarke John, Phar.D., (*National College Phar.*), 1897, *E.E.*
Moses, Chester Davis, M.E., 1897, *M.D.*
Mueller, George Henry, B.S. in M.E., (*Purdue Univ.*), 1899, *M.E.*
Mulford, Walter, B.S.A., 1899, *B.S.F.*
Mulholland, Joseph Augustus, A.B., (*Fordham Coll.*), 1897, *M.D.*
Myers, Burton Dorr, Ph.B., (*Buchtel*), 1897, *M.D.*
Needham, George Gordon, A.M., (*N. Y. City Coll.*), 1862, M.D., (*Bellevue Med. Coll.*), 1865, Ph.G., (*N. Y. Coll. of Pharmacy*), 1881, *Special*
Neely, Robert Johnson, B.S. in M.E., (*Va. Poly. Inst.*), 1899, *E.E.*
Payne, William Johnston, A.M., (*Georgetown Coll.*), 1897, *E.E.*
Pearson, Henry, B.S., (*Univ. of Alabama*), 1899, *M.D.*
Peck, Harrie Waterman, Ph.B., (*Yale Univ.*), 1897, *M.E.*
Pharr, Eugene Albertus, A.B., (*Centenary Coll.*), 1895, *M.E.*
Philbrick, Alan Edgar, Ph.B., (*Yale Univ.*), 1898, *E.E.*
Pierson, Farrand Baker, A.B., (*Princeton Univ.*), 1897, *M.D.*
Putnam, Russell Benjamin, B.S., (*Centenary Coll.*), 1894, *M.E.*
Raphaelson, Samuel Joshua, B.S., (*Coll. of City of N. Y.*), 1899, *M.D.*
Reaves, Samuel Watson, S.B., (*Univ. of North Carolina*), 1899, *A.B.*
Riedel, Arthur Emil, E.M., (*Columbia Univ.*), 1896, *Special*
Rodriguez, Dámaso, B.C.E., (*Texas Agr. and Mech. Coll.*), 1896, *C.E.*

Rommell, Arthur Evan, B.S., (*Iowa Wesleyan*), 1898, *C.E.*
Roos, Oscar Christian, B.S., (*Coll. of City of New York*), 1899, *E.E.*
Schaefer, Louis, Ph.G., (*N. Y. Coll. of Pharmacy*), 1898, *M.D.*
Seymour, Nan Gilbert, A.B., 1897, *M.D.*
Shanley, William Francis, A.B., (*St. Bonaventure's Coll.*), 1898, *M.D.*
Simonds, Mary Edith, A.B., (*Wellesley Coll.*), 1897, *M.D.*
Smith, Marion de Kalb, Jr., A.B., (*Washington Coll.*), 1898, *C.E.*
Smith, William Hereford, B.S., (*Centre Coll.*), 1897, *M.D.*
Stegner, Clifford Melton, B.S., (*Univ. of Cincinnati*), 1899, *C.E.*
Stephens, Albert Woodward, A.B., (*Bucknell Coll.*), 1896, *B.S.A.*
Stevens, Walter Campbell, LL.B., 1899, *B.S.*
Stroud, Bert Brenette, B.S., 1891, D.Sci., 1895, *M.D.*
Taylor, Royden Johnston, B.E., (*Indiana Pa. Normal*), 1896, *C.E.*
Thompson, Henry Elliott, M.D., (*Iowa State Normal*), 1896, *M.E.*
Thorne, Victor Corse, Ph.B., (*Yale Univ.*), 1894, LL.B., (*Columbia Univ.*), 1899, *M.D.*
Tracy, James Grant, Ph.B., 1898, *LL.B.*
Udall, Dennie Hammond, B.S.A., (*Univ. of Vermont*), 1898, *D.V.M.*
Vauclain, Samuel Matthews, B.S., (*Phil. Cent. H. S.*), 1898, *M.E.*
Von Sholly, Anne Irene, A.B., (*Barnard Coll.*), 1898, *M.D.*
Ward, Archibald Robinson, B.S.A., 1898, *D.V.M.*
Waterman, Paul Harrison, A.B., (*Williams Coll.*), 1898, *M.D.*
Weiss, Julius, B.S., 1899, *M.D.*
Wheelwright, Joseph Storer, A.B., (*Yale Univ.*), 1897, *M.D.*
Wilder, Edward Lyman, A.B., (*Williams Coll.*), 1899, *E.E.*
Wilson, Jessie Campbell, B.E., (*Bloomsburg Pa. Normal*), 1896, *A.B.*
Wilson, Willets, Ph.G., (*Phil. Coll. of Pharmacy*), 1895, *M.D.*
Wright, Floyd Robins, A.B., 1898, *M.D.*
Yeomans, Frank Clark, A.B., (*Yale Univ.*), 1897, *M.D.*
Zeiner. Eugene Jerome, Ph.G., (*New York Coll. of Phar.*), 1896, *M.D.*
Zon, Raphael, B.S., B.A., (*Classical Gym. at Simbirsk*), 1892, *B.S.F.*
Zucker, Morris, Ph.G., (*New York Coll. of Phar.*), 1897, *M.D.*

UNDERGRADUATES.

The figures 1, 2, 3, 4, indicate Freshman, Sophomore, Junior, and Senior years, respectively, in the four year courses. In the three year course in Medicine, Sr. indicates Senior. In the three year course in Law, 1, Jr., and Sr., indicates first year, Junior, and Senior respectively. In the three year course in Veterinary Medicine, 1, 2, and 3, indicate first, second, and third year, respectively. Special Students are not classified by years.

Abbott, John, M.E.,	*Okolona, Miss.*,	2 Elect. Eng.
Abbey, Frank Humphrey,	*Watkins*,	2 Mech. Eng.
Abel, Samuel,	*New York City*,	1 Medical
Ackerman, Fred Lee,	*Edmeston*,	3 Architecture
Ackerman, Ira Jason,	*Brooklyn*,	3 Arts
Adams, Arthur,	*Utica*,	3 Civil Eng.
Adams, Francis Spearman,	*Sharon, Pa.*,	1 Mech. Eng.
Adams, George Edward, B.S. Agr.,	*Peace Dale, R. I.*,	Sp. Agriculture
Adams, James Sartelle,	*Harford, Pa.*,	4 Arts
Adams, Thomas Dickinson,	*New York City*,	1 Arts
Adamspoulous, Adam,	*Smyrna, Turkey in Asia*,	1 Agriculture
Adler, Marion Samuel,	*New York City*,	3 Medical
Affeld, William Charles,	*Chicago, Ill.*,	2 Civil Eng.
Aitken, Elizabeth Mary Anderson,	*Woodstock, Vt.*,	1 Arts
Albert, Calvin Dodge,	*Freeland, Pa.*	2 Mech. Eng.
Albertson, Henry Haines,	*Lansdowne, Pa.*	Sp. Agriculture
Albright, Johnson Stanley,	*Ontario*,	3 Arts
Alexander, Bertha Louise,	*Brooklyn*,	2 Arts
Alexander, Durand Charles, Jr.,	*Ithaca*,	3 Arts
Alexander, Edward Renick,	*Canton, O.*,	3 Mech. Eng.
Alexander, Elizabeth Walton,	*Ithaca*,	Special Arts
Alexander, Robert Leon,	*Springfield, O.*,	4 Mech. Eng.
Allan, Edwin Phipps,	*New York City*,	1 Mech. Eng.
Allen, Edward Bingham,	*Cleveland, O.*,	3 Arts
Allen, Fredonia,	*Indianapolis, Ind.*,	4 Arts
Allen, Louis Edward,	*Auburn*,	Jr. Law
Allen, William Gordon,	*Gouverneur*,	1 Mech. Eng.
Allison, Isaac, Jr.,	*Canisteo*,	1 Law
Almy, Mabel Clare,	*Ithaca*,	4 Philosophy
Altschul, Jehuda Hillet,	*New York City*,	1 Medical

Ambler, William, Ph.B., B.S.,	*Cleveland, O.,*	4 Elect. Eng.
Ambos, Carl Ludwig, Ph.G.,	*New York City,*	Sr. Medical
Amster, Julius Louis,	*New York City,*	2 Medical
Anderson, Mary Eliza,	*Plattsburg,*	4 Philosophy
Andrews, Benjamin Richard,	*Seneca Falls,*	3 Arts
Andrews, Charles Bradley, A.B.,	*Zanesville, O.,*	2 Mech. Eng.
Andrews, Ethel Montgomery,	*Brooklyn,*	4 Science
Andrews, Frank Hiscock, D.V.M.,	*Syracuse,*	3 Veterinary
Andrews, Neil Willis,	*Salamanca,*	Jr. Law
Andrews, William Thomas,	*Buffalo,*	1 Arts
Angell, Nina,	*Ithaca,*	4 Arts
Applegate, Thomas Dayton,	*South Bend, Ind.,*	1 Elect. Eng.
Armstrong, Alexander Floyd,	*Ilion,*	3 Civil Eng.
Armstrong, Arthur Soper,	*Rome,*	2 Arts
Ashby, Chester,	*Troy,*	3 Mech. Eng.
Ashcraft, Alan Emerson,	*Chicago, Ill.,*	1 Mech. Eng.
Asserson, Mary Alice,	*New York City,*	3 Medical
Atherton, Herbert Parkhurst,	*Holyoke, Mass.*	1 Architecture
Atwater, Henry Harrison, Jr.,	*Brooklyn,*	2 Medical
Atwater, Leslie Starr,	*Ithaca,*	1 Civil Eng.
Atwood, Charles Cassels,	*Brooklyn,*	3 Mech. Eng.
Atwood, Edward Snow, Ph.B.,	*Rochester,*	2 Mech. Eng.
Austin, George Arthur,	*Buffalo,*	1 Arts
Austin, Harry Burnside,	*Glens Falls,*	Sr. Law
Averill, Earl Amos,	*Adams,*	2 Mech. Eng.
Ayers, Augustine Ridenour,	*Toledo, O.,*	4 Elect. Eng.
Babcock, Charles Walter,	*Ithaca,*	Sr. Law
Backus, Harold Simeon,	*Andover, Conn.,*	1 Medical
Badger, Henry Franklin, Jr.,	*Kalamazoo, Mich.*	1 Civil Eng.
Bailey, Frederick William,	*Mechanicsville,*	3 Mech. Eng.
Bailey, Harold Capron,	*Buffalo,*	1 Medical
Bailey, John Dwight,	*Dansville,*	4 Civil Eng.
Bailey, Margaret Lewis,	*Wellsboro, Pa.,*	3 Arts
Bailey, Orrin,	*Manasquan, N.J.,*	Sp. Mech. Eng.
Bailey, Percival Dee,	*Binghamton,*	2 Medical
Bailey, Viola Jane,	*Carolina, R. I.,*	Sr. Medical
Baker, Frank Sutherland,	*Rome,*	4 Arts
Baker, Julius Fred,	*Oswego,*	4 Elect. Eng.
Baker, Theodore, Jr.,	*Mt. Vernon,*	Special Agriculture
Baker, William Hogg,	*Philadelphia, Pa.,*	2 Mech. Eng.
Bakewell, Joseph Hunter,	*Pittsburg, Pa.,*	1 Mech. Eng.
Baldwin, Alice Mary,	*East Orange, N. J.,*	4 Arts

Baldwin, Jane North,	*Saranac Lake*,	4 Medical
Baldwin Janette,	*Bethel, Conn.*,	3 Medical
Baldwin, Leroy Kingsley,	*Glens Falls*,	1 Civil Eng.
Baldwin, Sarah Lilian,	*East Orange, N. J.*,	2 Arts
Ball, Albert,	*Forestville*,	3 Arts
Ballinger, Philippe Fazio,	*Washington, D. C.*,	1 Elect. Eng.
Banker, Ernest Ensign,	*Ft. Edwards*,	1 Medical
Barker, Anna Laura,	*Clayton*,	4 Arts
Barker, Emma Nellie,	*Verona*,	2 Arts
Barker, John Hammond, B.S.,	*Crown Point*,	Jr. Law
Barlow, Floyd Schoonmaker,	*South Onondaga*,	Sp. Agriculture
Barnes, Clarence Lyon,	*Lockport*,	3 Veterinary
Barnes, Ida Bertha,	*New York City*,	3 Medical
Barnum, Charles Treadway,	*WilkesBarre, Pa.*,	1 Mech. Eng.
Barry, John,	*Auburn*,	1 Law
Barth, Ira Steiner,	*Atchison, Kansas*,	1 Mech. Eng.
Bartholomew, Mary Alice,	*Philadelphia, Pa.*,	1 Arts
Bartlett, Harry Griffith,	*Baltimore, Md.*,	1 Mech. Eng.
Bartlett, Robert Lander, D.M.D., M.D.,	*Lynn, Mass.*,	Sp. Medical
Basch, Samuel Behrend,	*Kingston*,	1 Medical
Bassett, Herbert Howard,	*New Britain, Conn.*,	2 Civil Eng.
Bassin, John Nicholas,	*New York City*,	1 Medical
Batchelar, Eugene Croker,	*Jersey City, N. J.*,	1 Mech. Eng.
Bateman, Jerome Arch,	*Boonville*,	Sr. Law
Bates, James Lawrence,	*Lima*,	1 Mech. Eng.
Bauder, George Washington,	*Middletown, Pa.*,	4 Arts (1 Medical)
Baum, Ike,	*Uniontown, Pa.*,	1 Elect. Eng.
Baumgardner, Edward,	*Toledo, O.*,	Sp. Forestry
Baxter, Eugene Monell,	*Ithaca*,	Sp. Agriculture
Bayard, Maurice Francis,	*Vincennes, Ind.*,	1 Architecture
von Bayer, August Hector,	*Ithaca*,	3 Civil Eng.
Beach, George Cameron, B.L.,	*Watkins*,	Jr. Law
Beals, William Bryant,	*Norwich*,	2 Mech. Eng.
Beardslee, Robert Winslow,	*Gouverneur*,	4 Elect. Eng.
Beardsley, Bess Emmons,	*Ithaca*,	1 Arts
Beatty, Hollis Strong,	*Oil City, Pa.*,	1 Elect. Eng.
Beatty, William Chambers,	*Beatty, Pa.*,	1 Mech. Eng.
Beckel, Melville Jerome,	*New York City*,	1 Medical
Becket, George Crocket,	*Montreal, Can.*,	Sr. Medical
Beckwith, Bessie Eugenia,	*Ithaca*,	1 Arts
Beckwith, Henry Clay,	*Ithaca*,	1 Mech. Eng.
Beckwith, Mary Winifred,	*Ithaca*,	1 Medical

Bedell, Rayner Monroe,	*Montclair, N. J.*,	2 Mech. Eng.
Bedford, Alleta Langdon,	*Brooklyn*,	1 Medical
Beebe, Albert Henry,	*Ithaca*,	1 Law
Beebe, Harry Snyder,	*Burdett*,	1 Veterinary
Beecher, Louis Allen,	*Derby, Conn.*,	2 Mech. Eng.
Beer, George William,	*Ashland, O.*,	2 Architecture
Behring, Joshua Aaron,	*Pinsk Minsk, Russia*,	1 Medical
Beidler, Joseph Arthur,	*Willoughby, O.*,	1 Mech. Eng.
Bell, George Arthur,	*Rome*,	1 Agriculture
Bell, Horace Milton,	*Washington, D. C.*,	1 Elect. Eng.
Bell, Jesse Merritt,	*Lockport*,	4 Mech. Eng.
Bellinger, Daniel Spalding,	*Tonawanda*,	1 Mech. Eng.
Beltaire, Mark Anthony, Jr.,	*Danbury, Conn.*,	1 Civil Eng.
Benedict, Frederick Elias,	*Billings*,	1 Civil Eng.
Benedict, Winifred Clare,	*Canastota*,	1 Arts
Bennett, Earl,	*Masonville*,	Jr. Law
Bennett, Martha Crosby,	*Brooklyn*,	1 Arts
Bentley, Gordon, Mansir,	*Great Barrington, Mass.*,	2 Agr.
Bentley, Ruth,	*Fluvanna*,	2 Arts
Benton, Julian Juriah,	*W. Berkeley, Cal.*,	4 Medical
Benton, Stuart Herbert,	*Brooklyn*,	3 Arts
Berg, Edwin Victor,	*Davenport, Iowa*,	2 Elect. Eng.
Bergen, Charles Williams,	*Canajoharie*,	4 Mech. Eng.
Berkeley, Edward Fairfax, 3rd,	*St. Louis, Mo.*,	1 Architecture
Bernstein, Abraham,	*New York City*,	2 Medical
Bernstein, Israel Isaac,	*New York City*,	1 Medical
Berry, Arthur Olin,	*Holyoke, Mass.*,	2 Mech. Eng.
Berry, Romeyn,	*Hudson*,	1 Arts
Berryman, Wilson Garfield,	*New York City*,	1 Mech. Eng.
Bessey, Josephine Edna,	*Brooklyn*,	2 Arts
Best, Jean Isabel,	*Washington, Pa.*,	3 Medical
Betts, Norman De Witt,	*Wilton, Conn.*,	1 Mech. Eng.
Beuck, Gustave Otto,	*Davenport, Ia.*,	3 Civil Eng.
Beyer, Walter Oliver,	*Buffalo*,	2 Mech. Eng.
Bianchi, Francesco,	*New York City*,	2 Forestry
Bickelhaupt, Miles,	*Redwood*,	1 Elect. Eng.
Bidwell, Peter Swartout,	*Port Jervis*,	2 Architecture
Binkerd, Helen Dorsey,	*Brooklyn*,	4 Architecture
Bird, Paul Percy,	*Rochester*,	4 Mech. Eng.
Birge, Humphrey,	*Buffalo*,	1 Arts
Bisbee, Ben Hinman,	*Chicago, Ill.*,	3 Civil Eng.
Bishop, Harriett Kilbourne,	*Norwich, Conn.*,	1 Arts

Blair, John Hamilton,	*Ithaca*,	3 Arts
Blakeslee, Charles Albert,	*Coal Glen, Pa.*,	1 Civil Eng.
Blakeslee, John Roy,	*Whitehall*,	2 Elect. Eng.
Blakeslee, Wilbur Bunnell,	*Plantsville, Conn.*,	1 Mech. Eng.
Blanchard, Arthur Samuel,	*Oak Park, Ill.*,	2 Mech. Eng.
Bligh, Julia Morum,	*Warsaw*,	2 Arts
Bliss, Theodore,	*Troy*,	2 Arts (1 Medical)
Bloomer, Cornelius DuBois,	*Marlboro*,	1 Mech. Eng.
Bloomingdale, Gertrude,	*Alabama*,	2 Medical
Blount, Henry Fitch, Jr.,	*Washington, D. C.*,	1 Arts
Boardman, Emily Stella,	*Trumansburg*,	1 Arts
Bodell, Frederic,	*Auburn*,	Sr. Law
Bodler, Oscar William,	*Germania, Pa.*,	3 Mech. Eng.
Boecher, Louis Henry, Jr.,	*Spring Valley*,	Jr. Law
Boettiger, Carl,	*Long Island City*,	1 Medical
Bogart, Loring Jay,	*Ithaca*,	1 Elect. Eng.
Bogle, Walter Scott, Jr.,	*Chicago, Ill.*,	3 Mech. Eng.
Bohn, Harry George,	*Brooklyn*,	Sp. Architecture
Boire, Victor Francis,	*Plattsburg*,	Jr. Law
Bole, Joseph Kirkpatrick,	*Cleveland, O.*,	4 Science
Bole, Robert Allen,	*Cleveland, O.*,	2 Arts
Bolles, Camilla Warner,	*Norwich*,	1 Arts
Borst, Theodore Frank,	*Baltimore, Md.*,	3 Forestry
Borst, Victor Dow,	*Seward*,	3 Arts
Bosshart, John Henry,	*Clifton Springs*,	2 Arts
Bostwick, Henry Montgomery,	*Ithaca*,	3 Mech. Eng.
Bosworth, Edwin Mahlon,	*Pittsburg, Pa.*,	1 Mech. Eng.
Bowen, Fred Jay,	*Haskinville*,	1 Agriculture
Bowen, Willis Elliott, Ph.G.,	*Churchville*,	2 Medical
Bowman, Edgar Stillman,	*Cleveland, O.*,	2 Arts
Bowman, Josephine Edith,	*Hornellsville*,	4 Arts
Bowman, Marian Rose,	*Gouverneur*,	2 Arts
Boyd, Blair Morton,	*Hillsboro, O.*,	1 Mech. Eng.
Boyer, Russell Lanson,	*Brooklyn*,	1 Elect. Eng.
Boynton, Albert Beeber,	*Sewaren, N. J.*,	2 Elect. Eng.
Boynton, Lawrence William,	*Whitney's Pt.*,	Sr. Law
Bradford, Stella,	*New York City*,	2 Medical
Bradley, Herbert Chapman,	*Montclair, N. J.*,	2 Civil Eng.
Brady, George Edward Drullard,	*Buffalo*,	1 Arts
Brand, Walter Nathan,	*Ilion*,	2 Civil Eng.
Brannen, William James,	*Bolivar*,	Sr. Law
Branson, Craig Ridgway,	*Philadelphia, Pa.*,	3 Elect. Eng.

Braucher, Howard Solomon,	*Pike*,	1 Arts
Braun, Walter Martin,	*Toledo, O.*,	1 Arts
Brecht, Frederick William, Ph.G.,	*Brooklyn*,	1 Medical
Breckenridge, Clarence Edward,	*St. Louis, Mo.*,	4 Elect. Eng.
Breedlove, John Cromwell,	*Zionsville, Ind.*,	1 Civil Eng.
Brewster, Israel,	*New York City*,	1 Medical
Brewster, Margaret Powell,	*New York City*,	3 Medical
Briggs, Arthur James,	*Lima*,	Sp. Mech. Eng.
Briggs, Charles Harold,	*Pasadena, Cal.*,	4 Science
Briggs, Roscoe Conger,	*Oneonta*,	1 Arts
Bright, William Ralph,	*St. Louis, Mo.*,	4 Civil Eng.
Brickerhoff, Arthur Freeman,	*Mt. Vernon*,	2 Agriculture
Briner, Emil Amandus,	*New York City*,	3 Mech. Eng.
Brinsmade, Herman Hine,	*Springfield, Mass.*,	1 Arts
Brintnall, Charles Shattuck,	*Chicago, Ill.*,	4 Science
Bristol, James Cyrus,	*Rochester*,	1 Arts
Britton, John,	*New York City*,	1 Medical
Brizse, Norman Charles,	*Brooklyn*,	2 Mech. Eng.
Brockway, Harry Smith,	*Homer*,	1 Law
Brodman, Henry,	*New York City*,	Sr. Medical
Brooks, Arthur De Witt,	*Cleveland, O.*,	4 Science
Brooks, Everett Watson,	*St. Louis, Mo.*,	1 Civil Eng.
Brooks, Henry Chapin,	*Hartford, Conn.*,	Sr. Law
Brooks, Revilo Talcott,	*Rushford*,	4 Architecture
Brower, Irving Clinton,	*Philadelphia, Pa.*,	3 Civil Eng.
Brown, Agnes Stuart,	*Salem, Oregon*,	1 Arts
Brown, Charles Bansher,	*Montclair, N. J.*,	1 Elect. Eng.
Brown, Collingwood Bruce, Jr.,	*Ithaca*,	1 Civil Eng.
Brown, Christopher William,	*Brooklyn*,	1 Medical
Brown, Douglas Kinnear,	*Brooklyn*,	1 Arts
Brown, Frank Bement,	*Glens Falls*,	2 Architecture
Brown, Fred Dill,	*Eau Claire, Wis.*,	2 Elect. Eng.
Brown, Helen Louise,	*Ithaca*,	2 Arts
Brown, Louise Fargo,	*Buffalo*,	1 Arts
Brown, Mary Hess,	*Columbus, O.*,	4 Medical
Brown, Nathaniel Adelbert,	*Scottsville*,	1 Civil Eng.
Brown, Raymond Elliott,	*Reynoldsville, Pa.*,	1 Arts
Brown, Ralph Minthorne,	*Ithaca*,	3 Arts (1 Medical)
Brown, Ralph Murdoch,	*New York City*,	1 Civil Eng.
Brown, Wallace Macdonald,	*Brooklyn*,	2 Mech. Eng.
Bruce, Louis Fred,	*Joliet, Ill.*,	1 Elect. Eng.
Bruère, Henry Jaromie,	*St. Charles, Mo.*,	2 Arts

Brunor, Emîle, Ph.G.,	*New York City*,	3 Medical
Bruns, Gustave John,	*Niagara Falls*,	1 Agriculture
Bryant, Arthur Parsons,	*Newtonville, Mass.*,	1 Arts
Bryant, Ralph Clement,	*Princeton, Ill.*,	4 Forestry
Buchanan, Myron Webster,	*Clayville*,	4 Elect. Eng.
Buck, Ellard,	*West Groton*,	4 Philosophy
Buck, Guerdon Conde, B.S.,	*Platteville, Wis.*,	Sr. Medical
Buckingham, Henry Hine,	*New York City*,	2 Arts
Buckley, Katherine Rose,	*Millbrook*,	2 Arts
Buckmaster, Ralph John,	*Ithaca*,	Jr. Law
Budd, Harry Stone,	*Chicago, Ill.*,	4 Mech. Eng.
Bugbee, Alice Elmina Gates,	*Gloversville*,	1 Medical
Bullard, Marguerite Jane,	*Providence, R. I.*,	1 Medical
Bullard, Ralph Comstock,	*Schuylerville*,	1 Mech. Eng.
Bullock, Jessie Cornelia,	*Pittsburg, Pa.*,	3 Arts
Bunnell, George Lincoln, Ph.B.,	*Bridgeport, Conn.*,	4 Medical
Burchard, Stewart,	*New York City*,	2 Arts
Burges, William Henry,	*Sequin, Tex.*,	2 Civil Eng.
Burlingame, Bruce Sedgwick,	*Syracuse*,	1 Mech. Eng.
Burnett, Samuel Howard, A.B., M.S.,	*Webster*,	1 Veterinary
Burnett, William John,	*Brooklyn*,	1 Mech. Eng.
Burns, Edward, Jr.,	*Brooklyn*,	1 Mech. Eng.
Burns, Godfrey Chas. Henry,	*New York City*,	1 Medical
Burns, Joseph Patrick,	*Watertown*,	1 Arts
Burr, David Eugène,	*Montclair, N. J.*,	1 Mech. Eng.
Burritt, Carrie Luella,	*Chili Sta.*,	2 Arts
Burrows, Eastman Albin,	*Grand Forks, N. Dak.*,	2 E. Eng.
Burrows, George Frederick,	*Buffalo*,	4 Elect. Eng.
Burt, Austin,	*Black River Falls, Wis.*,	4 Mech. Eng.
Burt, Le Van Merchant,	*West New Brighton*,	3 Civil Eng.
Burwell, Robert Lemmon,	*Baltimore, Md.*,	3 Civil Eng.
Bushnell, Fred Forbes, B.Agr.,	*Ithaca*,	1 Veterinary
Bushnell, Horace Carlton, A.B.,	*Davenport, Iowa*,	2 Mech. Eng.
Bushong, Jacob, B.E.,	*Kelton, Pa.*,	2 Mech. Eng.
Butchers, Earle Burdette,	*Madison*,	3 Civil Eng.
Butler, Anne Browning,	*Indianapolis, Ind.*,	1 Arts
Butler, Alice Short,	*Indianapolis, Ind.*,	1 Arts
Butler, Henry Weil,	*New York City*,	4 Elect. Eng.
Butler, Howard Palmer,	*Brooklyn*,	2 Arts
Butler, Ralph,	*Sandusky, O.*,	1 Forestry
Butler, William,	*Saratoga Springs*,	Jr. Law
Butler, William Marsh,	*Syracuse*,	4 Civil Eng.

Butterworth, Mary Edna,	*Morristown, N. J.*,	3 Medical
Cable, Hobart Norman,	*Walton*,	1 Law
Cadogan, Gertrude Sweetland,	*Hornellsville*,	4 Science
Cahill, Andrew Timothy,	*Hoosick Falls*,	1 Arts
Cahill, Francis Joseph,	*Hoosick Falls*,	1 Arts
Caine, Thomas Andrew,	*Ithaca*,	1 Arts
Caldwell, Edward Chapin,	*Milton, Pa.*,	1 Elect. Eng.
Caldwell, Edward Losuter,	*Corpus Christi, Tex.*,	1 Agriculture
Caldwell, Felix Renick,	*Circleville, O.*,	1 Law
Caldwell, William Arthur,	*Sugar Hill*,	Jr. Law
Callahan, Dennis George, A.B.,	*Brooklyn*,	2 Medical
Callanan, John James,	*Slingerlands*,	1 Civil Eng.
Cameron, Irving Gourmott,	*Brooklyn*,	1 Medical
Campbell, Robert Morton,	*Albany*,	1 Mech. Eng.
Canfield, Amos,	*Van Etten*,	2 Medical
Cantle, William Henry,	*Norwich, Conn.*,	Sr. Medical
Cardullo, Forrest Ellwood,	*Titusville, Pa.*,	3 Elect. Eng.
Carlisle, Floyd Leslie,	*Dayton, O.*,	1 Arts
Carpenter, Benjamin Fellows,	*Bloomsbnrg, Pa.*,	1 Architecture
Carpenter, George Henry, Jr.,	*Liberty*,	1 Law
Carr, Edward Wheeler, Jr.,	*Rochester*,	2 Elect. Eng.
Carr, Leonard Jarvis,	*Batavia, Ill.*,	2 Mech. Eng.
Carrier, Willis Haviland,	*Buffalo*,	3 Elect. Eng.
Carrigan, Kathryn Elizabeth Clare,	*Ithaca*,	2 Arts
Carroll, Harry Clarence,	*Worcester, Mass.*,	1 Mech. Eng.
Carruth, William Massey,	*Cleveland, O.*,	3 Arts
Carter, Helen Louise,	*Newark, N. J.*,	1 Medical
Carver, Katherine Eliza,	*Valparaiso, Ind.*,	2 Arts
Cary, Ernest Bacon,	*Lockport*,	4 Mech. Eng.
Case, G Harry,	*Binghamton*,	1 Mech. Eng.
Catlin, Charles Howard,	*Chicago, Ill.*,	4 Science
Catlin, Wm. Lyle,	*Chattanooga, Tenn.*,	4 Mech. Eng.
Cavagnaro, John Joseph, B.S.,	*New York City*,	4 Mech. Eng.
Cavnah, Howard Edward,	*Canton, O.*,	2 Mech. Eng.
Cazenove, Louis Albert, Jr.,	*Theological Sem., Va.*,	2 Mech. Eng.
Chace, Paul Griswold,	*Chicago, Ill.*,	2 Elect. Eng.
Chalmers, Thomas Stuart,	*Chicago, Ill.*,	1 Mech. Eng.
Chandler, Albert Hotchkiss,	*Buffalo*,	2 Civil Eng.
Chandler, Elbert Goodsell,	*Yatesville, Conn.*,	4 Mech. Eng.
Chapin, Charles Willard,	*Georgetown*,	1 Medical
Chapman, Carlton Throp,	*Palmyra*,	4 Civil Eng.

Chapman, Irving Lee,	*Oneonta*,	1 Civil Eng.
Charlton, Rushton,	*Chicago, Ill.*,	Sp. Forestry
Chase, Elma Dorothy,	*Knapp Creek*,	1 Arts
Chase, Henry Lord,	*San Francisco, Cal.*,	2 Arts
Chase, Jerome Babcock,	*Morrisville*,	1 Arts
Chase, John,	*Cold Spring Harbor*,	2 Mech. Eng.
Chase, William Edwin,	*Crystal Springs*,	4 Elect. Eng.
Chasins, Charles Louis,	*New York City*,	2 Medical
Chatillon, Ralph Frederick,	*New York City*,	2 Elect. Eng.
Cheney, Rollin Kimball,	*Jamestown*,	1 Elect. Eng.
Cheyney, Edward Gleen,	*Washington, D. C.*,	4 Arts
Childs, Wallace Jones,	*Utica*,	3 Mech. Eng.
Chisholm, Kenneth Ogilvie,	*Brooklyn*,	Jr. Law
Christie, Elsie,	*Nyack*,	1 Arts
Church, Alfred Whiting,	*Elgin, Ill.*,	1 Mech. Eng.
Churchill, Herbert Clinton,	*Akron*,	Sp. Agriculture
Clark, Arthur Edward,	*Pulaski*,	2 Civil Eng.
Clark, Albert Harvey, Ph.B.,	*Dryden*,	Jr. Law
Clark, Charles Sprague,	*Buffalo*,	1 Arts
Clark, Coryell,	*Nichols*,	Sr. Medical
Clark, Edward Frank,	*Newburgh*,	Sr. Law
Clark, Frank Durborn, B.S.,	*Rochester*,	3 Mech. Eng.
Clark, Harold Haines,	*Collins*,	4 Mech. Eng.
Clark, Isabel Janet,	*Mandan, N. Dak.*,	1 Arts
Clark, James Joseph,	*Port Byron*,	Sp. Agriculture
Clark, John O'Fallon, Jr.,	*St. Louis, Mo.*,	1 Mech. Eng.
Clark, William Alexander Graham, B.S., M.E.,	*Raleigh, N. C.*,	4 Mech. Eng.
Clark, Willard Weld,	*Lockport*,	1 Forestry
Clarke, Milo Robinson,	*Newburgh*,	1 Elect. Eng.
Clarke, Samuel William,	*Independence*,	Sp. Agriculture
Clauson, Robert,	*Apalachin*,	2 Arts
Claypole, Agnes Mary, M.S., Ph.D.,	*Akron, O.*,	2 Medical
Claypole, Edith Jane, Ph.B., M.S.,	*Akron, O.*,	1 Medical
Cleghorn, Guy Forsythe,	*Green Island*,	1 Medical
Clemson, John Gardner,	*Pittsburgh, Pa.*,	1 Elect. Eng.
Clinton, Harry Davis,	*Binghamton*,	1 Forestry
Coale, Harvey Morton,	*Baltimore, Md.*,	1 Elect. Eng.
Coates, Henry Troth, Jr.,	*Berwyn, Pa.*,	3 Mech. Eng.
Cobleigh, Henry Rice,	*Brooklyn*,	3 Elect. Eng.
Cochran, Fernald Charles,	*Ithaca*,	1 Arts
Cochran, Julia Andrew,	*Ithaca*,	4 Philosophy

Cohen, Frances,	*New York City*,	4 Medical
Cohen, Herbert Daniel,	*Nyack*,	Jr. Law
Cohen, Rose, M.E., B.E.,	*New York City*,	1 Medical
Cohoon, Anson Elikem, B.S.,	*Elizabeth City, N. C.*,	Sp. Forestry
Coit, Charles Winn,	*Holyoke, Mass.*,	3 Civil Eng.
Colborn, Harry Carney,	*Michigan City, Ind.*,	1 Arts
Cole, Thomas Folwell,	*Ovid*,	1 Medical
Cole, William Flintham,	*Albion*,	3 Civil Eng.
Coleman, Joseph Emile,	*Red Bank, N. J.*,	Sp. Mech. Eng.
Collier, Otto Lindsay,	*Uniontown, Pa.*,	1 Elect. Eng.
Collins, Karrick Pelouze,	*St. Louis, Mo.*,	1 Law
Colton, Gordon Weir, B.S.,	*Brooklyn*,	4 Mech. Eng.
Conable, Barber Benjamin, Jr.,	*Warsaw*,	3 Arts
Congdon, Robert Earle,	*Gowanda*,	1 Law
Conger, Pearl Hathaway,	*Groton*,	1 Arts
Conklin, William Eltinge,	*Fishkill*,	4 Civil Eng.
Conkling, Leon De Vére,	*Elmira*,	4 Civil Eng.
Cook, William Leigh, C.E.,	*Princeton, N. J.*,	4 Elect. Eng.
Cool, Charles Leroy,	*Pittston, Pa.*,	1 Arts
Coolbaugh, Ronald Gilbert,	*Easton, Pa.*,	1 Mech. Eng.
Coolidge, Emelyn Lincoln,	*Boston, Mass.*,	4 Medical
Coon, William Hawkins,	*Batavia*,	Sr. Law
Coons, Fannie Lazelle,	*Kingston*,	1 Arts
Cooper, Helen Wilhemina,	*Dayton, O.*,	1 Arts
Cooper, Ralph Stuart,	*Ithaca*,	1 Mech. Eng.
Corbin, Clement Kellogg,	*Elizabeth, N. J.*,	1 Mech. Eng.
Corcilius, Inez,	*Jamestown*,	4 Arts
Cordes, Marguerite Roshé,	*West Saugerties*,	2 Arts
Corr, Joseph Aloyisius,	*Troy*,	Sr. Law
Corrigan, George Francis, M.D.,	*New York City*,	4 Medical
Corrigan, John W, V.S.,	*Owego*,	3 Veterinary
Corse, Florence Brewster,	*Saugerties*,	1 Arts
Coryell, Clarence Catlin,	*Ithaca*,	1 Medical
Cosad, Kate Anar,	*Waterloo*,	3 Arts
Costello, George Justin,	*Syracuse*,	1 Mech. Eng.
Costello, Margaret Clara,	*Seneca Falls*,	4 Philosophy
Costigan, Leo Hubert,	*New York City*,	2 Medical
Cottrell, Leon,	*Albany*,	3 Elect. Eng.
Couch, Harvey Joel,	*Catharine*,	3 Arts
Couch, William Robert,	*Cleveland, O.*	2 Mech. Eng.
Coulston, Melvin Herbert,	*Wellsville*,	2 Arts
Coward, Herbert,	*W. Pittston, Pa.*,	2 Mech. Eng.

Cowdin, Thomas Hill,	*Batavia*,	4 Mech. Eng.
Cowell, Arthur Westcott,	*Auburn*,	1 Agriculture
Cowing, Herbert Lee,	*Brooklyn*,	4 Elect. Eng.
Cox, Raymond Goodsir,	*Ellenville*,	Jr. Law
Coyle, Clifford DeWitt,	*Ithaca*,	Sr. Law
Craig, Kittie Marion,	*Corinth*,	1 Arts
Crandall, Harry Kinney,	*Osceola, Pa.*,	3 Arts
Crandell, Walter Solomon,	*Chatham*,	Jr. Law
Craner, Harry Nicholas,	*Jordan*,	2 Elect. Eng.
Crawford, John Gorham,	*Chicago, Ill.*,	3 Mech. Eng.
Crihfield, Roy Horace,	*Atlanta, Ill.*,	1 Arts
Crispin, Clarence Geashart,	*Berwick, Pa.*,	2 Mech. Eng.
Crockett, Esther Marie Simonds,	*Brooklyn*,	1 Arts
Crofts, George Davis,	*Buffalo*,	3 Arts
Crosby, Cyrus Richard,	*Crosby*,	2 Arts
Cross, Harry Van Heusen,	*Fultonville*,	1 Elect. Eng.
Crossett, Juliet Sarah,	*Warsaw*,	2 Arts
Crossette, Murray Fisher,	*Hinsdale, Ill.*,	1 Civil Eng.
Crouch, Frank Monroe,	*Brooklyn*,	4 Arts
Crouch, Harold Chester,	*Oswego*,	4 Mech. Eng.
Crouch, Harry Ensign,	*Cohocton*,	Sp. Agriculture
Crouse, Dean,	*Chicago, Ill.*,	1 Arts
Crowl, Mabel Robinson,	*Ithaca*,	2 Arts
Crozier, Ray,	*Ithaca*,	2 Civil Eng.
Culver, Joseph Cook,	*Eau Claire, Wis.*,	1 Law
Cunniffe, Edward Rutherford,	*Port Jervis*,	1 Medical
Cunningham, William David,	*Ellenville*,	Sr. Law
Cunningham, William John,	*Sag Harbor*,	4 Civil Eng.
Curran, Hugh McCollum, B.S.,	*Raleigh, N. C.*,	Sp. Forestry
Currier, Gertrude Hastings,	*Springfield, Mass.*,	2 Arts
Currier, Walter Barron Hastings,	*Springfield, Mass.*,	2 Arts
Curry, Albert,	*Pittsburg, Pa.*,	2 Civil Eng.
Curtis, Allen,	*Palmer*,	4 Mech. Eng.
Curtis, Ralph Wright,	*Beloit, Ala.*,	2 Agriculture
Curtis, William Elliott,	*Norwalk, Conn.*,	1 Mech. Eng.
Curtiss, Clarence James,	*Ballston Spa*,	3 Mech. Eng.
Cuyle, John Jay,	*Oswego*,	3 Mech. Eng.
Daboll, Henry Gaylord,	*Memphis*,	2 Mech. Eng.
Dalzell, Charles Brown,	*Cold Spring*,	2 Elect. Eng.
Dalzell, William Cox, Jr.,	*S. Egremont, Mass.*,	2 Mech. Eng.
Dana, Caroline Russell,	*Newark, N. J.*,	Special Arts
Dargan, Samuel, A.B.,	*Orangeburg, S. C.*,	1 Arts

Darling, Frederic Warren,	*Buffalo*,	2 Arts
Dautel, Carl,	*Cleveland, O.*,	Jr. Law
Davall, Harold Jefferson,	*Camden, N. J.*,	1 Civil Eng.
Davenport, John Kilbourn Warner,	*S. Hadley Falls, Mass.*,	4 Elec. Eng.
Davidge, Sherwood Richard,	*Newark Valley*,	1 Mech. Eng.
Davidson, Louis Leopold,	*New York City*,	Sr. Medical
Davis, Chester Wyman,	*Utica*,	1 Law
Davis, George Jacob, Jr.,	*Washington, D.C.*,	2 Civil Eng.
Davis, George Woodbury,	*Mexico*,	Jr. Law
Davis, Glenmore Whitney,	*Galion, O.*,	1 Arts
Davis, John Charles,	*Binghamton*,	4 Civil Eng.
Davis, Oliver Henry,	*Buffalo*,	1 Arts
Davitt, John Washington,	*Troy*,	1 Civil Eng.
Dawes, Claude Thomas,	*Johnstown*,	1 Arts
Day, George Wilcox,	*Lockport*,	3 Elect. Eng.
Dean, Daniel Jefferson,	*Nichols*,	Sp. Agriculture
Dearborn, Richard Harold, A.B.,	*Salem, Oregon*,	4 Elect. Eng.
DeGarmo, Walter Charles, B.S. in C.E.,	*Ithaca*,	4 Architecture
De La Mater, Van Ness,	*Hudson*,	4 Mech. Eng.
De Lamater, William Jonas,	*Hudson*,	3 Arts
De la Motte, Anna Christeren,	*Brooklyn*,	4 Medical
Delano, Arthur Morton,	*Montclair, N. J.*	1 Elect Eng.
Demarest, Ruth,	*Nyack*,	1 Medical
Deming, Robert,	*Cleveland, O.*,	4 Mech. Eng.
Dennis, Helen, A.B.,	*Newark, N. J.*,	4 Medical
Dennis, Mary Rebekah,	*Charlotte*,	4 Arts
Denny, Robert Campbell,	*Newark, N. J.*,	1 Mech. Eng.
Dercum, Herman,	*Cleveland, O.*,	2 Architecture
DeVed, Horace Warren,	*New Rochelle*,	1 Mech. Eng.
Deyo, Bertha,	*Gardiner*,	2 Arts
Dibble, Charles Lemuel,	*Marshall, Mich.*,	1 Arts
Dickinson, Philip Storrs,	*Denver, Colo.*,	3 Arts
Diemer, Harry Marshall,	*Cleveland, O.*,	1 Elect. Eng.
Dirnberger, Michael Frank, Jr.,	*Buffalo*,	Jr. Law
Ditmars, Jacob Remsen,	*Saratoga*,	1 Arts
Divine, Allie,	*Ellenville*,	4 Medical
Dix, Frank Stillman,	*Brooklyn*,	1 Elect. Eng.
Dodge, Charlotte,	*Buffalo*,	Sp. Arts
Dodge, Harriet,	*Buffalo*,	4 Science
Dodge, Norman,	*Washington, D. C.*,	4 Science
Dodge, Robert Irving,	*Brooklyn*,	3 Architecture
Dolan, Paul, A.B.,	*Brooklyn*,	1 Medical

Dole, Rollin Wilbur,	*Salt Lake City, Utah*,	Jr. Law
Donaldson, Clara Rosella, M.S.,	*Greenwich, O.*,	Sp. Arts
Donk, Rose Rudolph,	*Newark*,	1 Arts
Donohue, Robert Daniel,	*Skaneatles*,	Sr. Law
Donovan, Herbert Darius Augustine,	*Ft. Covington*,	1 Arts
Donovan, Richard James,	*Brooklyn*,	4 Mech. Eng.
Doppelmayer, Della,	*Marshall, Texas*,	1 Arts
Dorn, Charles Harry,	*Albany*,	1 Law
Dorn, Ralph Waldo,	*Jamestown*,	3 Arts
Dorner, William Frederick,	*Camden, N. J.*,	2 Elect. Eng.
Doron, Charles Slauter,	*Cold Spring*,	1 Civil Eng.
Dorrance, James French,	*Seattle, Wash.*,	1 Arts
Dosh, Louis Philipe,	*New York City*,	1 Medical
Doubleday, Bernice Ednah,	*Jamestown*,	1 Arts
Doubleday, Thayer Ethelbert,	*Jamestown*,	1 Arts
Dougherty, James Smith,	*Atlanta, Ga.*,	Jr. Law
Doughty, Elizabeth Almy,	*Mattewan*,	2 Arts
Doughty, Phebe Van Vlack, A.B.,	Ph.B., *Mattewan*,	2 Medical
Downes, Bertha Maria,	*Francestown, N. H.*,	Sp. Arts
Downs, Irving Garfield,	*Riverhead*,	3 Mech. Eng.
Downs, Thomas,	*Albany*,	1 Law
Doyle, Clarence Morton,	*Meredith*,	2 Arts
Drake, Jane Ludlow,	*Buffalo*,	1 Arts
Drake, Marcus Motier, Jr.,	*Buffalo*,	4 Elect. Eng.
Dresser, Gardiner Sherman,	*New York City*,	4 Philosophy
Dresser, John Olmsted,	*Brooklyn*,	3 Arts
Druar, John Fenimore,	*Buffalo*,	1 Mech. Eng.
Druskin, Samuel Jerome, B.S.,	*New York City*,	2 Medical
DuBois, Chester Buck,	*Bridgeton, N. J.*,	2 Mech. Eng.
Dunham, Frederic Gibbons,	*Buffalo*,	2 Arts
Dunlavey, Robert Joseph, Jr.,	*Ithaca*,	2 Veterinary
Dunn, Arthur Taylor,	*Cortland*,	1 Arts
Dunn, Charles Andrew,	*Whitesboro*,	2 Arts
Dunn, Lillian Cecilia,	*Schenectady*,	1 Arts
Dunning, Emily, B.S.,	*New York City*,	3 Medical
Dussan, Benjamin,	*Bogata, Columbia, S. A.*,	1 Civil Eng.
Dutcher, Elsie Maria,	*Owego*,	4 Philosophy
Dyer, Frank Merritt,	*Binghamton*,	2 Medical
Eades, Jessie Margaret,	*Streator, Ill.*,	4 Arts
Earle, Enoch Walter,	*Worcester, Mass.*,	2 Civil Eng.
Earle, James Richard,	*Eddytown*,	2 Arts
Earle, Samuel Broadus, B.A., M.A.,	*Greenville, S. C.*,	2 Elect. Eng.

Eaton, Alvin Richard, Jr.,	*Elizabeth, N. J.*,	2 Medical
Eaton, Frederick Richard,	*Pompey*,	1 Arts
Eccleston, Robert Cook,	*Oxford*,	4 Mech. Eng.
Eckert, William Kaufman,	*Reading, Pa.*,	1 Law
Edge, Walter Smith,	*Darlington, Md.*,	1 Civil Eng.
Edgerton, Chauncey Townsend,	*Richmond Hill*,	3 Mech. Eng.
Edgerton, Myra Townsend,	*Richmond Hill*,	2 Arts
Edlich, Theodore Julius, Ph.G,	*New York City*,	2 Medical
Edminster, Frank Curter,	*Brooklyn*,	2 Arts
Edmonston, Clarence Lowrie,	*Montclair, N. J.*,	2 Elect. Eng.
Edwards, Franklyn Ellsworth, M.D.,	*Whitney's Point*,	Sp. Medical
Edwards, Stanley Richard,	*Utica*,	1 Elect. Eng.
Eells, Henry Wilson,	*Walton*,	2 Elect. Eng.
Eells, Kate Gay,	*Walton*,	1 Arts
Egeberg, Hans Olof, *Smaalenene*,	*Askin Sta., Norway*,	4 Civil Eng.
Egbert, Ella Elizabeth,	*North Hector*	Special Arts
Ehlers, Edmund Armenious,	*New York City*,	2 Medical
Ehrhart, Raymond Nelson,	*Mahanoy City, Pa.*,	3 Elect. Eng.
Ehrlich, Simon,	*New York City*,	2 Medical
Ellis, John MacEwan,	*Hartford, Conn.*,	1 Mech. Eng.
Ellis, Lucy Alicia,	*Clayton*,	1 Arts
Ellis, Wesley Rose,	*Johnstown, Pa.*,	1 Elect. Eng.
Ellis, Williard Waldo,	*Canaseraga*,	3 Arts
Ely, Harold Franklin, B.S., (M.E.),	*Brooklyn*,	4 Mech. Eng.
Emerson, Isabel Dolbier,	*Brooklyn*,	1 Arts
Emmons, Fred Earl,	*Spencer*,	2 Arts
Engel, Francis Jesse,	*Maryville, Tenn.*,	3 Civil Eng.
Engle, Euphemia Birnie,	*Ithaca*,	1 Arts
Englert, Alfred,	*Brooklyn*,	4 Mech. Eng.
English, Burt,	*VanEtten*,	1 Veterinary
English, Clifton Benson,	*Greenville, Pa.*,	2 Mech. Eng.
Epley, Henry Ernst,	*Franklin, Pa.*,	1 Mech. Eng.
Epstein, Sigmund,	*New York City*,	1 Medical
Estabrook, Charles Scott,	*Syracuse*,	Sp. Law
Estabrook, Harold Pitt,	*Saratoga Springs*,	Sp. Mech. Eng.
Estabrook, William Sears,	*Syracuse*,	4 Philosophy
Etsler, Clarence Bartlett,	*Gowanda*,	Sr. Law
Evans, Arad Ward,	*Washington, D. C.*,	1 Mech. Eng.
Evans, Chester Willard,	*San Francisco, Cal.*,	1 Elect. Eng.
Evans, Edward,	*Camden*,	2 Arts
Evans, Newton Gurdon, B.S.,	*Battle Creek, Mich.*,	4 Medical
Everett, Frederick, B.S.,	*Potsdam*,	2 Medical

Everett, George Abram, A.B., *Potsdam*, 2 Law
Everett, Harry Day, *Burke*, 1 Arts
Evermann, Toxaway Bronte, *Washington, D. C.*, 1 Architecture
Failing, Wallace Hugh, *Baldwinsville*, Sr. Law
Fairbairn, John Fitz Gerald, *Buffalo*, 2 Arts
Fairbank, Harvey Clark, *Jamestown*, 1 Arts
Fairchild, John Gifford, *Monticello*, 1 Arts
Farrar, Lilian Keturah Pond, *New York City*, 4 Medical
Farrell, Leo Francis, *Pawtucket, R. I.*, 2 Medical
Fassett, Frederick Wheeler, *Wellsville*, Sp. Forestry
Faust, John Wesley, *Poughkeepsie*, 4 Science (1 Medical)
Fay, Clarence Huntington, *Bath*, 3 Arts
Feehan, Anna, *Ovid*, 1 Arts
Feick, George, Jr., *Sandusky, O.*, 1 Architecture
Feigin, Philips Abram, *New York City*, Sp. Mech. Eng.
Felldin, Jennie Wilhelmina Sophie, *Auburn*, 4 Arts
Fellows, Eugene Hilpert, *Scranton, Pa.*, 1 Civil Eng.
Fenner, Robert Coyner, B.S., *Philadelphia, Pa.*, 1 Mech. Eng.
Ferdon, Edwin Nelson, *Buffalo*, 1 Arts
Ferdon, Franklin Lee, *Buffalo*, 1 Arts
Ferguson, George Alexander, *Rochester*, 3 Civil Eng.
Ferguson, Hugh McKnight, *Pittsburg, Pa.*, 1 Mech. Eng.
Ferguson, John Barrie, *New York City*, 2 Mech. Eng.
Ferguson, John Robert, *Whitesboro*, 1 Elect. Eng.
Fernow, Gordon, *Ithaca*, 2 Arts
Fernow, Ross Raymond, *Ithaca*, 2 Civil Eng.
Ferriss, Henry Theodore, *St. Louis, Mo.*, 1 Arts
Ferry, Perry Lawson, *Preble, Ind.*, 1 Medical
Fessenden, Wenona Atwater, *Ithaca*, 1 Arts
Fincke, Harry Stark, Ph.G., *Long Island City*, Sp. Medical
Field, Horace Luther, *Spencer*, 2 Arts
Finch, Jerry Calvin, *Fort Ann*, 2 Civil Eng.
Finereu, William Warrick, *Oswego*, 2 Mech. Eng.
Finley, Caroline Sandford, *New York City*, 3 Medical
Finley, George Irwin, *Philadelphia, Pa.*, 4 Civil Eng.
Finucane, Thomas Ray, *Rochester*, 1 Agriculture
Fischer, Henry John, Ph.G., *New York City*, 3 Medical
Fish, Edward Charles, *Salamanca*, Sr. Law
Fish, Emmett Grant, *Mecklenberg*, 1 Medical
Fisher, Archie Max, *Spencer*, 1 Medical
Fisher, Carl DeWitt, *Johnstown, Pa.*, 4 Arts (1 Medical)
Fisher, Frederick William, *Fairport*, 1 Civil Eng.

Fisher, Peter, Jr.,	*Kenosha, Wis.*,	1 Law
Fishman, Joseph,	*New York City*,	Sp. Elect. Eng.
Fitch, Squire E.,	*Westfield*,	4 Civil Eng.
Fitz Gerald, Aaron Boylan,	*Newark, N. J.*,	2 Medical
Fitzpatrick, Jesse Arnette,	*Albany*,	1 Civil Eng.
Fitzpatrick, John Tracy,	*Brooklyn*,	4 Arts
Flanders, Warren Beebe,	*Lake Bluff, Ill.*,	2 Elect. Eng.
Fleming, Bryant,	*Buffalo*,	Sp. Agriculture
Fleming, Mark L,	*Summit, N. J.*,	3 Medical
Fletcher, Roy Emery,	*Ithaca*,	4 Philosophy
Flint, Clinton Medbury, A.B.,	*Etna*,	Jr. Law
Flocken, Charles F,	*Englewood, Ill.*,	2 Veterinary
Flowers, Alan Estis,	*Memphis, Tenn.*,	2 Elect. Eng.
Fluhrer, Gerald Bishop,	*Albion*,	3 Arts
Flynn, Frederick Lyons,	*New York City*,	2 Medical
Flynn, Katherine Elizabeth,	*Troy*,	1 Arts
Foley, Marcella Marie,	*Ilion*,	3 Arts
Folger, Thomas Worth,	*Geneva*,	1 Law
Folk, Frederick Jackson,	*Brooklyn*,	3 Elect. Eng.
Follansbee, Robert,	*Elmira*,	2 Civil Eng.
Follmer, William Wilcox, B.S.,	*Williamsport, Pa.*,	3 Mech. Eng.
Folley, Etta,	*Newark, N. J.*,	1 Medical
Folson, Hinman Day, Jr.,	*Salt Lake City, Utah*,	Sp. Law
Foote, Wallace Park,	*Chicago, Ill.*,	2 Mech. Eng.
Ford, Agnes May,	*Medina*,	2 Arts
Ford, Hannibal Choate,	*Westville, Conn.*,	1 Mech. Eng.
Ford, Michael Ambrose,	*Medina*,	2 Arts
Ford, Walter Stebbins,	*Elmira*,	3 Elect. Eng.
Forrest, George Munro,	*Halifax, Can.*,	2 Civil Eng.
Forster, Frank Spencer,	*Mt. Clemens, Mich.*,	1 Architecture
Foster, Herbert Hamilton,	*Canandaigua*,	4 Philosophy
Foster, Robert Julian,	*Ithaca*,	1 Veterinary
Foster, Thomas Myron,	*Millbrook*,	1 Arts
Foster, Wallace Russel,	*Owego*,	1 Arts
Foster, William Britt,	*Utica*,	2 Mech. Eng.
Fowler, John Scott, B.S.,	*Philadelphia, Pa.*,	2 Mech. Eng.
Fox, John Cornwall,	*Penn Yan*	1 Mech. Eng.
Fraleigh, Herbert Edwin,	*Red Hook*,	1 Civil Eng.
France, Edgar Griffith,	*So. Bend, Ind.*,	1 Mech. Eng.
Francis, Isaac Hathway, Jr.,	*Baltimore, Md.*,	3 Mech. Eng.
Francis, John Morgan,	*Troy*,	2 Arts
Frankel, Julius,	*New York City*,	Sr. Medical

Franklin, Vernon Eugene,	*Sing Sing*,	1 Law
Frayer, William Alley,	*Springville*,	1 Arts
Frear, Edward Hughson,	*Ithaca*,	Sr. Law
Frederick, Walter Augustus,	*Wilmington, Del.*	1 Mech. Eng.
Freedman, Louis,	*New York City*,	1 Medical
French, S Webster, Jr.,	*Iantha, Mo.*,	4 Science
Frenzel, John Peter, Jr.,	*Indianapolis, Ind.*,	1 Civil Eng.
Frey, Homer Amos,	*Ronceverte, W. Va.*,	2 Mech. Eng.
Frick, Benjamin Otis,	*Bnrlington, Iowa*,	2 Arts
Fried, Herman,	*New York City*,	1 Medical
Fries, George Townley,	*Lyons*,	1 Law
Fries, William Hayes,	*Friendship*,	1 Arts
Frisbie, Alice Josette,	*Rochester*,	1 Arts
Fronheiser, Jacob Anton,	*Johnstown, Pa.*,	Sr. Law
Frost, Arthur Bertrand,	*Ithaca*,	3 Civil Eng.
Frye, Carl,	*New York City*,	3 Medical
Fuller, William Allison,	*Albany*,	3 Mech. Eng.
Fuller, Weston Earle,	*Phillips, Me.*,	4 Civil Eng.
Fulton, Daniel Fraser,	*Yonkers*,	1 Civil Eng.
Gaehr, David,	*New Castle, Pa.*,	3 Mech. Eng.
Gaehr, Paul Frederick,	*New Castle, Pa.*,	2 Arts
Gage, John,	*Schuylerville*,	1 Mech. Eng.
Gage, Lloyd Garrison,	*Wilmette, Ill.*,	2 Civil Eng.
Gail, Harry Merton,	*Buffalo*,	1 Mech. Eng.
Galarneau, George Martel,	*Albion*,	Special Agriculture
Galbraith, Alfred Gregory,	*Oneida Castle*,	Jr. Law
Gallagher, Bernard Alfred,	*Ithaca*,	2 Veterinary
Gamwell, Richard Holland,	*Pittsfield, Mass.*,	3 Mech. Eng.
Garcia, Fabian, B.S.,	*Mesilla, New Mexico*,	Sp. Agriculture
Garretson, Albert Merrifield,	*Buffalo*,	4 Arts
Gass, William Louis,	*Brooklyn*,	1 Mech. Eng.
Gay, John Sedgwick,	*Seneca Falls*,	3 Arts
Geddes, Susan Baker,	*Newark, N. J.*,	2 Medical
Geer, Helena,	*Ithaca*,	1 Arts
Geer, Howard Earl,	*Ithaca*,	3 Mech. Eng.
Geer, William Chauncey,	*Ithaca*,	1 Arts
Gehring, Edwin Wagner,	*Cleveland, O.*,	4 Civil Eng.
Gehring, Herbert August,	*Cleveland, O.*,	1 Civil Eng.
Geiss, Marie Paula,	*Brooklyn*,	1 Arts
Gelser, Charles Sumner,	*Dalton*,	1 Civil Eng.
Genger, Philip Bertram,	*Elmira*,	2 Elect. Eng.
George, Roswell Silas,	*Watertown*,	Jr. Law

Germann, Fred William,	*Brooklyn*,	1 Arts
Gettinger, Joseph Herman,	*New York City*,	2 Medical
Gibbs, Gerald Gilman,	*Sherman*,	1 Law
Gibbs, Grace Ruth,	*Hornellsville*,	2 Arts
Gibney, Annie Jane,	*Phillipsburg, N. J.*,	1 Arts
Gibson, George Edward,	*New York City*,	1 Civil Eng.
Gifford, Herbert Clyde,	*Oriskany*,	1 Medical
Gilbert, Archibald, Marvine,	*Washington, D. C.*,	2 Civil Eng.
Gilbert, Gerritt Reynolds,	*Elmira*,	1 Law
Gilbert, Howard Ludlow,	*Baltimore, Md.*,	3 Elect. Eng.
Gilbert, John Parke,	*Willard*,	1 Mech. Eng.
Gilbert, Sarah Jenney,	*Brooklyn*,	2 Arts
Gilchrist, James Montgomery,	*Chicago, Ill.*,	4 Elect. Eng.
Gilfillan, Elizabeth Riddle,	*Washington, D. C.*,	1 Medical
Gillespie, Clarence Lester,	*Hoosick Falls*,	1 Elect. Eng.
Gilliam, Marcus James,	*Sheridan, Ind.*,	1 Arts
Gillies, Charles Holmes, M.D.,	*New York City*,	Sp. Medical
Gillmore, Gertrude Assheton,	*Brooklyn*,	3 Arts
Gilmore, Harry Wilson, Ph.B.,	*Oskaloosa, Iowa*,	3 Civil Eng.
Gilmour, Matthew, Jr., A.B.,	*Richmond, Va.*,	2 Elect. Eng.
Giltner, Louis Curtis,	*Ithaca*,	4 Civil Eng.
Gimper, Earle H.,	*Galveston, Texas*,	1 Mech. Eng.
Gingold, David,	*Kishinet, Bessaraleia, Russia*,	Sr. Medical
Ginzburg, Isidor,	*Wilna, Russia*,	Sr. Medical
Givens, Harrison Crandall,	*Ithaca*,	2 Elect. Eng.
Gladden, Charles Stephen,	*Napoli*,	4 Mech. Eng.
Glasgow, Maud,	*New York City*,	3 Medical
Glass, Morris Hyman,	*New York City*,	Sp. Medical
Glazebrook, Francis Henry,	*Elizabeth, N. J.*,	Sr. Medical
Glazier, Ralph Clark,	*West Gardner, Mass.*,	1 Science
Gleason, Eleanor,	*Rochester*,	1 Arts
Glenn, Edwin Atlee,	*Berwick, Pa.*,	3 Arts
Gluckman, George,	*New York City*,	2 Medical
Gobel, Frank Conant,	*Groton*,	1 Elect. Eng.
Goehle, Otto Louis,	*Buffalo*,	2 Arts (1 Medical)
Golden, Welford, J,	*Little Falls*,	Jr. Law
Goldmark, Godfrey,	*Brooklyn*,	1 Law
Goldsmith, Harry,	*Binghamton*,	1 Law
Goldsmith, Irving Israel,	*Saratoga Spa.*,	1 Arts
Goldwater, Sigismund Schultz,	*New York City*,	3 Medical
Gomph, Clarence Jeremiah,	*Utica*,	2 Elect. Eng.
Good, George,	*Jersey City, N. J.*,	3 Medical

Goodall, Stella Vivian,	*Ithaca*,	3 Arts
Goodenough, Eva Grace Mayham,	*Worcester*,	2 Arts
Goodwin, Abby May,	*Ithaca*,	1 Arts
Gorton, James Treat, B.S.,	*Yonkers*,	Sr. Medical
Gould, Archie Baxter,	*Pt. Jervis*,	2 Mech. Eng.
Gould, Clark Sumner,	*Walton*,	1 Medical
Gould, James Henry,	*Seneca Falls*,	4 Arts
Gould, Lawrence Ebenezer,	*Owasso, Mich.*,	3 Elect. Eng.
Grady, Eliza,	*Eastport, Me.*,	4 Medical
Graff, John Theodore,	*Washington, D.C.*,	4 Elect. Eng,
de Grain, Edward Reinhold Suiva	*Washington, D.C.*,	2 Elect. Eng.
Grantier, Leslie Verne,	*Elmira*,	3 Mech. Eng.
Graton, Louis Caryl,	*Ithaca*,	4 Science
Grattan, George William	*Buffalo*,	Jr. Law
Graves, Edith Regina,	*Ithaca*,	1 Arts
Gray, Clyde D,	*Lakeville*,	4 Elect. Eng.
Gray, Edward Townsend,	*Oswego*,	1 Civil Eng.
Gray, Leon William,	*N. Tonawanda*,	2 Architecture
Green, Arthur Randolph,	*New York City*,	1 Medical
Green, Heatley,	*Syracuse*,	2 Mech. Eng.
Greenberg, Augustus Abraham,	*New York City*,	1 Medical
Greene, Carlton Horace,	*Fort Plain*,	1 Law
Greene, James Sonnet,	*New York City*,	2 Medical
Gregg, Willis Ray,	*Phoenix*,	1 Arts
Gregory, Alice,	*New York City*,	4 Medical
Grey, Florence Baker,	*Brooklyn*,	4 Philosophy
Griffith, James Harvey, Jr.,	*East Rockaway*,	3 Arts
Grimshaw, Frederick George,	*Paterson, N. J.*,	2 Mech Eng.
Griswold, Edith Anna,	*Kinsman, O.*,	4 Arts
Griswold, Jonas Walter,	*Elmira*,	3 Civil. Eng.
Gross, Louis,	*Troy*,	1 Mech. Eng.
Grund, Marie,	*New York City*,	4 Medical
Guillen, Salvador Antonio,	*Granada Nicaragua*,	1 Mech. Eng.
Gundacker, Henry John, A.B.,	*New York City*,	3 Medical
Gunn, Spencer, Clay,	*Plattsburg*,	3 Arts
Gutman, Jacob,	*New York City*,	Sr. Medical
Haas, Magnus Sigmund, A.B.,	*Savannah, Ga.*,	2 Mech. Eng.
Haas, Sherwin Ward,	*Depauville*,	3 Civil Eng.
Hadcock, Jerome Asa,	*Watertown*,	1 Law
Haig, Mahan, Hume,	*Charleston, S. C.*,	4 Mech. Eng.
Haines, Edward Lawrence,	*Schenectady*,	Sp. Mech. Eng.
Haines, John Allen,	*Chicago, Ill.*,	2 Science

Haisler, Raymond,	*Milwaukee, Wis.*,	1 Civil Eng.
Hall, Margaret Lucy,	*Malone*,	2 Arts
Hall, Selded Hamlyn,	*Buffalo*,	Sp. Mech. Eng.
Halladay, Harry Frank,	*DePauville*,	2 Mech. Eng.
Halsey, Clayton Ivy,	*West Groton*,	4 Philosophy
Halsey, George Nye,	*Ithaca*,	Sr. Law
Hamill, John Dunlop,	*New York City*,	Sr. Medical
Hammer, William Jacob,	*Elizabeth, N. J.*,	3 Medical
Hammond, Archie Lestina,	*East Ashford*,	1 Arts
Hand, Edward,	*Elizabeth, N. J.*,	Sr. Medical
Hankinson, Thomas Leroy, B.S.,	*Hillsdale, Mich*,	4 Science
Hanmer, Lee Franklin,	*Bradford*,	4 Philosophy
Hannock, Charles Gustave,	*Albany*,	2 Mech. Eng.
Hannon, Arthur Mason,	*Cleveland, O.*,	3 Architecture
Hansen, Anthony Hans,	*Norwich*,	2 Arts
Hard, Arthur Warden,	*Ilion*,	1 Civil Eng.
Hardie, Charles Guy,	*Roscoe*,	1 Elect. Eng.
Harding, Mary Eloise,	*Middletown*,	4 Philosophy
Harding, Robert John,	*Chatham*,	1 Civil Eng.
Hardy, Carl Earnest, B.S. in E.E.,	*Rome, Ga.*,	4 Elect. Eng.
Harpending, Samuel Asbury,	*Dundee*,	3 Agriculture
Harrington, Glenn Bower,	*Butte, Mont.*,	4 Science
Harris, Edward, Jr.,	*Rochester*,	Sr. Law
Harris, John Barnes,	*Sacketts Harbor*,	3 Arts
Harris, Joseph Porter,	*Cleveland, O.*,	3 Arts
Harris, Lena,	*Ithaca*,	3 Arts
Harrison, George Howard,	*Caldwell, N. J.*,	1 Mech. Eng.
Harrison, Roland Rathbun,	*Binghamton*,	1 Mech. Eng.
Harshbarger, Elmer Dwight,	*Jackson, O.*,	3 Civil Eng.
Hart, Harold Leslie,	*Ithaca*,	1 Arts
Hart, John Thomas,	*New York City*,	1 Mech. Eng.
Hart, Roy Meldrum,	*North Rush*,	Jr. Law
Hattley, Seward Wilson,	*Gouverneur*,	2 Elect. Eng.
Hartman, James Denniston,	*Hollidaysburg, Pa.*,	1 Mech. Eng.
Hartwell, Clarence Lake,	*Wilkes-Barre, Pa.*,	3 Civil Eng.
Harwick, Flora Annette,	*Jacksonville, Fla.*,	1 Arts
Haskin, Lawrence Sprague,	*New York City*,	2 Elect. Eng.
Hast, Viola Gertrude,	*Cumberland, Md.*,	2 Arts
Hastings, Clara Williston,	*Phoenix*,	2 Arts
Hastings, Harold Edward,	*Bradford, Pa.*,	3 Mech. Eng.
Hastings, Robert Lee,	*Phoenix*,	4 Science
Hausner, Frank Howard,	*Farmington*,	Sr. Law

Hawley, Charles Crane, Ph.B.,	*Seneca Falls*,	1 Law
Hawley, Davis, Jr.,	*Cleveland, O.*,	4 Science
Hawley, Lee Fred,	*East Randolph*,	1 Arts
Haxton, Samuel Frederick,	*Oakfield*,	1 Arts
Hay, Walter Wing, A.B.,	*Ithaca*,	Jr. Law
Hayden, John Harold,	*New York City*,	1 Mech. Eng.
Hayes, Rud Bryant,	*Waverly*,	2 Elect. Eng.
Hazeltine, Robert Henry,	*Brooklyn*,	2 Elect. Eng.
Hazen, Raymond Howard,	*Ithaca*,	2 Veterinary
Hazlewood, Stuart,	*Grand Rapids, Mich.*,	1 M. Eng.
Healy, Thomas David Joseph,	*Brooklyn*,	Sr. Law
Hearne, William Lowder,	*Wheeling, W. Va.*,	1 Mech. Eng.
Heath, Daisy Winifred,	*West New Brighton*,	4 Philosophy
Hebb, Clarence Atkins,	*Brooklyn*,	1 Arts
Heidenheim, Zillah,	*Brooklyn*,	2 Arts
Heimbecker, Winifred,	*New York City*,	3 Medical
Heisler, Frederick William,	*Painted Post*,	Sp. Mech. Eng.
Heitshu, William Augustus,	*Scranton, Pa.*,	1 Mech. Eng.
Heller, Harley Howard,	*Rochester, Pa.*,	1 Mech. Eng.
Heller, John Walter,	*Newark, N. J.*,	3 Civil Eng.
Helm, Harold,	*Moravia*,	1 Law
Hemingway, Herbert Andrew,	*New York City*,	Sr. Law
Hemming, Walter Hannibal,	*New York City*,	1 Medical
Hempstead, Louise,	*Meadville, Pa.*,	4 Philosophy
Hempstead, Marguerite,	*Meadville, Pa.*,	4 Philosophy
Hemstreet, Ralph Emerson,	*Brooklyn*,	4 Philosophy
Hendricks, Ernest Demarest,	*Kingston*,	1 Civil Eng.
Henry, Florence French,	*Cortland*,	3 Arts
Herder, Claire Louise,	*Brooklyn*,	2 Arts
Herrick, Anna Grace,	*Bolivar*,	2 Arts
Hertz, Julius Jacob,	*New York City*,	1 Medical
Hess, Howard Arthur,	*Chicago, Ill.*,	1 Mech. Eng.
Hess, John Edward,	*Williamsport, Pa.*,	4 Elect. Eng.
Hess, Ralph Jones, B.S.,	*Great Valley*,	4 Medical
Hetzel, Guy,	*New York City*,	3 Elect. Eng.
Heughes, May Gertrude,	*Rochester*,	2 Arts
Heuser, Gerhard William,	*Brooklyn*,	1 Medical
Hicks, Shirley Nathaniel Combs, B.S.,	*Rockville Centre*,	Sr. Medical
Hickman, Emily,	*Buffalo*,	3 Arts
Higgins, Reuben Paul,	*Cortland*,	2 Arts
Hildreth, Edward Raymond, A.B.,	*Bridge Hampton*,	2 Medical
Hilkowich, Abe Maurice,	*New York City*,	2 Medical

Hill, Acton Miller,	*New York City*,	Sr. Law
Hiller, Francis Humperley,	*Cobleskill*,	1 Arts
Hilpert, Mercir George, B.S.,	*Farmington, Ia.*,	3 Civil Eng.
Hincklay, John Fay,	*Cambridge Springs, Pa.*,	2 Elect. Eng.
Hinckley, Francis Edward, Jr.,	*West New Brighton*,	2 Arts
Hinsdale, William Moses,	*Oswego Falls*,	1 Elect. Eng.
Hirsch, Elsie Henrietta,	*Newark, N.* .,	1 Arts
Hirsch, Henry,	*New York City*,	1 Medical
Hirshheimer, Louis Carver,	*LaCrosse, Wis.*,	2 Mech. Eng.
Hitchcock, Ethel Olivia Hunter,	*New York City*,	2 Medical
Hitchcock, Harry Alton,	*Bath, Me.*,	4 Science
Hitchcock, Samuel Patch,	*Bath, Me.*,	2 Arts
Hoard, Prescott Dygert,	*Herkimer*,	1 Civil Eng.
Hobart, Gladys Eliza,	*Boonville*,	1 Arts
Hodge, Seth Evans,	*Cincinnati, O.*,	1 Mech. Eng.
Hodges, Léonie Rose,	*Newark, N. J.*,	Sp. Agriculture
Hoerle, Horace Poinier,	*Ridgewood, N. J.*	1 Medical
Hogan, Lucy Agnes,	*Olean*,	1 Arts
Holcomb, Ernest Selah,	*Ithaca*,	3 Elect. Eng.
Holden, Charles Bierce,	*Chicago, Ill.*,	3 Mech. Eng.
Holden, Mary Lathrop,	*Buffalo*,	1 Arts
Holford, Fred Dewitt,	*Ithaca*,	1 Veterinary
Hollenbeck, Harry Bell,	*Avon*,	2 Civil Eng.
Holloway, Harold Euclid,	*New York City*,	1 Elect. Eng.
Holt, Corliss Mason,	*New York City*,	2 Medical
Hooker, Ava Lucile Salisbury,	*Geneseo*,	2 Arts
Hooker, George Haines,	*Watertown*,	2 Arts
Hoover, Walter Wells,	*Wellsville, Pa.*,	1 Arts (1 Medical)
Hopkins, Grant Sherman, B.S., D.Sc.,	*Ithaca*,	3 Vet.
Hopkins, Howard Corwin,	*Oil City, Pa.*,	1 Civil Eng.
Hopper, Herbert Andrew,	*Ithaca*,	1 Agriculture
Horton, Adah Murray,	*Silver Creek*,	2 Arts
Horowicz, Bruno Sigismund,	*New York City*,	1 Medical
Hosford, George Wheeler,	*Mexico*,	1 Agriculture
Hosmer, Robert Collyer,	*Chicago, Ill.*,	2 Arts
Houck, George Ernst,	*Buffalo*,	4 Philosophy
Houghton, Clinton Osborne,	*Potsdam*,	2 Arts
Houston, Levin James, Jr., A.B.,	*Stockton, Md.*,	3 Civil Eng.
Hovey, Newton Burr,	*Brockport*,	1 Law
Howard, Thomas,	*Osceola*,	1 Civil Eng.
Howe, James Robinson, Jr.,	*Brooklyn*,	1 Law
Howe, Samuel Purdy,	*New York City*,	2 Elect. Eng.

Howell, Herbert Halsey,	*Riverhead*,	2 Arts
Howland, Clinton Harvey,	*Trumansburg*,	3 Agriculture
Howland, Frank Clarence,	*Akron, O.*,	1 Mech. Eng.
Hoxie, Wyckoff,	*Union Springs*,	1 Law
Hoyt, Raymond Dudley,	*Cambridge*,	1 Mech. Eng.
Hubbard, Lewis Kellsey,	*Middletown, Conn.*,	1 Elect. Eng.
Huber, Frederick William,	*Baltimore, Md.*,	1 Civil Eng.
Huestis, Eliza Dorrance,	*Troy*,	2 Arts
Hueston, Jessie Elliott, B.S.,	*Brooklyn*,	Sp. Arts
Hufnagel, Frederick Bernhard,	*Mt. Vernon*,	4 Mech. Eng.
Hughes, John Howard,	*Jersey City, N. J.*,	1 Medical
Hulburd, Annabel Amanda,	*Brasher Falls*,	3 Arts
Hulburd, Lucius Sanford,	*Brasher Falls*,	1 Civil Eng.
Hull, John Donald,	*Scranton, Pa.*,	1 Mech. Eng.
Hulse, Shirley Clarke,	*Circleville, O.*,	1 Civil Eng.
Humphreys, Eva Frances,	*Beekmantown*,	1 Arts
Hunter, John Alexander, B.S..	*Washington, Ky.*,	4 Elect. Eng.
Hunting, Irving Adelbert, B.S.,	*Westerly, R. I.*,	2 Mech. Eng.
Huntington, Albert Henry,	*Little Utica*,	2 Arts
Huntington, Frederic Dan,	*Newburg*,	4 Mech. Eng.
Huntoon, Frank McElroy,	*Port Byron*,	2 Medical
Hunziker, Otto Fred,	*Zurich, Switzerland*,	4 Agriculture
Hurlbut, Hinman Barrett,	*Ogdensburg*,	3 Civil Eng.
Hustead, James Edgar,	*Uniontown, Pa.*,	1 Arts
Hutton, Robert Leroy,	*Ridgewood, N. J.*,	1 Arts
Hyde, Howard Elmer,	*Ithaca*,	4 Civil Eng.
Ihlder, John William,	*Yonkers*,	4 Science
Illmer, Louis, Jr.,	*Baltimore, Md.*,	2 Elect. Eng.
Inglehart, Hiram Fred,	*Watertown*,	2 Mech. Eng.
Inman, Grace Edith,	*Plattsburg*,	Sp. Arts
Inslee, Russell Gage,	*Newton, N. J.*,	3 Mech. Eng.
Isaacs, Julius,	*Brooklyn*,	2 Medical
Isham, Helen,	*Buffalo*,	1 Arts
Ives, Robert Austin,	*Ithaca*,	2 Mech. Eng.
Jachnowitz, Morris Arthur,	*New York City*,	1 Medical
Jackson, Frederic Ellis,	*Providence, R. I.*,	4 Architecture
Jagle, Elizabeth Carlisle,	*Brooklyn*,	2 Medical
James, Lewis Roscoe,	*Braddock, Pa.*,	1 Mech. Eng.
James, Robert Lyman,	*Saratoga*,	1 Arts
Janney, Walter Thompson, A.B.,	*Philadelphia, Pa.*,	2 Mech. Eng.
Janson, Christian William,	*Brooklyn*,	2 Medical
Jarvie, Margaret Scott,	*Brooklyn*,	2 Arts

Jennings, Fred Huntington,	*Moravia*,	2 Arts
Jetter, Clifford Hawkins,	*Greenport*,	3 Arts
Jewell, Charles Henry,	*Slaterville Springs*,	3 Veterinary
Jewell, Edith Winnifred,	*Portland, Me.*,	4 Philosophy
Jewett, Harold Frederick,	*Hoosick Falls*,	1 Mech. Eng.
Jewett, Leroy Howard,	*Fulton*,	2 Arts
Joannes, Francis Eugene Yeates,	*Green Bay, Wis.*,	4 Architecture
Johnson, Dwight Fenn,	*Wolcott*,	1 Medical
Johnson, Floyd Palmer,	*Walton*,	4 Arts
Johnston, Harold Eddy, B.A.,	*Troy*,	2 Elect. Eng.
Johnston, Harry Isaac,	*Ovid*,	2 Medical
Johnston, Richard Harry,	*Brooklyn*,	3 Arts
Joiner, Mortimer Eugene, A.B.,	*Pike*,	Jr. Law
Jones, Arthur Lucas,	*Ithaca*,	1 Veterinary
Jones, Harold Colbert,	*Chicago, Ill.*,	1 Mech. Eng.
Jones, Lydia B Independence,	*Plattsburg*,	2 Philosophy
Jones, Robert Billsborough,	*Whitesboro*,	1 Law
Joseph, Edward Nichols,	*Warwick*,	2 Elect. Eng.
Joslin, Mary Saviah,	*New York City*,	3 Medical
Joyce, Leo Harold,	*New York City*,	2 Medical
Judd, Everest Amasa,	*Batavia*,	1 Law
Juddell, Walter Wolf,	*Milwaukee, Wis.*,	4 Architecture
Juliand, Louis,	*Greene*,	3 Veterinary
Kahn, Robert Johnstone,	*Philadelphia, Pa.*,	2 Medical
Kaplan, David Michael,	*New York City*,	Sr. Medical
Karaline, Anna,	*New York City*,	1 Arts
Karpinski, Louis Charles,	*Oswego*,	2 Arts
Katz, Louise Waldman,	*Wilmington, N. C.*,	4 Science
Keeler, John Mills, Jr.,	*Baltimore, Md.*,	1 Arts
Keeler, Lynn Huntington,	*Moravia*,	3 Arts (1 Medical)
Keely, Royal Rockwood,	*Lawrence, Kan.*,	4 Elect. Eng.
Keene, William James,	*Chicago, Ill.*,	1 Civil Eng.
Kees, Frederica Christiana,	*Newark, N. J.*,	1 Arts
Kehl, Lester Henry,	*Boyertown, Pa.*,	4 Mech. Eng.
Keller, Arthur Ripont,	*Buffalo*,	1 Civil Eng.
Kellerman, Karl Frederic,	*Columbus, O.*,	4 Science
Kelly, Eva Florence,	*Hoboken, N. J.*,	4 Science
Kelley, Joseph Thomas, Jr.,	*Washington, D. C.*,	2 Elect. Eng.
Kelly, William Duncan Joseph,	*Jersey City, N. J.*,	Sr. Law
Kelsey, Charles Albert,	*Green Island*,	3 Mech. Eng.
Kelsey, Charles Everett,	*N. Tonawanda*,	1 Agriculture
Kemball, Anna Loring,	*Washington, D. C.*,	2 Arts

Kemp, William James,	*Troy*,	1 Mech. Eng.
Kendall, Hayward Hutchinson,	*Cleveland, O.*,	4 Science
Kennedy, William Mark,	*Oberlin, O.*,	2 Architecture
Kent, Ralph Sherlock,	*Franklinville*,	2 Arts
Kerlin, Ward Dix,	*Brooklyn*,	3 Mech. Eng.
Kern, James Valentine,	*New York City*,	2 Medical
Kerr, Lydia Ethelyn,	*Titusville, Pa.*,	2 Philosophy
Ketcham, Cornelius Starlyn Newel,	*Oswego*,	1 Elect. Eng.
Ketchum, Dickerson Albert,	*Middletown*,	4 Civil Eng.
Keyes, Jay Gould,	*Gowanda*,	1 Arts
Keyes, Marion Alvah, Jr.,	*Mayville*,	Sr. Law
Kiddie, John,	*Van Anda, B. C.*,	1 Civil Eng.
Kieb, Raymond Francis Charles,	*Lowville*,	2 Arts
Kilbane, Edward Francis,	*New York City*,	3 Medical
Kilbourne, Byron Albert,	*Liberty*,	2 Arts
Kilburn, Lyman Annise,	*Gowanda*,	1 Law
King, Edwin Parker,	*Painesville, O.*,	1 Mech. Eng.
King, Herbert Paul,	*Trumansburg*,	4 Agriculture
Kingsbury, Benjamin Freeman, A.B., M.S., Ph.D.,	*Defiance, O.*,	1 Medical
Kingsley, Charles Francis,	*New Rochelle*,	4 Mech. Eng.
Kingston, Augustiue Thomas Vincent, A.B.,	*New York City*,	2 Medical
Kinne, James Blaine,	*Ovid*,	1 Law
Kinney, John Aplin,	*Jamestown*,	2 Arts
Kinney, Jay P,	*Snowdon*,	2 Arts
Kinsella, Michael Joseph,	*Buffalo*,	Sr. Law
Kinsey, Eugene Abbott,	*La Salle*,	2 Elect. Eng.
Kinsley, William Wirt, Jr.,	*Falls Chnrch, Va.*,	3 Elect. Eng.
Kirkpatrick, George Dallas Dixon,	*Philadelphia, Pa.*,	1 Civil Eng.
Kittredge, Joseph Powers,	*Rochester*,	2 Elect. Eng.
Kleinbaum, Edward,	*New York City*,	2 Medical
Klemann, George Francis,	*New York City*,	1 Medical
Klemme, Wilhelm,	*Ithaca*,	1 Forestry
Kline, William Arthur,	*Amsterdam*,	1 Law
Klinkhart, Amos John,	*Canajoharie*,	3 Architecture
Klock, Claude William,	*Canajoharie*,	4 Arts
Klock, Frederic Adam,	*St. Johnsville*,	2 Mech. Eng.
Kluepfel, Philip Alexander,	*Utica*,	1 Arts
Knapp, Clarence Hiram,	*Saratoga Springs*,	1 Law
Knapp, John,	*Etna*,	1 Veterinary
Knauss, Charles William,	*New York City*,	2 Medical

Knipe, Norman Leslie,	*Norristown, Pa.*,	4 Philosophy (1 Medical)
Knox, Herbert,	*Connellsville, Pa.*,	2 Elect. Eng.
Knox, Harry Mason,	*Canton*,	Sp. Agriculture
Koehler, Leopard Jacob,	*New York City*,	2 Medical
Koerner, Raymond White,	*Buffalo*,	1 Arts
Kohler, George,	*Mariner's Harbor*,	1 Mech. Eng.
Kommel, Louis Moses,	*New York City*,	1 Medical
Koon, Sidney Graves,	*Auburn*,	2 Mech. Eng.
Kraatz, Charles Henry,	*Akron*,	1 Agriculture
Kramer, George Howard,	*Dayton, O.*,	2 Elect. Eng.
Krebs, August Sonnin,	*Wilmington, Del.*,	4 Mech. Eng.
Krebs, Matilda,	*Johnstown, Pa.*,	Sp. Arts
Kugler, Clarence Blyler,	*Philadelphia, Pa.*,	1 Arts
Kugler, William Boothby,	*Philadelphia, Pa.*,	1 Arts
Kunze, Emma Gertrude,	*Philadelphia, Pa.*,	3 Arts
Kunze, Edward Joseph,	*Newark, N. J.*,	3 Mech. Eng.
Kuschke, Harry Travor,	*Plymouth, Pa.*,	1 Elect. Eng.
Kyle, Edwin Jackson, B.S.A.,	*Kyle, Texas*,	2 Agriculture
Kuyle, Thompson Galbraith,	*Ithaca*,	2 Medical
Lamb, Henry Cleaveland,	*Cooperstown*,	1 Mech. Eng.
LaMont, Clarence Booth,	*Ithaca*,	4 Mech. Eng.
Landis, Charles William,	*Philadelphia, Pa.*,	4 Civil Eng.
Landsman, Arthur Armin, Ph.G.,	*New York City*,	Sr. Medical
Lang, George Stuart,	*Corning*,	2 Elect. Eng.
Langston, Samuel Mac Donald,	*Camden, N. J.*,	1 Mech. Eng.
Lara, Edward Maurice,	*Powhatan, Md.*,	1 Civil Eng.
Larkin, George Andrew,	*Olean*,	4 Arts
Lathrop, Ida May,	*Torrington, Conn.*,	Sp. Arts
Lauder, Andrew Gildert,	*Binghamton*,	1 Agriculture
Lauderdale, Charles A.,	*Geneseo*,	2 Elect. Eng.
Lauer, William George,	*Brooklyn*,	2 Philosophy
Lawrence, Elliot Wagstaff,	*Rochester*,	1 Medical
Lawrence, Morton Robert,	*Skaneateles*,	2 Civil Eng.
Lawson, William Pinckney,	*Montclair*,	1 Arts
Layton, George Monroe,	*Towanda, Pa.*,	2 Mech. Eng.
Lee, Herbert Blanchard, A.B.,	*Buffalo*,	Jr. Law
Lee, John McClellan,	*Pittsburg, Pa.*,	1 Elect. Eng.
Lee, Porter Raymond,	*Buffalo*,	1 Arts
Lefferts, Florence Daisy,	*Gloversville*,	1 Arts
Lessels, Clarence,	*Troy*,	2 Elect. Eng.
Leupp, Harold Lewis,	*Washington, D. C.*,	1 Arts
Levi, David Rich,	*Buffalo*,	2 Arts

Levy, Isaac,	*Elmira*,	2 Arts
Levy, Abraham Arron,	*New York City*,	1 Medical
Lewin, Samuel Aaron,	*New York City*,	2 Medical
Lewis, Carrie May,	*Catskill*,	1 Arts
Lewis, Nellie Marion,	*Akron*,	3 Arts
Lewitt, Abram,	*New York City*,	Sr. Medical
Lichtenstein, Walter Garfield,	*Rochester*,	Jr. Law
Licht, Louis Frederick, Ph.G.,	*Gundershoff, Germany*,	1 Medical
Lieder, Frederick Wm. Chas.,	*Brooklyn*,	1 Arts
Lies, Eugene Theodore,	*Buffalo*,	4 Science
Lindley, Paul Cameron,	*Pomona, N, C.*,	Sp. Agriculture
Lindsay, James Batson,	*Milwaukee, Wis.*,	1 Arts
Lipphardt, Charles E,	*Martin's Ferry, O.*,	1 Mech. Eng.
Lippman, Thomas Charles, Ph.G.,	*Sag Harbor*,	1 Medical
Little, Alden Howe,	*St. Louis, Mo.*,	1 Law
Little, Hiram Murray,	*Cleveland, O.*,	4 Science
Little, Tully Bascom,	*Cleveland, O.*,	3 Arts
Livingston, Elizabeth Hanford,	*Brooklyn*,	3 Medical
Livingston, Robert R,	*Kingston*,	4 Mech. Eng.
Lock, Elizabeth, A.B.,	*Barbourville, Ky.*,	4 Arts
Lockwood, Frank Arthur,	*Zurich, Switzerland*,	4 Mech. Eng.
Lew, Elias Avery,	*New York City*,	1 Arts
Lohmann, Ralph Waldo,	*Oakland, Cal.*,	1 Elect. Eng.
Lonergan, John Francis,	*Albany*,	1 Law
Lonergan, Philip Edward,	*Elmira*,	Jr. Law
Lonergan, Philip Thomas,	*Richmond Hills, Pa.*,	Sp. Law
Lonergan, Richard Joseph,	*Scranton, Pa.*,	1 Law
Long, Guy Edwin,	*Wilkes-Barre, Pa.*,	1 Civil Eng.
Longbothum, Marion Tappen,	*Huntington*,	2 Arts
Longnecker, Frances Clare,	*Columbia, Pa.*,	2 Arts
Longnecker, Benjamin Franklin,	*Delta, O.*,	1 Arts
Longyear, Howard Munro,	*Marquette, Mich.*,	1 Forestry
Loos, Charles Louis, Jr.,	*Dayton, O.*,	3 Mech. Eng.
Losee, Mace Anderson,	*Livingstonville*,	2 Medical
Love, George William,	*Buffalo*,	2 Arts
Lovejoy, Harry Otis,	*Buffalo*,	3 Mech. Eng.
Loveland, Frank DeWolf,	*New York City*,	2 Mech. Eng.
Lowary, Oakman Hess,	*Wellsville, O.*,	2 Arts
Lowell, Mary Chandler, M.D,,	*Foxcroft, Me.*,	1 Law
Lowenthal, Sidney S.,	*Rochester*,	3 Arts
Lubman, Max,	*New York City*,	Sr. Medical
Ludwig, Robert Francis,	*Chicopee, Mass.*,	4 Arts (1 Medical)

Lueder, Charles Augustus,	*Wilkes-Barre, Pa.*,	1 Veterinary
Lundell, Gustave Ernst Fred,	*Poughkeepsie*,	1 Arts
Lusk, Clayton Riley,	*Chenango Forks*,	1 Law
Lybrook, David Johnson,	*Stuart, Va.*,	Sp. Agriculture
Lyon, Anna Webb,	*Kings Ferry*,	4 Arts
Lyon, Harry Hopkins,	*Buffalo*,	3 Elect. Eng.
Lyon, Layton Stearns,	*Williamsport, Pa.*,	1 Arts
Lysaught, Bella Benadette,	*New York City*,	3 Medical
McAdam, John Vaughan,	*St. Paul, Minn.*,	3 Mech. Eng.
Macbeth, James Hamilton,	*Buffalo*,	2 Law
MacBride, Archie Edwards,	*Deckertown, N. J.*,	3 Arts
Macbride, Beatrice Clark,	*New York City*,	1 Arts
McBride, Jessie,	*Davenport, Iowa*,	2 Arts
Macbride, Ruth Kirker,	*New York City*,	3 Arts
McCague, David John,	*New York City*,	1 Medical
McCann, Helen Regenetta,	*Ilion*,	4 Arts
McClain, Harry Richard,	*St. Louis, Mo.*,	1 Law
McClary, Samuel, 3rd,	*Wilmington, Del.*,	4 Science (1 Medical)
McCloskey, Alice Gertrude,	*Saratoga Spa.*,	Sp.Agriculture
McClure, Everette Lothard,	*Buffalo*,	2 Arts
McClure, Mary Frances,	*Philadelphia, Pa.*,	4 Science
McCollum, Francis Xavier,	*Lockport*,	1 Law
McCormick, Bradley Thomas,	*Brookland, D. C.*,	1 Elect. Eng.
McCracken, George Lewis, M.E., B.P.,	*Twin Oaks, Pa.*,	1 Arts
McCracken, Mary, B.E., M.E.,	*Twin Oaks, Pa.*,	Sp. Arts
McCrea, William Miller,	*Salt Lake City, Utah*,	Sr. Law
McCreary, Edward Ansel,	*Cohoes*,	4 Arts
Macdonald, Henry Gordon,	*Troy*,	3 Mech. Eng.
McDonald, Robert Francis,	*New York City*,	3 Medical
McDonald, Robert Stevenson, Ph.B.,	*London, Ont.*,	2 Medical
McEntee, Charles,	*Kingston*,	Sp. Agriculture
MacGillivray, Alexander Dyer,	*Ithaca*,	4 Philosophy
McGinity, John Thomas,	*Green Island*,	1 Mech. Eng.
McGonegal, George Arthur,	*Rochester*,	2 Arts
McGovern, John Thomas,	*Albany*,	Sr. Law
McGrath, Jean Cecile,	*Philadelphia, Pa.*,	4 Arts
McGraw, Frank Uberhast,	*New York City*,	Sr. Law
McGunnegle, James,	*Meadville, Pa.*,	2 Mech. Eng.
Mack, Harry Eli,	*Marathon*,	3 Civil Eng.
Mack, Julia Whiton,	*Ithaca*,	3 Arts
Mack, Wilfred Whaley,	*New York City*,	2 Arts
McKay, Maurice Parker,	*Ithaca*,	3 Elect. Eng.

McKee, John Warren, B.S.,B.P.,	*Sheldon, Ind.*,	1 Arts
McKenzie, George Park,	*Rochester*,	Sr. Law
McKinney, Francis William,	*New York City*,	1 Arts
McKoon, Morgan Lane,	*Long Eddy*,	1 Arts
McLaughlin, Grant Brown, A.B.,	*Philadelphia, Pa.*,	2 Civil Eng.
McLaughlin, John Edward,	*Skaneateles*,	Jr. Law
McLean, John Howell, Jr., A.B., M.D.,	*Fort Worth, Texas*,	3 Medical
McLeary, Samuel Harvey,	*San Antonio, Texas*,	2 Elec. Eng.
MacLeod, Murdock Douglas,	*Valley Field, P. E. I., Can.*	1 Med.
McLeod, Norman Donald,	*Caledonia*,	3 Agriculture
McMahan, Herbert Brant,	*Anderson, Ind.*,	2 Arts
McMeekan, David, Jr.,	*Brooklyn*,	1 Mech. Eng.
McMenamin, Thomas Daniel,	*Bath*,	Sr. Medical
McMenamy, Helen Eaton,	*Catskill*,	4 Science
MacMillan, Mary, A.B.,	*New York City*,	2 Medical
McNamara, Agnes Keenan,	*Binghamton*,	1 Arts
Macomber, George Stanley,	*Perry*,	3 Elect. Eng.
McPherson, Henry Hume,	*Bergen*,	1 Mech. Eng.
McRae, Frank George,	*Schuylerville*,	1 Elect. Eng.
Magill, William Henry, Ph.B.,	*Providence, R. I.*,	1 Medical
Maginnis, Edward Arthur,	*Chicago, Ill.*,	1 Mech. Eng.
Maginnis, Benjamin,	*Chicago, Ill.*,	3 Science
Magoffin, Edward Thompson,	*North Tonawanda*,	4 Science
Magoffin, James Aaron,	*North Tonawanda*,	2 Arts
Maider, Wesley Henry,	*Phoenix*,	Jr. Law
Malisoff, Abraham,	*New York Ctty*,	Sr. Medical
Malone, George Edward,	*Spencerport*,	1 Civil Eng.
Mandel, Louis Jerome,	*New York City*,	Sr. Medical
Manfred, Maud Ethel,	*Mansfield, O.*,	4 Arts
Manisof, Joseph Jerome,	*New York City*,	Sr. Medical
Manley, Lynn Sylvester,	*Elmira*,	Jr. Law
Mann, Katherine Elizabeth,	*Owatuma, Minn.*,	2 Arts
Mann, Manley Burr,	*Middleburg*,	1 Law
Marcy, John, Jr.,	*Greene*,	Jr. Law
Marsh, Charles Mercer, Jr.,	*Morris Plains, N. J.*,	2 Elect. Eng.
Martin, Frank,	*Ithaca*,	4 Elect. Eng.
Martin, Isabel,	*Auburn*,	1 Arts.
Martin, James Francis, A.B.,	*New York City*,	2 Medical
Martin, Maude Winifred,	*Cooperstown*,	4 Philosophy
Martinez, Claudio J,	*Vera Cruz, Mexico*,	3 Mech. Eng.
Marvin, Ralph Erwin,	*Muskegon, Mich.*,	1 Mech. Eng.
Marvin, Ross Gilmore,	*Elmira*,	1 Elect. Eng.

Marx, August,	*Toledo, O.,*	1 Mech. Eng.
Marx, Erwin,	*Toledo, O.,*	3 Civil Eng.
Massey, Walter Griffith,	*Watertown,*	3 Mech. Eng.
Massie, James Hughes,	*Colborne, Ont., Can.,*	3 Mech. Eng.
Mason, Herbert Delavan,	*Glens Falls,*	Sr. Law
Mastin, Elma Lenore,	*Genoa,*	4 Philosophy
Mastin, Francis Wells,	*Piermont,*	3 Elect. Eng.
Mather, William Alvah,	*Belleville,*	Sp. Agriculture
Mathewson, Edward Simon,	*Cortland,*	1 Medical
Mattice, Paul Brown,	*Middleburg,*	1 Law
de Mauriac, Guy Miremont,	*New York City,*	1 Mech. Eng.
Maxson, Cullen B,	*Jersey City, N. J.,*	1 Medical
Maxwell, Max Carson,	*Washington, D. C.,*	4 Mech. Eng.
May, Alice Ruth,	*Rochester,*	3 Architecture
Mayer, Ethel, A.B.,	*New York City,*	3 Medical
Maytham, Frank,	*Buffalo,*	4 Science
Meacham, Leslie James,	*Adamsville, Mich.*	2 Medical
Meeder, Alpha Lillian,	*Forestville,*	1 Arts
Meeker, Fred North,	*Hannibal,*	2 Arts
Mercy, Emilie,	*Newark, N. J.,*	1 Arts
Merrell, Caroline Wallace,	*Philadelphia, Pa.,*	1 Arts
Merrill, Henry Putnam, 2d,	*Portland, Me.,*	Sr. Medical
Merrill, George Bartges,	*Akron, O.,*	1 Mech. Eng.
Merrill, Whitney,	*Broooklyn,*	1 Mech. Eng.
Metcalf, William, Jr.,	*Pittsburg, Pa.,*	Jr. Law
Meyers, Clarence William,	*New York City,*	2 Civil Eng.
Meysenburg, Frederick, William,	*Chicago, Ill.,*	3 Arts
Michael, William Cutter,	*Halstad, Minn.,*	1 Mech. Eng.
Middleton, Joseph Henry,	*Troy,*	1 Civil Eng.
Mider, Carrol Arthur,	*Lowville,*	3 Arts
Millar, Roger Alexander,	*Lockport,*	4 Mech. Eng.
Miller, Bruce McCutcheon,	*Allegheny, Pa.,*	1 Civil Eng.
Miller, John Strother,	*Washington, D. C.,*	3 Arts
Miller, Louise,	*Dayton, O.,*	1 Agriculture
Miller, Walter Fobes,	*Chicago, Ill.,*	1 Civil Eng.
Miller, William Harrison,	*Ithaca,*	1 Arts
Millington, George Joseph,	*Buffalo,*	3 Elect. Eng.
Mills, Chester Lee,	*Hume,*	1 Arts
Mills, Eugene Frederic,	*Brooklyn,*	2 Medical
Mills, Frank Smith,	*Andover, Mass.,*	3 Arts
Miltimore, Dean, B.S.,	*Catskill,*	2 Medical
Miner, James Henry,	*Warrensville, O.,*	3 Civil Eng.

Mintz, Aaron Girard, *Ithaca*, Sr. Law
Mirick, Alfred Stowe, *Lyons*, 3 Civil Eng.
Mislig, Michael, Ph.G., *Vilna, Russia*, 2 Medical
Mitchell, Louis Adolph, *Utica*, 2 Civil Eng.
Mitchell, William John, *Ithaca*, 2 Veterinary
Mix, Charles Melvin, A.B., *Friendship*, 2 Medical
Mock, Gertrude Estelle, *Rochester*, 3 Arts
Moffatt, Walter, *New York City*, 3 Arts
Mohan, John Francis, *Allegheny, Pa.*, 1 Medical
Mollard, Charles Ellis, *Skaneateles*, 3 Civil Eng.
Moller, Albert William, *Brooklyn*, 1 Civil Eng.
Montgomery, James Joseph, *Watertown*, 2 Elect. Eng.
Mood, Inez Lenore, *Newfield*, 1 Medical
Moody, Mary Grace, *New Haven, Conn.*, 4 Arts (1 Medical)
Moody, Virginius Daniel, *Norfolk, Va.*, 4 Elect. Eng.
Moody, William Falley, *New Castle, Pa.*, 2 Mech. Eng.
Moon, Claude Elton, *Canastota*, 2 Science
Moon, Truman Jesse, *Potsdam*, 1 Arts
Moore, Robert James, *Lockport*, Jr. Law
Morehouse, Frank Delbert, *Glens Falls*, Sr. Law
Morey, Stephen Roy, *Syracuse*, 1 Arts
Morgan, Beulah Genevieve, *Cuba*, 4 Arts
Morgan, Llewellyn, *Brooklyn*, 4 Mech. Eng.
Morgan, William Montgomery, *Seaford, Del.*, 1 Agriculture
Morgan, William Osgood, *Pittsfield, Mass.*, 4 Science
Morrisey, Thomas Wenceslaus, *Caledonia*, 4 Arts
Morrison, Archibald Bostwick, Jr., *Geneva*, 3 Mech. Eng.
Morrison, Clarke John, Phar.D., *Washington, D. C.*, 3 Elect. Eng.
Morrison, James, *Cincinnati, O.*, 1 Mech. Eng.
Morrison, Olive Butler, *Washington, D. C.*, 1 Arts
Morrison, William Harper, Jr., *Indianapolis, Ind.*, 3 Arts
Morse, Raymond Parmelee, *Buffalo*, 1 Mech. Eng.
Moses, Chester Davis, M.E., *Cortland*, 2 Medical
Mosher, Edgar Seeber, *Auburn*, 4 Arts
Moskowitz, Abraham, *Brooklyn*, 1 Medical
Mothershead, John Leland, *Indianapolis, Ind.*, 1 Mech. Eng.
Mott, Charles Earle, *Oneida*, 1 Architecture
Mount, Louis Burgh, *Troy*, 1 Arts (1 Medical)
Moyer, John Clarence, *Norristown, Pa.*, 4 Mech. Eng.
Mueller, George Henry, Jr., B.S. in M.E., *Chicago, Ill.*, 4 Mech. Eng.
Mulholland, Joseph Augustus, A.B., *New York City*, Sr. Medical
Mulden, Rudolf Edward, *Washington, D. C.*, 2 Mech. Eng.

Mulford, Walter, B.S.A.,	*Ithaca*,	3 Forestry
Mundy, Roswell Flowers,	*Chicago, Ill.*,	1 Mech. Eng.
Munn, Ida Elise,	*Newark, N. J.*,	1 Arts
Munson, Arley Isabel,	*Brooklyn*,	2 Medical
Murray, Charles Edward,	*Wilkes-Barre, Pa.*,	1 Elect. Eng.
Murray, Elsie,	*Athens, Pa.*,	2 Arts
Musgrove, John Culver,	*Pittsfield, Mass.*,	1 Mech. Eng.
Musson, Lucia Birdsall,	*Binghamton*,	1 Arts
Myers, Burton Dorr, Ph.B.,	*Attica, O.*,	2 Medical
Myers, Curtis Clark,	*Buffalo*,	1 Mech. Eng.
Nalitsky, David Isaac,	*Bayonne, N. J.*,	Sr. Medical
Nalle, Ewell,	*Austin, Texas*,	3 Arts
Nathan, Marvin,	*Buffalo*,	4 Arts
Neave, Pierson Mitchell,	*Dresden, O.*,	2 Mech. Eng.
Needham, George Gordon, A.M., M.D., Ph.G.,	*New York City*,	Sp. Medical
Neely, Robert Johnson, B.S. in M.E.,	*Portsmouth Va.*,	3 Elec. Eng.
Nell, Edwin Brydon,	*Rochester*,	1 Arts
Nelson, Staley Lyman,	*Hinsdale*,	1 Medical
Nerney, May Childs,	*Green Island*,	1 Arts
Nevin, William Harbaugh,	*Philadelphia, Pa.*,	4 Mech. Eng.
Newbury, Edwin Henry,	*Brooklyn*,	3 Mech. Eng.
Newbury, Frank Davies,	*Brooklyn*,	3 Mech. Eng.
Newkirk, Edgar Daniel,	*Canastota*,	Sp. Mech. Eng.
Newman, Grace,	*Brooklyn*,	1 Medical
Newman, Thomas S,	*Hopedale, Mass.*,	1 Civil Eng.
Newton, Charles Edgar Jr.,	*Brooklyn*,	4 Science
Newton, Thomas Lee,	*Salamanca*,	Sr. Law
Nichols, Ellen Jane,	*Buffalo*,	2 Arts
Nicholls, William Garland,	*Cohoes*,	2 Mech. Eng.
Niles, Walter Lindsay,	*Lebanon*,	2 Medical
Nolan, James Bennett,	*Reading, Pa.*,	4 Science
Norman, Thomas Grosvenor,	*Lockport*,	Jr. Law
Normile, Mary,	*Binghamton*,	2 Arts
Northrop, Hamilton Fay,	*Newburgh*,	1 Mech. Eng.
Northrop, Luella,	*Forest Home*,	3 Arts
Northrup, Lewis Mulford,	*Whitney's Point*,	1 Mech. Eng.
Norton, Edward Sylvester,	*Clifton*,	1 Medical
Norton, William John,	*Baltimore, Md.*,	2 Mech. Eng.
Norwood, Harry Yorke,	*Allegany*,	1 Mech. Eng.
O'Brien, Abigail Adaline,	*Forestport*,	2 Arts
O'Daniel, Howard Leighton,	*Ithaca*,	2 Arts

O'Day, Sylvester Francis,	*Binghamton*,	2 Arts
Odell, Howard Bailey,	*Cleveland, O.*,	2 Mech. Eng.
Offutt, Mitchem Webb,	*Georgetown, Ky.*,	2 Elect. Eng.
O'Flaherty, Ellen Pembroke,	*Hartford, Conn.*,	3 Medical
Ogden, Robert Morris,	*Binghamton*,	4 Science
Ogden, Warren Greene,	*Washington, D. C.*,	3 Mech. Eng.
Okerstrom, Ouiga Edith,	*Denver, Colo.*,	1 Arts
Oldberg, Virgil,	*Chicago, Ill.*,	2 Mech. Eng.
Oldham, George Ashton,	*Cleveland, O.*,	2 Arts
Olin, Herbert Scott,	*Watertown*,	4 Architecture
Oliphant, James Norris,	*Brooklyn*,	3 Elect. Eng.
Olmstead, Albert Ten Eyck,	*Troy*,	2 Arts
Olney, Olive Belle,	*Weedsport*,	3 Science
Olsen, Thorsten Yhlen,	*Philadelphia, Pa.*,	2 Elect. Eng.
O'Malley, James,	*Buffalo*,	3 Arts
O'Neill, James George,	*Geneva*,	1 Arts
Ormsby, Margaret Louise,	*Norwich*,	1 Medical
Ortego, Emilio Daniel,	*Habana, Cuba*,	1 Elect. Eng.
Osame, Sanji,	*Okayama, Japan*,	3 Mech. Eng.
Osborne, Alfred Barber,	*Oneonta*,	1 Civil Eng.
Osborne, Charles Lester,	*Jersey City, N. J.*,	1 Medical
Osborne, Curtis Ralph,	*Athens, Pa*	1 Elect. Eng.
Otis, James Cornish,	*St. Paul, Minn.*,	3 Arts
Overton, Frederic Stanley,	*N. Plainfield, N. J.*,	1 Mech. Eng.
Overton, Paul Vincent,	*San Antonio, Tex.*,	Sr. Law
Owen, Ira June,	*Oak Park, Ill.*,	1 Mech. Eng.
Pacheco, Joviano Augusto d'Amaual,	*S. Carlos, Brazil*,	1 Arts
Page, Sophy Ellen,	*Bethany*,	2 Medical
Paine, David,	*Troy, Pa.*,	2 Arts
Palen, Lewis Stanton,	*Newport News, Va.*,	4 Arts
Palmer, Horace Wilbur,	*Coxsackie*,	4 Philosophy
Palmer, Robert Wayne,	*Seneca Falls*,	1 Arts
Palmer, William Hailes,	*Mechanicsville*,	2 Medical
Park, Mary Beeler,	*Speedville, Ky.*,	1 Arts
Parker, Earl Daniel,	*Pasadena, Cal.*,	2 Mech Eng.
Parker, Hiram Yorke,	*Ithaca*,	1 Arts
Parker, Jason Samuel,	*Lyons*,	2 Medical
Parry, Elizabeth,	*New York Mills*,	3 Arts
Parsons, William Nelson,	*Pittsfield, Mass.*,	Sp. Mech. Eng.
Pate, Carlton Overton,	*Brooklyn*,	4 Mech. Eng.
Patterson, John Johnson,	*Dayton, O.*,	1 Mech. Eng.
Patterson, John Rea,	*Pittsburg. Pa.*,	1 Arts

Patterson, William Wallace,	*Pittsburg, Pa.*,	4 Science
Pattison, Roy Stuart,	*Mayville*,	1 Elect. Eng.
Pauling, Walter Albert,	*New York City*,	Sr. Law
Payne, Charles Rockwell,	*Wadhams Mills*,	2 Arts
Payne, William Johnston, A.M.,	*Georgetown, Ky.*,	2 Elect. Eng.
Pearson, Henry, B.S.,	*Tuscaloosa, Ala.*,	1 Medical
Pearson, John Calder,	*Ithaca*,	1 Arts
Peck, Ellery Newell,	*Ithaca*,	2 Arts
Peck, Harrie Waterman, Ph.B.,	*West Hartford, Conn.*,	4 Elect. E.
Peck, Ross Sanders,	*Brookton*,	1 Mech. Eng.
Peck, William Tracy,	*Bristol, Conn.*,	2 Civil Eng.
Peckham, William Nash,	*Buffalo*,	2 Arts
Peirson, Mabel Burnham,	*Brockport*,	3 Science
Pellet, William Waldo,	*Watkins*,	Jr. Law
Pendergrass, Robert Allen,	*Saratoga Spa.*,	4 Civil Eng.
Pendleton, Frank,	*Philadelphia, Pa.*,	2 Elect. Eng.
Penfield, Clara May,	*Norwalk, O.*,	1 Arts
Penfield, George Wilfred,	*New Britain, Conn.*,	4 Civil Eng.
Penney, Albert Silas,	*Adams*,	3 Elect. Eng.
Pennock, Frank Rheiner,	*Chittenango*,	1 Law
Perkins, Darwin Clare,	*Alexander*,	1 Arts
Perkins, Fred Clark,	*N. Townsend, Mass.*,	2 Mech. Eng.
Perrin, Ruth Wilder,	*Fredonia*,	4 Philosophy
Perrine, Leroy Levi,	*Wallkill*,	4 Philosophy
Persons, James White,	*East Aurora*,	1 Law
Persons, Richard Sandford,	*East Aurora*,	4 Science
Peterman, Albert Edward,	*Buffalo*,	4 Philosophy
Pettengill, Ben Miller,	*Holley*,	4 Mech. Eng.
Pettis, Clifford Robert,	*Delancy*,	3 Forestry
Pettit, Irving Coles,	*Baldwins*,	1 Elect. Eng.
Pettit, James Harvey,	*Shortsville*,	4 Philosophy
Petty, Alfred Smith,	*Bellport*,	2 Arts
Peuser, Peter Clarence,	*Scranton, Pa.*,	1 Arts
Pfeiffer, William,	*Brooklyn*,	1 Medical
Pharr, Eugene Albertus, A.B.,	*Berwick, La.*,	3 Mech. Eng.
Phelps, Charles Austin,	*Sackets Harbor*,	Sr. Law
Phelps, Walter Edwin,	*Brooklyn*,	Jr. Law
Philbrick, Alan Edgar, Ph.B.,	*New York City*,	4 Elect. Eng.
Phillips, Adams,	*Thornton*,	2 Agriculture
Phillips, Mary Antoinette,	*Fulton*,	3 Arts
Phillips, Milton Jonathan,	*Bristol*,	1 Mech. Eng.
Pierce, Floyd Andrew,	*Cuba*,	1 Veterinary

Pierson, Farrand Baker, A.B.,	*Brooklyn*,	1 Medical
Pierson, John Corbin,	*New York City*,	2 Medical
Pike, William Henry,	*Groton*,	2 Arts
Pilat, Carl Francis,	*Sing Sing*,	3 Agriculture
Pinco, Charles Nathaniel,	*Brooklyn*,	1 Civil Eng.
Pistor, George Emil John,	*Newark, N. J.*,	3 Civil Eng.
Pitcairn, Robert,	*Pittsburg, Pa.*,	1 Mech. Eng.
Planz, Reuben Christopher,	*Buffalo*,	2 Architecture
Platt, Charles Carsten,	*Brooklyn*,	Jr. Law
Plumb, Harold Blair,	*Utica*,	3 Elec. Eng.
Pohl, George Francis,	*New York City*,	3 Civil Eng.
Pollard, Gurdon Tyler,	*Baltimore, Md.*,	1 Mech. Eng.
Pomeroy, Fred Lawrence, Jr.,	*Buffalo*,	2 Elec. Eng.
Poor, Ben Perley,	*Burlington, Iowa*,	1 Arts
Porter, Frank Scouller,	*Buffalo*,	Sr. Law
Potts, Clyde,	*DesMoines, Iowa*,	1 Civil Eng.
Pounds, Thomas Canfield,	*Breesport*,	2 Medical
Powelson, Louise,	*Middletown*,	2 Arts
Powley, Edward Harrison,	*Ransomville*,	2 Mech. Eng.
Pratt, Albert Houghton,	*Brooklyn*,	3 Arts
Pratt, Lee Sheldon,	*Sherman*,	2 Arts
Pratt, Marion,	*Syracuse*,	4 Arts
Pratt, Ransom,	*Elmira*,	1 Mech. Eng.
Prendergast, James Hunt,	*Chautauqua*,	Jr. Law
Price, Albert Stanley,	*Jamestown*,	3 Arts
Price, Lorenzo Guernsey,	*Hudson*,	2 Arts
Price, Mary Hiscock,	*Newark, N. J.*,	Sp. Arts
Proctor, Percy Jr.,	*Oakland, Md.*,	Sp. Agriculture
Proctor, Ralph Fenno,	*Newtonville, Mass.*,	1 Civil Eng.
Provost, Franz Victor Marbach,	*Brooklyn*,	Sr. Law
Pruyn, William Cool,	*Glens Falls*,	1 Arts
Puff, Louise,	*Ithaca*,	3 Arts
Puig, Louise Margarita,	*Brooklyn*,	3 Arts
Purcell, Francis Keon,	*Watertown*,	2 Arts
Purcell, Henry, Jr.,	*Watertown*,	1 Arts
Purcell, Stuart,	*Baltimore, Md.*,	3 Civil Eng.
Purcell, William Gray,	*Oak Park, Ill.*,	1 Architecture
Putnam, Russell Benjamin, B.S.,	*Abbeville, La.*,	2 Mech Eng.
Puyals, Joseph Hill,	*Guanabacoa, Cuba*,	2 Elect. Eng.
Quackenbush, Ernest Linwood,	*Warwick*,	4 Arts
Quackenbush, Paul Henry,	*Herkimer*,	1 Mech Eng.
Quaife, Francis Wilbur,	*Ilion*,	1 Law

Quick, Howard Ludlow,	*Brooklyn*,	2 Mech. Eng.
Quigley, James Knight,	*Trumansburg*,	1 Medical
Quigley, James Patrick,	*Killbuck*,	Jr. Law
Quinn, Edward James,	*Great Neck*,	1 Civil Eng.
Rachlin, Nathan Hale,	*Brooklyn*,	Sr. Medical
Raines, George Richmond,	*Canandaigua*,	Sr. Law
Rally, Charles Germain,	*Albany*,	2 Elect. Eng.
Ramsdell, Thomas Spencer,	*Housatonic, Mass.*,	1 Mech. Eng.
Rand, Benjamin G,	*N. Tonawanda*,	1 Mech. Eng.
Randall, Clarance Elmer,	*S. W. Oswego*,	2 Civil Eng.
Randall, Frederic Mason,	*Ripley*,	4 Science
Randolph, John,	*Niagara Falls*,	1 Arts
Rands Harold Alva,	*Oregon City, Ore.*,	3 Science
Raphaelson, Samuel Joshua, B.S.,	*New York City*,	1 Medical
Rawson, William Barrow,	*Cleveland, O.*,	2 Mech. Eng.
Ray, Fred Donald,	*Pt. Huron, Mich.*,	2 Civil Eng.
Raymond, Ralph,	*Brooklyn*,	4 Elect. Eng.
Rea, Charles Lee,	*Carrollton, Mo.*,	Sr. Medical
Read, Richard P,	*Ithaca*,	2 Arts
Reaves, Samuel Watson, S.B.,	*Marion, S. C.*,	4 Arts
Redfield, Harry Westfall,	*Brooklyn*,	3 Arts
Redmond, Hugh,	*Elbridge*,	1 Civil Eng.
Reece, Edward Thomas,	*Christchurch, New Zealand*,	1 Mech. Eng.
Reed, Chester Turner,	*Worcester, Mass.*,	1 Mech. Eng.
Reed, Thurlow Weed,	*Hornellsville*,	2 Arts (1 Medical)
Reid, Mable Douglas,	*Ithaca*,	4 Arts
Reidy, John Bernard,	*Ithaca*,	1 Veterinary
Reinhart, William Jefferis,	*Paterson, N. J.*,	1 Mech. Eng.
Remsen, Charles Cornell,	*Brooklyn*,	3 Elect. Eng.
Rew, Frederick Gordon,	*Buffalo*,	2 Elect. Eng.
Reyna, Serapio,	*Jojutla Morelos, Mex.*,	2 Civil Eng.
Reynolds, John Fleming,	*Boone, Ia.*,	2 Elect. Eng.
Reynolds, Leonard Jesse,	*Potsdam*,	4 Philosophy
Reynolds, Stephen Clark,	*St. Louis, Mo.*,	1 Civil Eng.
Rhoades, Theodore Eckford,	*Ramsey, N. J.*,	2 Civil Eng.
Rhodes, Charles Foster,	*Marcellus*,	1 Mech. Eng.
Rhodes, Roy Verbeck,	*Troy*,	Jr. Law
Rice, George Whitmore,	*Ithaca*,	1 Mech. Eng.
Rice, Louis Albert,	*Ellington*,	3 Elect. Eng.
Richards, Emma Louise,	*Newark, N. J.*,	Sp. Arts
Richards, Francis Howe,	*Enfield, Mass.*,	Sp. Agriculture
Richardson, James Jr.,	*St. Louis, Mo.*,	2 Arts

Richardson, Thomas Smith,	*Glenwood Springs, Colo.*,	2 Elect. Eng.
Richardson, Walter Starr,	*Angelica*,	2 Arts
Richie, Arthur Leeds,	*Moorestown, N. J.*,	Sp. Agriculture
Richmond, James,	*Lockport*,	2 Mech. Eng.
Ridall, Jacob Cook,	*Pittsburg, Pa.*,	1 Mech. Eng.
Riedel, Arthur Emil, E.M.,	*New York, City*,	Sp. Civil Eng.
Riedel, Ernest Henry,	*Brooklyn*,	2 Arts
Riedel, Helen Clara,	*Brooklyn*,	1 Arts
Riley, Howard Wait,	*New York City*,	3 Mech. Eng.
Rilling, William Sullivan,	*Penn Yan*,	1 Law
Ripley, Allen Bradford,	*Chicago, Ill.*,	1 Arts
Rissmeier, Charles Fred,	*New York City*,	1 Medical
Ristine, George W, Jr.,	*Chicago, Ill.*,	3 Mech. Eng.
Ritter, Isidor,	*New York City*,	Sr. Medical
Robb, John Watkins,	*Jackson, Mich.*,	1 Arts
Robbins, Loring Griswold,	*Pittsfield, Mass.*,	4 Science
Robbins, Ralph Wellington,	*Chicago, Ill.*,	2 Mech. Eng.
Roberts, Edward Coleridge,	*Port Byron*,	3 Arts
Roberts, Frank Taft,	*Salt Lake City, Utah*,	3 Civil Eng.
Roberts, Owen Wilbur,	*Oak Park, Ill.*,	3 Mech. Eng.
Roberts, Roger Marr,	*Ithaca*,	2 Agriculture
Roberts, Thomas Burroughs,	*Ithaca*,	Sp. Arts
Roberts, William Mayne,	*Port Norfolk, Va.*,	Sp. Mech. Eng.
Robertson, Benjamin Franklin,	*Mexico, Mo.*,	Sp. Mech. Eng.
Robertson, Edward Livingston,	*St. Louis, Mo.*,	Jr. Law
Robertson, Isabelle Givan,	*Brooklyn*,	2 Arts
Rockefeller, Roy Polk,	*Phelps*,	1 Arts
Rockwood, Frederic Thomas,	*Elmhurst, Ill.*,	3 Science
Rodriquez, Damaso, B.C.E.,	*Coah, Mexico*,	2 Civil Eng.
Roe, Herbert Spencer,	*Wolcott*,	3 Agriculture
Roe, Willis Warren,	*Wolcott*,	1 Arts
von Roeder, Ludwig Robert,	*Yorktown, Texas*,	4 Medical
Roess, Martin John,	*Oil City, Pa.*,	1 Arts
Rogers, Henry Albert,	*Sherborn, Mass.*,	2 Mech. Eng.
Rogers, Harvey Griffin,	*Michigan City, Ind.*,	2 Arts
Rogers, Job Robert,	*Watertown*,	2 Civil Eng.
Romansky, Benjamin,	*New York City*,	1 Medical
Rommel, Arthur Evan, B.S.,	*Mt. Pleasant, Iowa*,	2 Civil Eng.
Roney, William Wheeler,	*New York City*,	1 Architecture
Roof, Stephen White,	*New York City*,	Sr. Medical
Roos, Oscar Christian, B.S.,	*New York City*,	2 Elect. Eng.
Root, Samuel Charles,	*Oneida*,	3 Mech. Eng.

Rosbrook, Alden Ivan,	*Utica*,	1 Law
Rose, Mabel Estey,	*Brooklyn*,	4 Arts
Rosekrans, Burton Warren,	*Albany*,	4 Civil Eng.
Rosenberg, Aaron John,	*New York City*,	Sr. Medical
Rosenberg, Herman,	*New York City*,	1 Medical
Rosenberg, Jerome Davis,	*Brooklyn*,	1 Arts
Rosenberg, Jacob George,	*Rochester*,	4 Arts
Rosenbloom, Augustus Abraham,	*New York City*,	2 Medical
Rosenthal, Jerome Walter,	*New York City*,	1 Veterinary
Rosensteel, William Frank,	*Johnstown, Pa.*,	1 Arts
Ross, Cecil Metcalfe,	*Hackensack, N. J.*,	2 Medical
Ross, Ida Adella,	*Brooklyn*,	4 Science
Ross, Sidney Fuller,	*Kennebunk, Me.*,	3 Architecture
Rossiter, Maida,	*Chicago, Ill.*,	1 Arts
Roth, Herman,	*New York City*,	1 Medical
Rothe, Harry Emory, Jr.,	*Newark, N. J.*,	2 Medical
Rounds, Donald McGregor,	*Des Moines, Ia.*,	1 Civil Eng.
Rowe, William Alphonso,	*Newark, N. J.*,	1 Mech. Eng.
Royce, Eugene Godley,	*Escanaba, Mich.*,	3 Arts
Ruch, Valentine, Jr.,	*Englewood, N. J.*,	1 Medical
Rufo, Henry Nimes,	*E. Orange, N. J.*,	2 Elect. Eng.
Ruggles, Arthur Gordon,	*Annapolis, N. S., Can.*,	2 Agriculture
Ruser, Etta Louise,	*Davenport, Ia.*,	1 Arts
Russ, Ella Craig,	*San Antonio, Texas*,	Sp. Arts
Russell, Constance Margaret,	*Cooperstown*,	1 Arts
Russell, Elizabeth Lockwood,	*Watkins*,	3 Arts
Russell, Joseph Heywood,	*Denver, Col.*,	3 Arts
Ryan, John Patrick,	*Medina*,	1 Arts
Ryon, Arthur Clark,	*Kingston*,	Jr. Law
Ryon, Robert,	*Pottsville, Pa.*,	1 Arts
Sabine, George Holland,	*Dayton, O.*,	1 Arts
Sage, Lillian Belle,	*Olean*,	Sp. Arts
Sanders, Frederick Morton,	*Scotch Bush*,	Jr. Law
Sanders, Thomas Richard,	*Baldwinsville, Mass.*,	3 Elect. Eng.
Sanford, Warren Bixby,	*N. Adams, Mass.*,	3 Mech. Eng.
Santry, William Francis,	*South Bay*,	2 Arts
Satterlee, John Paul,	*Gales Ferry, Conn.*,	4 Mech. Eng.
Sauerhering, Richard Paul,	*Maysville, Wis.*,	2 Elect. Eng.
Sawai, Zeuhich,	*Kitagun, Ehima, Japan*,	1 Agr.
Saxton, Mary Lois,	*Brooklyn*,	4 Science
Sayer, Harry Allan,	*Newburg*,	Jr. Law
Scadron, Samuel Jerome,	*New York City*,	1 Medical

Schaefer, Louis, Ph.G.,	*Brooklyn*,	2 Medical
Scheibner, Frederick William,	*Detroit, Mich.*,	2 Mech. Eng.
Schenck, Harry Irvin,	*Dayton, O.*,	1 Architecture
Schenk, Leon Horace,	*Fulton*,	4 Mech. Eng.
Schieren, George Arthur,	*Brooklyn*,	3 Elect. Eng.
Schirmer, Emily Caroline,	*Brooklyn*,	4 Medical
Schlesinger, Helen,	*Brookline, Mass.*,	3 Medical
Schluederberg, Carl George,	*Pittsburg, Pa.*,	2 Elect. Eng.
Schmidt, Frank Adam,	*Ilion*,	1 Law
Schmidt, Frederick George Edward,	*Herzberg, Germany*,	Sr. Medical
Schneidenbach, Arthur Jacques Melchor,	*New York City*,	2 Medical
Schoellkopf, Henry,	*Milwaukee, Wis.*,	1 Arts
Schoenfeld, Morris,	*New York City*,	1 Medical
Schrader, August Henry,	*Wellsville*,	1 Agriculture
Schrott, Claude Cordon,	*Gowanda*,	2 Mech. Eng.
Schultz, Maurice Abram,	*Ellenville*,	2 Arts
Schwartzman, Samuel,	*New York City*,	1 Medical
Scott, Charles Ralph,	*Ithaca*,	4 Elect. Eng.
Scott, Maxwell Williams,	*Dunkirk*,	1 Arts
Scoville, Addison Beecher,	*Kattskill Bay*,	Sr. Law
Scripture, Parker Fairfield,	*Rome*,	2 Arts
Seaman, Arthur M,	*Trunansburg*,	1 Veterinary
Searing, Benjamin Haff,	*Brooklyn*,	3 Arts (1 Medical)
Sears, Carlton Heald,	*Ithaca*,	1 Arts
Sears, Keith,	*Searsburg*,	2 Medical
Sears, Robert Bartlett,	*Binghamton*,	1 Arts
Sears, Woodard Wixom,	*Searsburg*,	Jr. Law
Seelback, Herman,	*Buffalo*,	1 Elect. Eng.
Seelye, Allegra Eggleston,	*Lake George*,	4 Philosophy
Seidell, William Charles,	*Peterboro*,	1 Civil Eng.
Selby, George Edgar,	*Baltimore, Md.*,	3 Civil Eng.
Senior, John Lawson,	*Montgomery*,	Jr. Law
Severson, Oscar Melvern,	*West Pittston, Pa.*,	3 Civil Eng.
Sewards, Theodore Matthew,	*New York City*,	1 Agriculture
Seymour, Claire,	*Gloversville*,	3 Arts
Seymour, Charles Kinne,	*Chatham*,	1 Mech. Eng.
Seymour, Nan Gilbert, A.B.,	*New York City*,	2 Medical
Shanks, Amy Chamberlain,	*New York City*,	4 Arts
Shanks, Sally Gore,	*New York City*,	4 Arts
Shattuck, Herbert Carpenter,	*Ithaca*,	1 Arts
Shattuck, Hobart Parker,	*Brooklyn*,	1 Medical
Shanley, Williams Francis, A.B.,	*Rockville, Conn.*,	1 Medical

Shaw, Clarence Earl,	*Perry City*,	2 Veterinary
Shaw, Mary Edna,	*Ilion*,	2 Architecture
Shea, Michael Bartholomew,	*Attica*,	4 Elect Eng.
Shea, Mabel Mary,	*Syracuse*,	3 Arts
Shears, Edith Estella,	*New York City*,	4 Medical
Sheitis, Benjamin,	*New York City*,	1 Medical
Sheitis, David,	*New York City*,	2 Medical
Sheldon, Bessie Louise,	*Rupert, Vt.*,	3 Arts
Sheldon, Charles Lacy, Jr.,	*Auburn*,	3 Arts
Sheldon, Philena Rebecca,	*Montague, Mass.*,	4 Arts
Sherman, Franklin, Jr.,	*Ashgrove, Va.*,	2 Agriculture
Sherwood, Arthur Henry,	*Kingston*,	3 Mech. Eng.
Sherwood, Carl Johnson,	*Syracuse*,	Sp. Mech. Eng.
Shiland, Elmer James,	*Coila*,	1 Mech. Eng.
Shimmell, Mary,	*Harrisburg, Pa.*,	1 Arts
Shire, Moses Edmund,	*Chicago, Ill.*,	4 Civil Eng.
Shirley, James Joseph,	*Orizaba, Mexico*,	1 Elect. Eng.
Short, John Cleves,	*Fern Bank, O.*,	1 Philosophy
Showers, Harriet,	*New York City*,	4 Medical
Shreve, Richmond Harold,	*Cooperstown*,	2 Architecture
Sibley, Elsie Throop,	*Detroit, Mich.*,	1 Arts
Sibson, Horace Evans,	*Philadelphia, Pa.*,	1 Mech. Eng.
Sidley, Thomas Hill,	*Chicago, Ill.*,	1 Elect. Eng.
Silk, Charles,	*New York City*,	Sr. Medical
Silverman, Aaron,	*Baltimore, Md.*,	2 Civil Eng.
Simis, Albert Condon,	*Brooklyn*,	2 Arts
Simmons, Henry Gassett,	*Newport, R. I.*,	3 Mech. Eng.
Simonds, Mary Edith, A.B.,	*New York City*,	3 Medical
Simons, Harry Gee,	*Sardinia*,	1 Elect. Eng.
Singmaster, Elsie,	*Allentown, Pa.*,	2 Arts
Sirdevan, William Joseph,	*Ithaca*,	Jr. Law
Sioyer, Frederick Lincoln,	*Milwaukee, Wis.*,	1 Mech. Eng.
Skellie, Robert Alexander,	*Cambridge*,	1 Arts
Skernewitch, Abraham Marcus,	*New York City*,	2 Medical
Skinner, John Alfred,	*Sherman*,	2 Civil Eng.
Slater, Joseph Nelson,	*Buffalo*,	1 Civil Eng.
Slater, Mary Florence Wells,	*Raleigh, N. C.*,	4 Science
Sleicher, Harry Seidel,	*Troy*,	Sr. Law
Sloat, Benjamin Crosby,	*New York City*,	1 Mech. Eng.
Slocum, Alexander Norton,	*Buffalo*,	3 Arts
Slocum, George Warren,	*Milton, Pa.*,	Sp. Agriculture
Slocum, Laura Geraldine,	*Geneva*,	1 Arts

Slocum, Katherine Maud,	*Ithaca*,	3 Arts
Smallwood, Charles Burlingame,	*Warsaw*,	4 Arts
Smallwood, John Bell,	*Le Roy*,	1 Arts
Smith, Agnes Garfield,	*N. Tonawanda*,	2 Arts
Smith, Augustus Henry,	*Hempstead*,	1 Arts
Smith, Arthur K,	*Ithaca*,	1 Law
Smith, Bronson Hasbrouck,	*Brooklyn*,	1 Mech, Eng.
Smith, Burr La Monte,	*Hornellsville*,	1 Arts
Smith, Don E,	*Buffalo*,	3 Arts
Smith, Edward Albert,	*Highland Park, Ill.*,	2 Elect. Eng.
Smith, Edward Percy,	*Brooklyn.*	4 Mech. Eng.
Smith, George Oberst,	*Rochester*,	1 Mech. Eng.
Smith, Harry Bradley,	*Washington, D. C.*,	3 Arts
Smith, Harry Hale,	*St. Paul, Minn.*,	4 Arts
Smith, Jenny Beck,	*Mauch Chunk, Pa.*,	3 Medical
Smith, Julius André,	*New York City*,	1 Architecture
Smith, John B,	*Plymouth, Pa.*,	1 Elect. Eng.
Smith, Julian Cleveland,	*Buffalo*,	4 Elect. Eng.
Smith, Joseph Dickenson Clair,	*Hartington, Neb.*,	1 Mech. Eng.
Smith, Jacob George,	*Freeville*,	1 Arts
Smith, Le Loy Burns,	*Seneca Falls*,	3 Arts
Smith, Marion de Kalb, Jr., A.B.,	*Chestertown, Md.*,	3 Civil Eng.
Smith, Mary Porter,	*Adams Centre*,	1 Arts
Smith, Muriel,	*Rochester*,	2 Arts
Smith, Peter,	*Andover, Mass.*,	3 Science
Smith, Sherman Edwin,	*Cameron, Mo.*,	3 Mech. Eng.
Smith, William Hereford, B.S.,	*Danville, Ky.*,	Sr. Medical
Smith, Percy Allis,	*Medina*,	1 Arts
Snow, Edward James,	*Montclair, N. J.*,	1 Elect. Eng.
Snow, Mary Louise,	*Fulton*,	1 Arts
Snyder, Charles Herman,	*Oswego*,	2 Civil Eng.
Snyder, Florence Morgan,	*Saugerties*,	2 Arts
Sommer, Harry Frank,	*New York City*,	1 Arts
Southard, George Lee,	*Buffalo*,	3 Mech. Eng.
Southwick, Sarah Frances,	*Ogdensburg*,	1 Arts
Spalding, Henry Jesse,	*New York City*,	Sr. Medical
Speer, John Duane,	*Caton*,	2 Arts
Spencer, Virginia Emeline,	*Granville*,	4 Science
Spier, Daniel Richard,	*Palmyra*,	2 Mech. Eng.
Spicer, William Claer,	*Cadiz, O.*,	4 Civil Eng.
Stagg, Charles Tracey,	*Elmira*,	1 Law
Stancliff, Clayton Miner,	*Titusville, Pa.*,	Jr. Law

Starbuck, Raymond Donald,	*Glens Falls*,	2 Civil Eng.
Starr, Everett Garrett,	*San Francisco, Cal.*,	1 Elect. Eng.
Starr, Louis Monnastes,	*San Francisco, Cal.*,	1 Law
Stearns, Emory Ward,	*Brooklyn*,	2 Mech. Eng.
Stedman, Irving Lynn,	*Homer*,	4 Mech. Eng.
Steel, William Foster,	*Mt. Vernon*,	1 Mech. Eng.
Steever, Jerome Elwell,	*Chicago, Ill.*	1 Mech. Eng.
Stegner, Clifford Milton, B.S.	*Cincinnati, O.*,	4 Civil Eng.
Stephens, Albert Woodward, A.B.,	*Ithaca*,	4 Agriculture
Sterling, Warner Strong,	*Newburg*,	1 Civil Eng.
Stern, Arthur Lewis,	*Rochester*,	4 Science
Stern, Henry Michael,	*Rochester*,	2 Science
Stevens, Charles Aldrich,	*Ithaca*,	4 Philosophy
Stevens, Charles Edward,	*Hornellsville*,	3 Architecture
Stevens, Harold Burr,	*Rome*,	2 Civil Eng.
Stevens, Jay Humphrey,	*Hornellsville*,	3 Arts
Stevens, Walter Campbell, LL.B.,	*New York City*,	2 Science
Stevenson, Joseph Welch,	*Burnham, Pa.*,	2 Mech. Eng.
Stevenson, Willis Mack,	*S. W. Oswego*,	2 Medical
Stevick, John Crist Harvey,	*Harrisburg, Pa.*,	1 Mech. Eng.
Stickney, Laura Miles,	*Rathbone*,	2 Arts
Stiefel, Isaac,	*New York City*,	2 Medical
Stifel, Arthur Clarence,	*Wheeling, W. Va.*	1 Mech. Eng.
Stigner, Per, A.B.,	*Gaisus, Sweden*,	Sr. Medical
Stockley, Fred Albert,	*Montour Falls*,	Sp. Law
Stone, Albert Winfield,	*Binghamton*,	1 Mech. Eng.
Stone, Clara Louise,	*Rochester*,	4 Philosophy
Stone, Charles Lucius,	*Troy*,	2 Medical
Stone, Delia May,	*Ithaca*,	1 Arts
Stone, Edward Camp,	*Trumansburg*,	1 Civil Eng.
Stone, Garry Terrill,	*Binghamton*,	3 Veterinary
Storey, Franklin Stevens,	*Brooklyn*,	1 Civil Eng.
Storck, Edward Hugo,	*Buffalo*,	1 Medical
Stowell, Ray Sherman,	*Potsdam*,	2 Arts
Strachstein, Abraham,	*New York City*,	1 Medical
Straight, Willard Dickerman,	*Oswego*,	3 Architecture
Strasburger, Edgar James,	*Butte, Mont.*,	4 Civil Eng.
Stratton, Harry Frost,	*Tiffin, O.*,	1 Mech. Eng.
Streep, Isaac,	*New York City*,	1 Medical
Strong, Marvin W,	*Sayville*,	1 Law
Strong, Ernest Melvin,	*Sayville*,	2 Elect. Eng.
Stroud, Bert Brenette, B.S., D.Sc.,	*Ithaca*,	2 Medical

Stroud, Smith Leroy,	*Atlanta, Ga.*,	1 Mech. Eng.
Strowger, Ernest Palmer,	*Brighton*,	2 Civil Eng.
Struven, Edward Dietrich,	*Baltimore, Md.*,	Sp. Mech. Eng.
Sturges. Eben Perry,	*Janesville, O.*,	1 Mech. Eng.
Sullivan, Ellen Theresa,	*Richwood, Wis.*,	3 Arts
Sullivan, Mary,	*Brooklyn*,	2 Arts
Sullivan, Michael Joseph,	*Pittsfield, Mass.*,	Sr. Medical
Surpless, Thomas John,	*Brooklyn*,	Sr. Law
Sutherland, William Henry,	*Canandaigua*,	Sr. Medical
Sutton, Clarence Wesley,	*Ithaca*,	4 Philosophy
Swanitz, Henry Wade,	*New York City*,	3 Civil Eng.
Swayze, Clayton Isaac,	*Lake Ridge*,	1 Medical
Sweeney, Edward John,	*Middleport*,	2 Arts
Sweet, Arthur Jeremiah,	*Maynard*,	3 Arts
Sweet, Elizabeth,	*Albany*,	3 Medical
Sweet, George Gilbert,	*Potsdam*,	3 Arts
Swift, Esther Lane,	*Millbrook*,	2 Arts
Taber, Silas,	*Auburn*,	1 Elect. Eng.
Tallmadge, Claud Paul,	*West Groton*,	1 Arts
Tappan, Clair Sprague,	*Baldwinsville*,	Sr. Law
Tappen, Alexander Bonnell,	*New York City*,	4 Mech. Eng.
Tarbell, Roscoe Conkling,	*Syracuse*,	3 Medical
Taussig, Charles August,	*Washington, D. C.*,	2 Arts
Taveira, Horace Alfred,	*Havana, Cuba*,	1 Mech. Eng.
Taylor, J Parker,	*Penn Yan*,	1 Elect. Eng.
Taylor, Royden Johnston, B.E.,	*Indiana, Pa.*,	1 Civil Eng.
Taylor, Thomas Bassett,	*New York City*,	3 Mech. Eng.
Taylor, Thomas Walter,	*Brooklyn*,	4 Civil Eng.
Taylor, William Richard,	*Brooklyn*,	1 Civil Eng.
Taylor, William Rolland, Jr.,	*Farmington, Mo.*,	1 Arts
Taylor, William Scott,	*Penn Yan*,	4 Philosophy
Teagle, Frank Henry,	*Cleveland, O.*,	2 Mech. Eng.
Teal, Arthur Raymond,	*Rochester*,	4 Mech. Eng.
Tefft, Henry Delano,	*Norwich*,	1 Arts
Tefft, Walter Clydesdale,	*Mineville*,	4 Science
Telfair, John Hamilton,	*Port Richmond*,	3 Medical
Terrell, Adelphus Centinnes,	*Macon, Mo.*,	4 Civil Eng.
Thayer, Edwin French,	*Attleboro, Mass.*,	2 Arts
Thayer, Horace Holden, Jr.,	*Yonkers*,	4 Mech. Eng.
Thayer, Samuel George,	*Rochester*,	1 Mech. Eng.
Thomas, Cassius Amasa,	*Saratoga Springs*,	4 Elect. Eng.
Thomas, David Radet,	*Hokendauqua, Pa.*,	3 Mech. Eng.

Thomas, William Clarence,	*Wilkes-Barre, Pa.*,	3 Civil Eng.
Thompson, Byron Lyman,	*Syracuse*,	1 Mech. Eng.
Thompson, Carrie Wilber,	*Highland Falls*,	1 Arts (1 Medical)
Thompson, Harry Elliott, M.D.,	*Cedar Falls, Iowa*,	2 Mech. Eng.
Thompson, John Redburn,	*Uniontown, Pa.*,	1 Mech. Eng.
Thompson, Kennington Leaning,	*Cooperstown*,	4 Arts
Thompson, Ransford Clark,	*Oil City, Pa.*,	1 Arts
Thompson, Vera May,	*Gloversville*,	4 Philosophy
Thorne, Grace Lucretia,	*San Francisco, Cal.*,	Sp. Arts
Thorne, Victor Corse, LL.B., Ph.B.,	*Bridgeport, Conn.*,	2 Medical
Thornton, Jessie Maude,	*Hillsville, Va.*,	Sp. Medicine
Thornton, Mary Frances Deraismus,	*New York City*,	2 Medical
Thro, Fredrick Henry,	*Ithaca*,	1 Arts
Thro, William Crooks,	*Elmira*,	3 Agriculture
Thurlow, Sarah,	*Lowell, Mass.*,	1 Science
Tidey, Lilly Victoria,	*Belleville, N. J.*,	3 Medical
Tietje, Arthur John,	*Dayton, O.*,	1 Arts
Tiffany, John Blakeslee,	*Hop Bottom, Pa.*,	3 Agriculture
Tiffany, Nelson Otis, Jr.,	*Buffalo*,	3 Civil Eng.
Tinan, Percy Warner,	*Painesville, O.*,	1 Arts
Tirman, Samuel,	*New York City*,	2 Medical
Tissington, Richard Andrews,	*Montclair, N. J.*,	4 Architecture
Tobias, Charlene Adele,	*Ithaca*,	4 Philosophy
Todd, Leona Estella,	*Rochester*,	1 Medical
Tomkins, Lucy Neilly,	*Stoney Point*,	1 Arts
Tompkins, George Nelson,	*Sing Sing*,	1 Medical
Tompkins, Howard Campbell,	*Brooklyn*,	1 Civil Eng.
Tompkins, Harry James,	*Troy*,	Sp. Forestry
Tompkins, Sidney,	*Troy*,	2 Mech. Eng.
Toms, Keefer Samuel,	*Frederick, Md.*,	1 Elec. Eng.
Tonero, Louis Vincent,	*Newark, N. J.*,	1 Medical
Toohill, Edward David,	*Auburn*,	1 Arts
Tooley, William Benjamin,	*Raceville*,	3 Agriculture
Torney, Edward John,	*Hot Springs, Ark.*,	Sr. Law
Tourison, Ashton Stephen, Jr.,	*Germantown, Pa.*,	3 Mech. Eng.
Tourison, George Bartle,	*Philadelphia, Pa.*,	1 Architecture
Townsend, Anna B,	*Washington, D. C.*,	2 Arts
Townsend, Edith Elizabeth,	*Washington, D. C.*,	1 Arts
Townsend, Stephen Herbert,	*Glen Head*,	1 Elec. Eng.
Tracy, Frank Sedgwick,	*Syracuse*,	4 Science
Tracy, James Grant, Ph.B.,	*Syracuse*,	Sr. Law
Trautschold, Reginald,	*Montclair, N. J.*,	2 Mech. Eng.

Trautwine, John Cresson, 3rd,	*Philadelphia, Pa.*,	4 Civil Eng.
Treat, Lillian Amelia,	*Auburn*,	2 Medical
Tree, Edna Gertrude,	*Ithaca*,	1 Arts
Tree, Nina Marian,	*Ithaca*,	2 Arts
Trefts, John Chilion,	*Buffalo*,	2 Mech. Eng.
Trezise, John Davies,	*Minersville, Pa.*,	Sr. Medical
Truman, Nathan Elbert,	*Bainbridge*,	4 Arts
Tryon, Clarence Archer,	*Oakfield*,	3 Elec. Eng.
Tucker, Gilbert Milligan, Jr.,	*Albany*,	2 Agriculture
Tuller, Henry Hiram,	*Richfield Springs*,	3 Science
Turnbull, Ethel Agnes,	*Nashville*,	1 Arts
Turnbull, William Arthur,	*Elmira*,	Jr. Law
Turner, Ernest Abbott,	*Plattsburgh*,	3 Mech. Eng.
Turner, Kenneth Bertrand,	*Scriba*,	1 Civil Eng.
Turner, John Lawrence,	*New York City*,	2 Mech. Eng.
Turrill, Sherman Marsh,	*Ithaca*,	3 Civil Eng.
Tuttle, Sydney Lauren,	*Big Flats*,	3 Civil Eng.
Tuttle, Walter Irving,	*Brooklyn*,	2 Civil Eng.
Tydeman, William Alfred,	*Bloomfield, N. J.*,	1 Mech. Eng.
Udall, Dennie Hammond, B.S.A.,	*Croftsburg, Vt.*,	2 Veterinary
Uihlein, Edgar John,	*Chicago, Ill.*,	4 Science
Uihlein, Joseph Edgar,	*Milwaukee, Wis.*,	1 Law
Underdown, Milton Miller,	*Taughannock Falls*,	3 Agriculture
Underdown, William Edward,	*Taughannock Falls*,	Sp. Agriculture
Underhill, Elizabeth Colden,	*Poughkeepsie*,	4 Medical
Underwood, Howard Warren,	*N. Adams, Mass.*,	3 Civil Eng.
Underwood, Russell Sage,	*Baltimore, Md.*,	1 Law
Urner, Frank Arnold,	*Elizabeth, N. J.*,	1 Arts
Utz, John Gilmore,	*Cleveland, O.*,	2 Mech. Eng.
Vail, Carleton, McCulloch,	*Highland Pk., Ill.*,	2 Arts
Vail, George Truesdell,	*Michigan City, Ind.*,	2 Arts
Valentine, Elizabeth,	*Brooklyn*,	1 Arts
Valentine, Walter Scott,	*Wallingford, Conn.*,	4 Elect. Eng.
Van Alstyne, Thomas Jefferson,	*Whittier, Cal.*,	1 Mech. Eng.
Vanderhoef, Henry Earnest,	*Ithaca*,	2 Mech. Eng.
VanDeventer, John Herbert	*Buffalo*,	1 Civil Eng.
Vau Evera, Arlington Lambert,	*West Salem, O.*,	Sp., Agriculture
Van Hoesen, Gertrude,	*Chicago, Ill.*,	Sp. Agriculture
VanKleeck, Irene Belle,	*Spencer*,	1 Arts
Van Namee, George Rivet,	*Watertown*,	Jr. Law
Vanneman, Charles Reeve,	*Havre-de-Graee, Md.*,	1 Civil Eng.
Van Pelt, Harvey Loren,	*Ithaca*,	2 Medical

Van Valkenburgh, Ralph Dwight,	*Greene*,	3 Mech. Eng.
Van Wagenen, Henry Tracy,	*Oxford*,	1 Mech. Eng.
Van Wickle, George S,	*Brooklyn*,	1 Mech. Eng.
Vastbinder, Burrell,	*Addison*,	2 Arts
Vauclain, Samuel Matthews, B.S.,	*Philadelphia, Pa.*,	2 Mech. Eng.
Vedder, Marcia,	*St. Johnsville*,	4 Science
Vickers, Squires Joseph,	*Roseboom*,	4 Architecture
Vocke, Charles William,	*Baltimore, Md.*,	3 Mech. Eng.
Voegelin, Carl Oswald,	*Delhi*,	3 Arts
Vogleson, John Albert,	*Coluubiana, O.*,	4 Civil Eng.
Vogt, Walter Eugene,	*Brooklyn*,	1 Medical
Von Sholly, Anna Irene, A.B.,	*Flushing*,	2 Medical
Voorhees, Frank Duryea,	*Jersey City, N; J.*,	2 Arts
Vose, Robert Emory,	*Baltimore, Md.*,	1 Mech. Eng.
Vose, Roy Mandeville,	*Ithaca*,	2 Medical
Vrooman, Isaac Henry, Jr.,	*Albany*,	2 Elect. Eng.
Wagenschuetz, Edith Ernstine,	*N. Tonawanda*,	1 Arts
Wagner, Fred Andrew Peter,	*Redwood*,	1 Law
Wagner, George Olds,	*Buffalo*,	4 Civil Eng.
Wagner, Otto,	*New York City*,	1 Medical
Wait, Bertrand Hinman,	*Norwich*,	2 Civil Eng.
Wales, Charles Paddock,	*Binghamton*,	1 Law
Wales, Ralph Avery,	*Elmira*,	2 Mech. Eng.
Walker, Edward Everett,	*Erie, Pa.*,	1 Mech. Eng.
Walker, Ella Catherine,	*Johnstown, Pa.*,	Sp. Arts
Walker, Emery Lafayette,	*Tacoma, Wash.*,	2 Mech. Eng.
Walker, Jeannette Brown,	*Philadelphia, Pa.*,	Sp. Arts
Walker, William Henry, Jr.,	*New York City*,	2 Medical
Walter, Henry,	*New York City*,	2 Arts
Walter, Richard Oliver,	*Whitney's Point*,	3 Arts
Waltman, Ernest Henry,	*Sayre, Pa.*,	Jr. Law
Walton, Albert,	*Chicago, Ill.*,	2 Mech. Eng.
Wandling, Vera,	*Ithaca*,	1 Arts
Wanke, Paul Gustav,	*Auburn*,	1 Arts
Wanzer, Esther May,	*Ithaca*,	1 Medical
Ward, Archibald Robinson, B.S.A.,	*Ithaca*,	1 Veterinary
Ward, Gertrude Potter,	*Bloomfield, N. J.*,	4 Medical
Ward, Walter Keefer,	*Ravena*,	1 Civil Eng.
Ward, William James,	*Montclair, N. J.*,	1 Elec. Eng.
Ware, Ralph,	*Chicago, Ill.*,	1 Arts
Warner, Alfred Dupont, Jr.,	*Wilmington, Del.*,	4 Science
Warner, Joseph DeWitt,	*New York City*,	1 Architecture

Warner, Lea Pusey,	*Wilmington, Del.*,	2 Mech. Eng.
Warner, Nora Louise,	*Burdett*,	2 Arts
Warner, William Halsey Alonzo,	*Newark, N. J.*,	2 Medical
Warner, William Jay,	*Springville*,	1 Arts
Warren, Chester Ingersoll,	*Troy*,	1 Mech. Eng.
Warren, Walter Garfield,	*Chicago, Ill.*,	1 Arts
Waterbury, Clarence,	*Whitesboro*,	2 Elec. Eng.
Waterman, Charlotte Cornelia,	*Hudson*,	1 Arts
Waterman, Paul Harrison, A.B.,	*Westfield, Mass.*,	2 Medical
Waters, Henry Langworthy,	*Rochester*,	4 Elec. Eng.
Watson, Edward Cassius,	*Westfield*,	1 Law
Watterson, John Sayle,	*Cleveland, O.*,	1 Civil Eng.
Wean, Louise Rebecca,	*Kinsman, O.*,	Sp. Arts
Weaver, Joseph Briggs,	*Darby, Pa.*,	2 Mech. Eng.
Webb, Charles Wayland,	*Cleveland, O.*,	2 Mech. Eng.
Weber, Edward William,	*Mt. Vernon*,	1 Medical
Weber, Raxley F,	*Salamanca*,	1 Arts
Webster, Alma Eloise Jackson,	*Newfield*,	1 Arts
Webster, Richardson,	*Brooklyn*,	2 Arts
Webster, Towner, K, Jr.,	*Evanston, Ill.*,	1 Mech. Eng.
Weed, Joseph Bartholomew, Jr.,	*Newark, N. J.*,	4 Science
Weeks, Arland Deyett,	*Cortland*,	3 Arts
Weidman, J. Hynds,	*Syracuse*,	1 Civil Eng.
Weidner, Paul Gustavus,	*Buffalo*,	3 Elec. Eng.
Weighart, Joseph Benjamin,	*New York City*,	3 Medical
Weinberg, Joseph Elias,	*New York City*,	Sr. Medical
Weiss, Julius, B.S.,	*New York City*,	2 Medical
Welch, George Morgan,	*Passaic, N. J.*,	1 Arts
Wellbrook, Walter Jacob,	*New York City*,	Sp. Agriculture
Wells, Alfred Tennyson,	*Menomine, Mich.*,	1 Mech. Eng.
Wells, Hugo Daniel,	*Salt Lake City, Utah*,	2 Mech. Eng.
Wenborne, Charles William,	*Buffalo*,	1 Agriculture
Wentworth, John Elwood,	*Harrison, Me.*,	1 Arts
West, Albert Root,	*Brooklyn*,	2 Mech. Eng.
West, Charles Cameron,	*Chicago, Ill.*,	4 Mech. Eng.
West, George Hutton,	*Reber*,	3 Agriculture
Westheimer, Irvin Ferdinand,	*St. Joseph, Mo.*,	2 Arts
Westwood, Elizabeth Howard,	*Buffalo*,	2 Arts
Wheeler, Frank Grant,	*E. Orange, N. J.*,	2 Arts
Wheeler, George Burton,	*Morristown, Tenn.*,	Sp. Agriculture
Wheeler, John,	*New York City*,	1 Mech. Eng.
Wheeler, L Jay,	*Trumansburg*,	Sr. Law

Wheeler, William Truesdale,	*Peoria, Ill.*,	1 Arts
Wheelwright, Joseph Storer, A.B.,	*Bangor, Me.*,	Sr. Medical
Whinery, Maurice Robert,	*E. Orange, N. J.*,	1 Arts
Whipple, Asher Porter,	*East Randolph*,	Jr. Law
Whipple, Helen Winifred,	*Binghamton*,	4 Arts
Whitbeck, Arthur Sidney,	*Rochester*,	1 Civil Eng.
Whitbeck, Ray Hughes,	*Hermitage*,	2 Arts
White, Bertha Othniel,	*Titusville, Pa.*,	3 Arts
White, Carl Foster,	*Cleveland, O.*,	1 Mech. Eng.
White, Henry Graves,	*Syracuse*,	3 Mech. Eng.
White, John Sumner,	*Ithaca*,	2 Civil Eng.
White, Kelton Ewing,	*St. Louis, Mo.*,	3 Arts
White, Willard Olney,	*Blossvale*,	4 Civil Eng.
Whiteford, Margaret Wells,	*Upper Jay*,	2 Arts
Whiteman, Floyd Edward,	*Wayland*,	Sr. Law
Whitman, Ezra Bailey,	*Baltimore, Md.*,	3 Civil Eng.
Whitney, George Stoddard,	*Binghamton*,	3 Arts
Whitney, Walter Duncan,	*Gloversville*,	2 Elec. Eng.
Whittemore, Audenried,	*St. Louis, Mo.*,	1 Mech. Eng.
Whitwell, Livingston, Miller,	*Fort Plain*,	4 Science
Wieland, Albert Edgar,	*Milwaukee, Wis.*,	4 Elec. Eng.
Wienhoeber, George William	*Chicago, Ill.*,	4 Agriculture
Wilcox, Anna Mabel,	*Bergen*,	1 Arts
Wilcox, Clara Louise,	*Covert*,	2 Arts
Wilcox, Clark Luzerne,	*Mexico*,	3 Civil Eng.
Wilcox, Dudley Kirkpatrick,	*Auburn*,	1 Law
Wild, Howard,	*Cedar Falls, Iowa*,	1 Civil Eng.
Wilder, Edward Lyman, A.B.,	*Hoosic Falls*,	2 Elec. Eng.
Wilder, Joseph Lot,	*Akron*,	2 Veterinary
Wiley, George Wesley,	*Calhoun, Ala.*,	Sp. Agriculture
Wilgus, Herbert Sedgwick,	*Buffalo*,	3 Civil Eng.
Wilkes, James Wallace,	*Columbia, Tenn.*,	Sr. Medical
Will, Frederick, Jr.,	*Rochester*,	3 Arts
Will, Phillip,	*Rochester*,	4 Mech. Eng.
Williams, Albert Chadwick,	*Hinsdale, Ill.*,	2 Mech. Eng.
Williams, Alan Gillespie,	*Indianapolis, Ind.*,	1 Mech. Eng.
Williams, Asa Starkweather,	*New York City*,	1 Forestry
Williams, Frank Davol,	*Brooklyn*,	1 Medical
Williams, Howard Shay,	*Brooklyn*,	2 Civil Eng.
Williams, Roger Butler, Jr.,	*Ithaca*,	3 Civil Eng.
Williams, Tudor Rosser,	*Scranton, Pa.*,	1 Civil Eng.
Williamson, Lester Hartranft,	*New Brunswick, N. J.*,	Sp. Agr.

Willis, Frederick,	*Flushing*,	3 Arts
Wilson, Christopher William,	*Brooklyn*,	Sr. Law
Wilson, Elbert Andrew,	*Ithaca*,	4 Science
Wilson, Frank Harvey,	*Appleton*,	1 Civil Eng.
Wilson, Jessie Campbell, B.E.,	*Harrisburg, Pa.*,	2 Arts
Wilson, Jesse Henry, Jr.,	*Washington, D. C.*,	4 Arts
Wilson, Louis Thompson,	*Chicago, Ill.*,	2 Mech. Eng.
Wilson, Thomas,	*Philadelphia, Pa.*,	3 Arts
Wilson, Victor Tyson,	*Ithaca*,	1 Mech. Eng.
Wilson, Willets, Ph.G.,	*Ithaca*,	2 Medical
Wilson, William Edward,	*New York Mills*,	3 Civil Eng.
Wiltse, Herbert Alphonso,	*Hannibal*,	4 Mech. Eng.
Winans, Elizabeth Sweet,	*Unadilla*,	4 Arts
Windsor, Philip Brundage,	*Hornellsville*,	4 Civil Eng.
Wing, Persons Walton,	*New York City*,	2 Medical
Winick, Samuel,	*Minsk, Russia*,	Sr. Medical
Winkler, George,	*Donegal, Pa.*,	Sp. Architecture
Winn, Earl Judson,	*Ithaca*,	3 Arts
Winslow, Elizabeth Bishop,	*Ithaca*,	3 Arts
Winters, George Payne,	*Melbourne, Fla.*,	1 Arts
Wise, Arthur Heston,	*New York City*,	3 Medical
Wisner, John Horner, Jr.,	*Summit, N. J.*,	1 Mech. Eng.
Woelfert, Ludwig Paul Otto,	*Stettin, Germany*,	Sr. Medical
Woelfle, Henry Ewald,	*Newark, N. J.*,	2 Medical
Wohl, Albert Arthur,	*New York City*,	Sr. Medical
Wolff, Harry Alfred,	*Brooklyn*,	1 Medical
Wood, Alfred Thomas,	*Defiance, O.*,	3 Elect. Eng.
Wood, Eben Albert,	*South Salem*,	Sr. Law
Wood, George Milton, Jr.,	*Woodville*,	1 Arts
Wood, Herbert Mariner,	*Sackville, N. B., Can.*,	2 Arts
Wood, Robert Thompson,	*Cold Spring*,	Jr. Law
Wood, Walter Wallace,	*Westbury*,	1 Mech. Eng.
Woodhull, Gilbert Bergen,	*Brooklyn*,	2 Elect. Eng.
Woods, Grace Maude,	*Lockport*,	1 Arts
Woodward, Karl Wilson,	*Montclair, N. J.*,	1 Arts
Woodward, Mabel Hadley,	*Rochester*,	1 Medical
Woodward, Winsor French,	*Brooklyn*,	1 Mech. Eng.
Woodworth, Blanche Ethel,	*Warsaw*,	1 Arts
Wormuth, Romeyn,	*Port Leydon*,	3 Arts
Worthley, Irving Tupper,	*Brooklyn*,	1 Forestry
Wright, Albert Lawrason,	*Barton, Fla.*,	1 Elect. Eng.
Wright, Arthur Mullin,	*Lyndonville*,	1 Arts

Wright, Floyd Robins, A.B.,	*Ithaca*,	2 Medical
Wright, George Creighton,	*Ogdensburg*,	1 Civil Eng.
Wright, Moses James,	*Worthington, O.*,	4 Arts
Wright, Paul Loring,	*Worthington, O.*,	Sr. Law
Wright, Wilfred La Selles,	*Sioux Clty, Iowa*,	3 Elect. Eng.
Wurst, George W,	*Holland*,	1 Mech. Eng.
Wyvell, Manton Marble,	*Alma*,	3 Arts
Yale, Fred Silas,	*Cortland*,	1 Mech. Eng.
Yates, Thomas Jarvis,	*Scipio, Utah*,	2 Mech. Eng.
Yawger, Charles Shoemaker,	*Seneca Falls*,	1 Law
Yeomans, Frank Clark, A.B.,	*New York City*,	Sr. Medical
Young, Charles Duncanson,	*Washington, D. C.*,	2 Elect. Eng.
Young, Carrie Van Patten,	*Williamsport, Pa.*,	1 Arts
Young, George, Jr.,	*Ellenville*,	4 Architecture
Young, George Harper,	*Williamsport Pa.*,	4 Elect. Eng.
Young, Helen Louise,	*Marion*,	4 Arts
Young, Nathan Elmer,	*Owego*,	2 Civil Eng.
Young, Ralph Goldsmith,	*San Antonio, Tex.*,	3 Elect. Eng.
Zeese, Robert Alexander,	*Chicago, Ill.*,	1 Elect. Eng.
Zeiner, Eugene Jerome, Ph.G.,	*Brooklyn*,	2 Medical
Zies, Frederick,	*Baltimore, Md.*,	2 Elect. Eng.
Zimmer, Ludo Little,	*Weedsport*	Sp. Agriculture
Zimmer, William Bernard,	*Rochester*,	1 Arts
Ziporkes, William Jerome,	*New York City*,	1 Medical
Zipser, Benjamin William,	*New York City*,	2 Medical
Zoetzl, Joseph Lawrence,	*New York City*,	Jr. Law
Zolzer, Charles Henry,	*Brooklyn*,	3 Civil Eng.
Zon, Raphael, B.S., B.A.,	*Simbirsk, Russia*,	3 Forestry
Zucker, Morris, Ph.G.,	*New York City*,	1 Medical

STUDENTS IN THE SUMMER SESSION.

Ackerman, Ira Jason, ... *Brooklyn*
Adams, Clara Augusta, ... *Saratoga Springs*
Alden, Harriet, ... *Metuchen, N. J.*
Allen, Bennet Mills, Ph.B., (*DePauw Univ.*), 1898, . . *Pueblo, Colo.*
Allen, Frank, B.A., (*Univ. of New Brunswick*), 1895, M.A., (*same*), 1897, ... *Murray Harbour, P. E. I., Canada*
Allen, Freeman Harlow, Ph.B., (*Ill. Wes. Univ.*), 1895, . . *Potsdam*
Allen, George Plass, Pd.B., (*Albany Normal Coll.*), 1897, *Tottenville*
Andrews, Charles Bradley, A.B., (*Princeton*), 1898, *Zanesville, O.*
Ard, Charles Edgar, B.S.. (*Ga. Sch. of Technology*), 1892, *Agricultural College, Miss.*
Armstrong, John Rorick, A.B., (*Hillsdale Coll., Mich.*), 1898 *Mt. Clemens, Mich.*
Ayer, Jennie James, ... *Brooklyn*
Ayers, Evalena Vera, ... *Richford*
Barclay, Julian Thomas, A.B., (*Bethany Coll*), 1898, *Bethany, W. Va.*
Barrett, Mary Ford, ... *Victoria Mills*
Barrus, Rowley Monroe, A.B., (*Hillsdale Coll.*), 1879, A.M., (*same*), 1882, ... *Keuka College*
Bartlett, Millie Horton, ... *Brooklyn*
Barton, Anna Leslie, ... *New York City*
Bass, Jane Wood, ... *Indianapolis, Ind.*
Beach, Channing Elias, ... *Buffalo*
Beardsley, Lewis Aurelius, A.B., 1888, ... *Ithaca*
Bendann, Effie, ... *Baltimore, Md.*
Bennett, John Ira, A.B., (*Union Coll.*), 1890, ... *Schenectady*
Bennett, Reuben Grant, B.S., (*Swarthmore Coll.*), 1897, *Freeport, O.*
Besio, Josephine Mae, ... *Flushing*
Bickmore, Mary Emma, ... *Mt. Vernon*
Blaich, Martha Kate, ... *Indianapolis, Ind.*
Blossom, Margaret, ... *Brooklyn*
Bohnstadt, Clara Louise, ... *Indianapolis, Ind.*
Bostwick, Helen Mar, ... *Brooklyn*
Bower, Kate Louise, ... *Mt. Vernon*
Boynton, Ednée Berenice, ... *Knoxville, Tenn.*
Bradley, Herbert Chapman, ... *Montclair, N. J.*
Braine, Elizabeth Musgrove, ... *Brooklyn*
Brewer, Charles Edward, M.A., (*Wake Forest Coll.*), 1886, *Wake Foresl, N. C*

Briner, Emil Amandus, ... *New York City*
Brinsmade, Herman Hine, ... *Springfield, Mass.*
Brown, Nancy Fairfax, ... *Winchester, Va.*
Brown, Ralph Minthorne, ... *Ithaca*
Bruckman, Louisa, Pd.B., (*Normal Coll.*), 1895, Pd.M., (*New York Univ.*),, 1895, ... *New York City*
Brundage, Adele, ... *Starkey*
Bryant, Frank Laverne, B.S., (*St. Lawrence Univ.*), 1891, . *Brooklyn*
Bullard, Clara May, ... *Schuylerville*
Burges, William Henry, ... *Seguin, Texas*
Burt, Le Van Merchant, ... *West New Brighton*
Butler, Ida May, ... *Buffalo*
Butler, Eliza Rhees, ... *Paterson, N. J.*
Bye, Mary Alice, B.S. (*Carlton Coll.*), 1885, . . *Nashville, Tenn.*
Byrne, John P . . . . . *Brooklyn*
Cairns, Anna Bell . . . . . *Lansingburg*
Carney, Frank . . . . . *Keuka College*
Carroll, Harry Clarence, ... *Worcester, Mass.*
Carter, Marion Hamilton, B.S., 1898 . . . . . *Boston, Mass.*
Cauthen, Edward Francis, B.S., (*Univ. of Nashville*), 1895, *Heath Spring, S. C.*
Cavarly, Alice Shipman, ... *Irvington*
Child, Clement D, A.B., (*Univ. of Rochester*), 1890, Ph.D., 1897, *Linden*
Claffy, Mary Josephine . . . . . *Brooklyn*
Clark, Jane Isabel, B.A., (*Penn. Coll. for Women*), 1881, *Alleghany, Pa.*
Clark, William Alexander Graham, B.S., (*N. C. A. & M. C.*), 1897, M.E., (*same*), 1899 . . . . . *Raleigh, N.C.*
Clarke, Alice Reed . . . . . *Syracuse*
Clifton, Frederick Charles . . . . . *Troy*
Cochran, Julia Andrew . . . . . *Ithaca*
Cole, Annie Edwards . . . . . *Tottenville*
Coleman, Clatina . . . . . *King's Ferry*
Coleman, Nelson Leonard, B.A., (*Colgate Univ.*), 1897, *Schuylerville*
Colvin, Florence Estelle . . . . . *Scranton, Pa.*
Comin, Robert, A.B., (*Princeton*), 1897, ... *Bloomfield, N. J.*
Conant, Emily Ida, Pd.D. (*New York Univ.*), 1891, *New York City*
Cook, Minnie Warren, ... *Manasquan, N. J.*
Cooke, Helen Fairman, B.A. (*Wellesley*), 1896, *North Brookfield, Mass.*
Cooper, Mary Jane, M.A. (*Indiana State Nor.*), 1888, *Johnstown, Pa.*

Corcoran, Tressa Maria, ... *Dayton, O.*
Countryman, Reuben Leroy, Ph.B. (*Mt. Hope Coll.*), . . *Cameron*
Cramer, Nelly Ruth, ... *South Rutland*
Crawford, Grace Merriam, ... *Boston, Mass.*
Crocker, Annette Lyman, A.B. (*Radcliffe*), 1896, . . *Concord, N. H.*
Croll, Rebecca J Brown, ... *Middleton, Pa.*
Crosby, Sarah Adams, ... *Kingston*
Crouch, Eugene Morgan, A.B. (*Millingan Coll., Tenn.*), 1887, A.M. (*same*), 1893, ... *No. Manchester, Ind.*
Crowl, Mabel Robinson, ... *Ithaca*
Cudlipp, Hattie Louise, ... *New York City*
Curran, Mary Alice, ... *New York City*
Curtis, Callie Wilson, ... *West Liberty, W. Va.*
Curtis, Harry Gould, ... *Belvidere, Ill.*
Dawson, Ella Maria, ... *New York City*
Davenport, John Kilbourn Warner, . . . *S. Hadley Falls, Mass.*
Davenport, Uriah Harrold, B.S., (*Univ. of Ga.*), 1898, *Americus, Ga.*
Dean, Sara Elizabeth, ... *Englewood Cliffs, N. J.*
Derham, Milo Grant, A.B., 1892, ... *Altona, Ill.*
Dugan, James Abraham, ... *New York City*
Duncan, Charles Miguel, ... *Bonaparte, Iowa*
Duncan, Elizabeth, A.B., (*Westminster*), 1898, ... *Alverton, Pa.*
Dynes, Sarah Ann, Ph.B., 1894, ... *Columbus, Wis.*
Eadie, Emma Trevor, ... *Ithaca*
Eadie, Julia, B.A., (*Trinity*), 1897, . . . *Toronto, Ont., Canada*
Eddy, Arthur William, ... *DeKalb Jc.*
Edmonston, Clarence Lowrie, ... *Montclair, N. J.*
Edsall, Alice Mary, ... *Ithaca*
Ellis, George Sheldon, Ph.B., (*Brown Univ.*), 1894, . . *Roselle, N. J.*
Emerson, Frederick Valentine, A.B., (*Colgate Univ.*), 1898, *Tillotson, Pa.*
Evans, Susan Jane, Ph.B., 1897, ... *Rome*
Fay, Allan Bradshaw, A.B., (*Harvard*), 1894, A.M., (*same*), 1895, *Washington, D. C.*
Ferry, Alice Medora, A.B., (*Barnard*), 1897, ... *Mt. Vernon*
Feuring, Anna Sophie, ... *New York City*
Feuring, Elise Martha, ... *New York City*
Fisher, James, Jr., E.M., (*Mich. Coll. of Mines*), 1893, *Hancock, Mich.*
Fletcher, Milton Joseph, A.B., (*Syracuse*), 1888, ... *Unadilla*
Fockler, Edward Benjamin, ... *North East, Md.*
Folk, Frederick Jackson, ... *Brooklyn*

Folls, Carl Theodore, ... *Dunkirk*
Fox, Katharyn Clara, ... *New York City*
Friedrick, Daisy Walker, ... *Brooklyn*
Gage, John, ... *Schuylerville*
Gager, Charles Stuart, A.B., (*Syracuse Univ.*), 1895, Pd.M., (*State Normal Coll.*), 1897, ... *Albany*
Gaige, Fred Hughes, M.E., (*Mansfield State Normal*), 1897, *Mansfield, Pa.*
Gallaher, Ada Rose, ... *New Washington, Pa.*
Gallagher, Mary Agnes, ... *Ithaca*
Gantt, Frances, ... *Norfolk, Va.*
Gantt, Jeannette, ... *Norfolk, Va.*
Gardner, Arthur Freemont, A.B., (*Bucknell*), 1893, . *Factoryville, Pa.*
Gault, Robert Harvey, ... *Ellsworth Station, Ohio*
Gibbons, Dora Belle, B.L., (*Mt. Holyoke Coll.*), 1896, . . *Franklin*
Gibbons, Vernette Lois, B.S., (*Mt. Holyoke Coll.*), 1896, B.A., (*same*), 1899, ... *Franklin*
Gibson, Anne Grace, ... *New York City*
Gilbert, Archibald Marvine, ... *Washington, D. C.*
Gillespie, Elizabeth Paulson, ... *Sewickley, Pa.*
Gillespy, Frances Bliss, ... *Lansingburgh*
Gimper, Earle H., ... *Galveston, Tex.*
Gleason, Charles Wilcox, ... *Watertown*
Goldsmith, Evelyn May, ... *Binghamton*
Goodall, Stella Vivian, ... *Ithaca*
Goodrich, Annie Mason, A.B., (*Smith Coll.*), 1892, *Paterson, N. J.*
Goodrich, Charles Landon, B.A., (*Williams Coll.*), 1885, *Hampton, Va.*
Goodrich, Charlotte, B.A., (*Wellesley*), 1895 . *Albany*
Goodrich, Martha McClenahan, ... *Marlborough, Mass.*
Gordon, Eugenia Staples, ... *New Rochelle*
Graham, Margaret Jane, ... *Albany*
de Grain, Edward Reinhold Suiva, ... *Washington, D. C.*
Granger, Lottie Estelle, A.M. (*Shepardson Coll.*), 1895, *Des Moines, Iowa*
Grimshaw, Frederick George, ... *Paterson, N. J.*
Griswold, Harvey De Witt, B.A. (*Union*), 1885, ... *Dryden*
Groat, George Gorham, B.A. (*Syracuse Univ.*), 1895, Pd.M. (*State Normal Coll.*), ... *Albany*
Guirey, Mary Elizabeth, Pd.M. (*New York Univ.*), 1897, *New York City*
Guss, Roland Wilkins, A.B. (*Wesleyan*), 1888, A.M. (*same*), 1891, *North Adams, Mass.*

Hall, Alice, ... *Dayton, O.*
Hall, Eliza Phillips, ... *Dayton, O.*
Hallock, Inez Joanna, ... *Riverhead, L. I.*
Hamman, Adelaide, ... *Rochester*
Hamsher, Frank, A.B. (*Univ. of Mich.*), 1895, . . . *Decatur, Ill.*
Hanna, Ina May, B.S. (*Westminster Coll.*), 1894,
New Wilmington, Pa.
Harris, Flora Etta, A.B. (*Central Univ.*), 1884, . *Winterset, Iowa*
Harris, Preston James, ... *Buffalo*
Harvie, Lelia Jefferson, ... *Chula, Va.*
Hawley, William Parker, B.S. (*Mich. Agr. Coll.*), 1892, *Chicago, Ill.*
Hayes, Maud Ellen, ... *New York City*
Hazen, Mary Clark, ... *Ithaca*
Heath, Daisy Winifred . . . . . *West New Brighton*
Heller, Harley Howard . . . . . *Rochester, Pa.*
Hemingway, Helen Laura . . . . . *McLean*
Henderson, Annie Powers . . . . . *Washington, D. C.*
Henderson, Emma . . . . . *LeRoy*
Henry, Margaret Young, B.A., (*Wellesley*), 1897, M.A., (*N. Y. Univ.*), 1899, ... *Jersey City, N. J.*
Hess, Howard Arthur . . . . . *Chicago, Ill.*
Heydt, Anna . . . . . *New York City*
Hill, Cora Marie . . . . . *Cobleskill*
Hinman, Helen Josephine . . . . . *Columbus, Ohio*
Hinsdale, William Moses, Jr. . . . . *Oswego Falls*
Hixon, Kate Burnett . . . . . *New York City*
Hoage, Norma . . . . . *Brooklyn*
Hodges, Léonie Rose . . . . . *Newark, N. J.*
Hodgin, Samuel Horace, A.B., (*Haverford Coll.*), 1898,
Greensboro, N. C.
Holden, Charles Bierce . . . . . *Chicago, Ill.*
Holland, Ernest Otto, A.B., (*Univ. of Ind.*), 1895, *Bloomington, Ind.*
Hooker, Ava Lucille Salisbury . . . . . *Geneseo*
Hooper, Caroline Alice . . . . . *New York City*
Hopkins, Rupert Henry, M.S., (*Wesleyan Univ.*), 1894, . . *Cazenovia*
Hopkinson, George, A.B., (*Brown Univ.*), 1896, . . . *Westford, Vt.*
Howe, Samuel Purdy . . . . . *New York City*
Howell, Minnie Edna, (*L. I. Peabody Normal Coll.*), 1889,
New Orleans, La.
Hughes, James Rowland, A.B., (*Bucknell*), 1894, . . . *Scranton, Pa.*
Humphrey, Bercy Anna, ... *Trenton, N. J.*
Hunziker, Otto Fred, ... *Zurich, Switzerland*

Hunt, Frederick Burton, B.S., (*Pa. Normal*), 1891, A.B., (*Bucknell*), 1896, ... *Clark's Summit, Pa.*
Hunt, Leigh Richmond, A.B., (*Hamilton Coll.*), 1874, Pd.D., (*Syracuse Univ.*), 1889, ... *Corning*
Hurd, Mary Bell, ... *Gilbertsville*
Ihlder, John William, ... *Yonkers*
Jackson, Daisy Lee, ... *Washington, D. C.*
Jarnagin, Eula, A.B., (*Rogerville School*), 1894, *Chattanooga, Tenn.*
Jennings, Gould James, ... *New York City*
Jones, Harold Colbert, ... *Chicago, Ill.*
Jones, Lillian Victoria, ... *Indianapolis, Ind.*
Jones, Olivia Mary, ... *New York City*
Kappes, Lillian Frances, ... *New York City*
Karpinski, Louis Charles, ... *Oswego*
Keliher, Mary Edith, ... *Geneva*
Kelly, Joseph Thomas, Jr., ... *Washington, D. C.*
Kelly, Sarah Marie, ... *Ithaca*
Ketchum, Arabella, ... *New York City*
Ketchum, Elvin Sidney, ... *Lockwood*
Keyes, Angela Mary, ... *Brooklyn*
Keyes, Katharine Mary Agnes, ... *Brooklyn*
Kingman, Annie Rowe, ... *North Chatham*
Kirkland, Robert MacDonald, A,B., (*Univ. of Chicago*), 1899, *New Berlin*
Knowles, Carroll, B.S. (*R. I. Coll.*), 1899, . . . *Kingston, R. I.*
Kohut, Margaret, ... *New York City*
Kornmann, Elsie Wilhelmine, Pd.M. (*New York Univ.*), 1895, *New York City*
Lamson, Della Hathaway, ... *Montour Falls*
Lamson, Fred Leonard, A.B. (*Univ. of Rochester*), 1896, *Montour Falls*
Lamson, George Rodney, ... *Montour Falls*
Langley, Jane, ... *Allegan, Mich.*
Laughlin, Arthur Pumroy, A.B. (*Oberlin, Coll.*), 1896, M.S. (*Ohio Wesleyan Univ.*), 1899, ... *Oberlin, Ohio*
Ledyard, Wolters, ... *Cazenovia*
Leggett, Katharine Dick, ... *Flushing*
Leyden, Elizabeth, Ph.B. (*Syracuse Univ.*), 1887, Ph.M. (*same*) 1887, ... *Syracuse*
Lindsey, Maud, ... *Lockport*
Lockwood, Cornelius Wygant, S.B. (*Harvard*), 1899, . . *Newburgh*
Lonergan, Philip Edward, ... *Elmira*

Love, Andrew Cavitt, B.S. (*A. & M. Coll. of Texas*) 1899, *College Sta., Texas*
Lowe, Nathan Joseph, Pd.B. (*Albany Normal Coll.*), 1893, *New York City*
Ludlow, Clara Southmayd, ... *Agricultural Coll. Miss.*
Ludwig, Augustus, B.S. (*Coll. City of New York*), 1897, *New York City*
Lyon, Anna Webb, ... *Kings Ferry*
McAdam, Jeanie Elizabeth, ... *Ridge Mills*
McCallie, Grace, A.B., (*Bellewood Sem.*), 1884, . *Chattanooga, Tenn.*
McClary, Samuel, III, ... *Wilmington, Del.*
McCutchen, George Boyd, A.B., (*Wash. and Jefferson Coll.*), 1888, *Washington, Pa.*
McFalls, Alida, ... *Gouverneur*
McFarland, Lavinia, ... *Indianapolis, Ind.*
McGowan, Anna Teresa, ... *Winfield*
McGrew, Blanche Harwood, ... *Westville, Ohio*
McMillen, Harlow, A.B., (*Union*), 1887, Pd.B., (*State Normal Coll.*), *Tottenville*
Macomber, Irwin John, M.E., 1888, ... *Chicago, Ill.*
McRae, Frank George, ... *Schuylerville*
Magone, Sarah Louise, B.A., (*Wellesley*), 1889, . . . *Ogdensburg*
Magovern, Mary Ann, ... *New York City*
Malone, Rose Veronica, ... *New York City*
Mann, Nellie Lucina, ... *Brooklyn*
Mann, Paul Blakeslee, ... *Potsdam*
Mansfield, Edith, ... *Indiana, Pa.*
Mastick, Agnes Warner, Ph.B., (*Oberlin*), 1892, . . *New York City*
Mastick, Seabury Leone, A.B., (*Oberlin*), 1891, A.M., (*same*), 1893, LL.B., (*Univ. of California*), 1894, ... *New York City*
Merrill, Ida Louise, ... *Copenhagen*
Merritt, Grace Louise, ... *Kingston*
Middleton, George Izard, ... *Charleston, S. C.*
Miller, Kate Reed, ... *Brooklyn*
Miller, Louise, ... *Dayton, Ohio*
Miller, Persis Kible, ... *Cortland*
Minor, Katharin Brown, ... *Yonkers*
Mintz, Fannie Sankston, ... *Ithaca*
Moffett, Edna Virginia, B.A., (*Vassar*), 1897, ... *Richmond, Va.*
Monell, Kate Helen, ... *Rochester*
Montgomery, Sadie Louise, ... *Springfield, Ill.*
Moon, Claude Elton, ... *Canastota*

Mooney, Lucia Mabel, ... *Erie, Pa.*
Moore, Clara Boughton, ... *Troy*
Moore, Lucy Peck, ... *Troy*
Moores, Grace, ... *Troy*
Moorhead, May Nickels, ... *New York City*
Morey, John Ross, A.B., (*Union*), 1893, A.M., (*same*), 1893, *Burnt Hills*
Morey, James Smith, ... *Brooklyn*
Murray. Mabel, ... *Ithaca*
Myers, Clara Louise, B.S., (*Ohio Nor. Univ.*), 1887, Ph.B., (*Cornell*), 1896, ... *New Philadelphia, O.*
Myers, Olive Ann, ... *Ithaca*
Myrick, Harriette Augusta, ... *Clinton*
Nash, Williametta Orton, ... *So. Norwalk, Conn.*
Ney, Frances Hume, ... *Buffalo*
Nichols, Charles Edward, ... *Mt. Vernon*
Nichols, Ellen Elizabeth, ... *Brooklyn*
Nicholson, Louise, A.B., (*Syracuse Univ.*), 1892, . . . *Jordan*
Norton, Eugene Levering, ... *Baltimore, Md.*
Nye, Nettie, ... *Scranton, Pa.*
O'Malley, James, ... *Buffalo*
Otte, Mary Sophie . . . . . *Brooklyn*
Overacker, Minnie Louise . . . . . *Syracuse*
Palmer, Luella Angelina . . . . . *New York City*
Parker, Addie Viola . . . . . *Indianapolis, Ind.*
Parkinson, Sara Brooke . . . . . *Dayton, Ohio*
Parsons, Marion . . . . . *Sing Sing*
Patrick, Marian . . . . . *New Philadelphia, Ohio*
Patteson, Sarah Gay . . . . . *Manchester, Va.*
Payne, Katherine M., M.E., (*Mansfield State Nor. School*), 1893, *Morris, Pa.*
Pease, Herbert Dodge, M.B., (*Univ. of Toronto*), 1893, . *Buffalo*
Peck, Fannie . . . . . *Toledo, Ohio*
Peck, Gertrude Bard . . . . . *Mt. Vernon*
Peck, Helen Halsted Conant . . . . . *Pelham Manor*
Perkins, Fred Clark . . . . . *N. Townsend, Mass.*
Phillips, Helen Moore, Ph.B., (*Washington Univ.*), 1891, *St. Louis, Mo.*
Picolet, Lucien Emile . . . . . *Philadelphia, Pa.*
Piercy, Anna Grace . . . . . *Brooklyn*
Pietsch, Nellie Youngs . . . . . *New York City*
Player, Preston, A.B., (*Harvard*), 1898, ... *Worcester, Mass.*

Potter, Jennie Louise . . . . . *Flushing*
Pounding, Eloise . . . . . *East Hampton*
Powers, Minnie Minton . . . . . *So. Oxford*
Pretzfeld, Charles Joseph, B.A., (*Columbia Univ.*), 1898, *New York City*
Quarles, Lucy, A.M., (*Minden Coll.*), 1875, . . *Galveston, Tex.*
Rahe, Anna Catherine, ... *Indianapolis, Ind.*
Rausch, Sophie Amelia, ... *College Point*
Ray, Fred Donald, ... *Port Huron, Mich.*
Rehorn, Eunice Dibble, ... *New York City*
Reynolds, James Joseph, B.S., (*Coll. City of N. Y.*), 1893, LL.B., (*New York Univ.*), 1896, ... *New York City*
Reynolds, Virginia, ... *Kittanning, Pa.*
Rice, David Edgar, A.B., (*Penn Coll.*), 1896, A.M., (*same*), 1899, *Chambersburg, Pa.*
Richards, Mary Helena, ... *Newark, N. J.*
Ritter, Alice Emily Borgfeldt, ... *Brooklyn*
Roberts, Caroline, ... *Baltimore, Md.*
Roberts, Fanny Elizabeth, ... *Yonkers*
Roberts, Lewis Denzil, A.B., 1897, ... *Portville*
Robinson, Ella Augusta, ... *Chittenango*
Robinson, Emma Crasto, B.S., (*St. Lawrence Univ.*), 1896, *Mt. Vernon*
Robinson, Helen Minnie, ... *McLean*
Robinson, Lydia Agnes, ... *Bell Air, Md.*
Robinson, Margaret Minerva, ... *Frederick, Md.*
Roche, Mary Lillian . . . . . *Ithaca*
Rockwood, Frederick Thomas . . . . . *Elmhurst, Ill.*
Rodgers, Minna Hamilton, ... *Ithaca*
Roe, Christina Logan, ... *New York City*
Roeder, Adele, ... *New York City*
Roeder, Amelia . . . . . *New York City*
Rosenberg, Jacob George, ... *Rochester*
Root, Lydia Fidelia, A.B., 1896, ... *Skaneateles*
Russell, Leroy Carter, B.S., (*Middlebury Coll.*), 1897, . . . *Buffalo*
Ryan, John Patrick, ... *Medina*
Ryan, Margaret Jane, ... *Medina*
Sadler, Flora Hermione, ... *Brooklyn*
Samain, Helen Frances, ... *Rochester*
Sanford, Alice Isabel, ... *West Torrington, Conn.*
Sargent, Harriett Betsy, ... *South Gardner, Mass.*
Schoedde, Emma, ... *West Troy*

Schoellkopf, Henry, ... *Milwaukee, Wis.*
Schulenberg, William Louis, ... *Dunkirk*
Schussler, Amy . . . . . *New York City*
Schweizer, Isabelle, ... *New York City*
Scott, George Winfield, A.B. (*Stanford Univ.*), 1896, . . *Chicago, Ill.*
Seelman, Caroline Ruth, ... *Brooklyn*
Seelman, Hannah Elizabeth, B.A. (*Wellesley Coll.*), 1898, *Brooklyn*
Seymour, Emily Ketchum, ... *Buffalo*
Seymour Laura . . . . . *New York City*
Seymour, Mary Floribell, ... *New York City*
Share, Mary . . . . . *Indianapolis, Ind.*
Shaver, Ida Agnes, ... *Chicago, Ill.*
Sheppard, James J, A.B. (*Harvard*), 1894, ... *New York City*
Sherrard, Robert Maurice, A.B. (*Washington and Jefferson*), 1891, A.M. (*same*), 1894, ... *Indiana, Pa.*
Shields, Charles McLean, ... *Springfield, Mass.*
Shoemaker, Cornelia Janney, B.L. (*Swarthmore*), 1894, *Philmont, Va.*
Shutes, Elizabeth Weed, ... *New York City*
Shutes, Marianna, ... *New York City*
Simmons, Henry Gassett, ... *Newport, R. I.*
Simpson, Frank Morton, A.B., (*Bucknell Univ.*), 1895, M.S., (*same*), 1897, ... *Delhi*
Sims, Agnes Anderson, ... *Troy*
Singer, Simon Augustus, A.B., (*Capital Univ.*), 1896, . *Mapleton, O.*
Sipe, Susan Bender, ... *Washington, D. C.*
Sister Mary Bernardine, ... *Rochester*
Sister Mary Boniface, ... *Rochester*
Sister Mary Lucina, ... *Rochester*
Sister Teresa Marie, ... *Rochester*
Skinner, Lucy Purchase, ... *Brooklyn*
Slover, Minnie Elizabeth, ... *Brooklyn*
Smith, Bertram Garner, M.E., (*Edinboro State Normal*), 1898, *Youngsville, Pa.*
Smith, Francis de Sales, B.S., (*Catholic Univ.*), 1898, *Washington, D. C.*
Smith, Mary Boynton, ... *Williamsport, Pa.*
Smith, Mary Helen, S.B., (*Oberlin*),1887, M.A., (*same*), 1894, *Farmington, Conn.*
Smith, Robert Frederic, B.S., (*Coll. City of New York*), 1887, *New York City*
Smithe, Percy Allis, ... *Medina*

Smyser, Myrtle Laura, Lit et Art B., (*DePauw Univ.*), *Indianapolis, Ind.*
Snyder, George B McClellan, B.S., 1892, ... *Mina*
Spingarn, Alexander, B.S., (*Coll. City of New York*), 1897, *Brooklyn*
Stagg, Jay Earhart, ... *Buffalo*
Starr, Everett Garrett, ... *San Francisco, Cal.*
Stevens, Harold Burr, ... *Rome*
Strayer, Franklin Reece, A.B., (*Bucknell*), 1894, . . *Bethlehem, Pa.*
Street, Helen Dougal, A.B., (*Wisc. State Univ.*), 1876, A.M., (*same*), 1879, ... *Chicago, Ill.*
Strobel, George William, Ph.B., (*Colgate*), 1899, . . . *Hamilton*
Studley, Duane, B.S., 1881, ... *Bloomington, Ind.*
Sutphen, Margaret Louise. . . . . *Plainfield, N. J.*
Sutton, Clarence Wesley, ... *Ithaca*
Tag, Frederick Casimir, ... *Brooklyn*
Tayler, Lila, B.S., (*Wellesley*), 1893, M.A., (*Columbian Univ.*), 1899, ... *Washington, D. C.*
Taylor, Benjamin Asbury, B.S., (*A. P. I. of Ala.*), 1896, M.S., (*same*), 1897, ... *Wetumpka, Ala.*
Taylor, Thomas Bassett, ... *New York City*
Terry, Jennie Viola . . . . . *Rosebank*
Thatcher, Martha Columbia, ... *Williamsport, Pa.*
Thayer, Helen Gertrude, ... *New York City*
Thomas, Charles Murdaugh, ... *Washington, D. C.*
Thompson, Edward Payson, A.B., (*Monmouth*), 1879, A.M., (*same*), 1879, ... *Oxford, Ohio*
Thompson, Helen Josephine, ... *Trenton, N. J.*
Tobitt, Mary Inshaw, ... *Brooklyn*
Tourison, Ashton Stephen, Jr., ... *Germantown, Pa.*
Travis, Carrie May . . . . . *Brooklyn*
Trimble, Annetta, ... *Chattanooga, Tenn.*
Tunney, Kate Josephine, ... *New York City*
Uihlein, Edgar John . . . . . *Chicago, Ill.*
Upson, Henry Taber, A.B., (*De Pauw*), 1895, . *Parkersburg, W. Va.*
Vail, George Truesdell, . . . *Michigan City, Ind.*
Vanderhoef, Henry Earnest . . . . . *Ithaca*
Vernon, Orrill H., ... *Brooklyn*
Waddell, Sallie Nash, ... *Columbus, Ga.*
Wagner, Dorothy Augusta . . . . . *Yonkers*
Waide, Frederic Gordon, A.B., (*Western Univ.*), 1899, *London, Ont., Canada*

Walker, Sarah Williams, ... *Cooperstown*
Wallace, William Thompson, ... *Jonesville, Mich.*
Watkins, Sarah Raynor, Pd.M., (*Univ. of N. Y.*), 1891, *New York City*
Weaver, Rosina Boice, M.S., (*Normal School*), 1894, . . *Indiana, Pa.*
Welch, Willis Yardley, ... *Oswego*
Wells, Hugo Daniel, ... *Salt Lake City, Utah*
Whitbread, Jennie Louisa, Ph.B., (*Syracuse Univ.*), 1887, . *Syracuse*
Whitwell, Livingston Miller, ... *Fort Plain*
Whitney, Marion Estella, ... *Ithaca*
Wickershaw, Mary Ann, ... *Westgrove, Pa.*
Wiggins, Emma, ... *Paterson, N. J.*
Wiggins, Sarah Minnie, ... *Montclair, N. J.*
Wilcox, Walter Homer, ... *St. Louis, Mo.*
Wilder, Edward Lyman, A.B. (*Williams Coll.*), 1899, *Hoosick Falls*
Wilkinson, John Jackson, Ph.D. (*Leipzig Univ.*), 1898, *Normal, Ill.*
Williams, Howard Shay, ... *New York City*
Williams, Roger Butler, Jr., ... *Ithaca*
Wilson, Jesse Henry, Jr., ... *Washington, D. C.*
Wilson, Robert North, A.B. (*Haverford Coll.*), 1898, . *Lenoir, N. C.*
Wiseman, Margaret Richie, ... *Mt. Vernon, Iowa*
Wolff, Fannie Emma, ... *New York City*
Woodward, Florence, ... *Fredonia*
Wright, Adelaide Victoria, ... *New York City*
Wright, Ellsworth David, A.B. 1887, Ph.D., 1894, ... *Ithaca*
Young, Charles Duncanson, ... *Washington, D. C.*
Young, Cornelia, ... *Geneva*
Young, John M, B.S. (*Florida Agr. Coll.*), 1898, . . *Okedue, Fla.*

STUDENTS IN SHORT COURSE IN AGRICULTURE.

WINTER, 1899.

Baker, John Byron ..... *Ithaca*
Barlow, Floyd Schoonmaker ..... *South Onondaga*
Barnes, Edgar Arnold ..... *Smithville Flats*
Biglow, Cyrus Murray ..... *Champlain*
Bostwick, George Hall ..... *Northville, Pa.*
Bovingdon, Sidney ..... *Camptown, Pa.*
Bower, Ray Blakly ..... *Genoa*

Briggs, Floyd F.....*Lima*
Briggs, Roy E.....*Lima*
Bull, Daniel Mould.....*Bullville*
Burke, Frank Eugene.....*Church*
Cockburn, Frank Melvin.....*Silver Creek*
Couper, Henry Joseph.....*Morristown*
Cowles, James Samuel.....*Otisco*
Day, Henry Simeon.....*Simpson*
Dean, Daniel Jefferson.....*Nichols*
Dudley, Nathan Chidsey.....*North Guilford, Conn.*
English, Burt.....*Van Etten*
Estabrook, Harold Pitt.....*Saratoga Springs*
Freemyre, Frank.....*Breakabeen*
French, Homer Beals.....*Ellicottville*
Fundis, Carl James.....*Richford*
Gardner, Samuel Brown.....*Ithaca*
Garrett, Charles Jennings.....*Syracuse*
Greene, William Arthur.....*Warsaw*
Harvey, Thomas C.....*Potsdam*
Helmer, Fred Ames.....*Jordanville*
Hodge, James Allen.....*Spragueville*
Howard, William Burr, Jr.....*Ithaca*
Howk, Charles Bradford.....*South New Haven*
Hudson, Frank Erastus.....*Saratoga Springs*
Hungerford, Roy Egan.....*Ithaca*
Jack, Norman Emerson.....*Chateauguay Bay, Que.*
Jacobs, Frank Leonard.....*Jasper*
Jones, Homer Hartwell.....*Homer*
Jones, William Mouldwin.....*Moravia*
Killeen, James Napoleon.....*Skead's Mills, Canada*
Koch, John.....*Southold*
La Mont, George Burkey.....*Albion*
Leonardson, Calvin A.....*Fonda*
Lewis, Lewis Grant.....*Burr's Mills*
Livingston, Peter.....*Sharon*
Longshore, Herbert.....*Canton*
Keyes, Willie Everett.....*Richville*
Mabee, Eddie James.....*West Candor*
McCoy, John.....*Port Chester*
McDermott, James Henry.....*North Bridgewater*
Markham, Winfield Lyman.....*Ellington*
Martin, Erwin Seeley.....*Hermon*

Martin, Paul ---------- *East Rush*
Maynard, Dexter Parmelee ---------- *Erieville*
Miller, Gage Milton ---------- *Chili Center*
Miner, Edward Linn ---------- *Hubbardsville*
Mudge, Ernest Jesse ---------- *Oxford*
Osterhout, Emory ---------- *Cobleskill*
Pattat, John ---------- *Little France*
Potter, Herbert ---------- *Collins Center*
Powell, Erford Henry ---------- *Plymouth*
Raymond, Fred Lewillia ---------- *Denmark*
Reinhold, Ralph Warner ---------- *Milbrook, Conn.*
Rice, William Burdell ---------- *Ivarea, Pa.*
Rickmyer, Walter Ray ---------- *Rome*
Riggs, Harry Whiting ---------- *Albany*
Roach, Horton Lovering ---------- *Akron*
Roe, Alonzo LaVerne ---------- *Plymouth*
Rogers, Samuel R ---------- *Sidney Center*
Rowley, Albert Miles ---------- *Gouverneur*
Salmon, William Case ---------- *Peconic*
Seeley, Fred ---------- *Spencer*
Silvernail, Frank Delapheyette ---------- *Upper Lisle*
Smith, Floyd Jones ---------- *Buffalo*
Smith, Wade Sheridan ---------- *Ivarea, Pa.*
Smith, William Thomas ---------- *Princeville, Va.*
Sprague, Guy Arthur, ---------- *Ames*
Thomas, Brayton Wallace ---------- *Richville*
Thorne, William ---------- *Stamford*
Tuttle, Floyd ---------- *Hubbardsville*
Vance, William Henry ---------- *Brockville, Canada*
Vanderbilt, Levi Albert ---------- *Geneva*
Van Dine, William Homer ---------- *Ithaca*
Van Dusen, Levi Bennett ---------- *Stamford*
Van Order, Arthur H ---------- *Jacksonville*
Van Order, Reuben Harrison ---------- *South Danby*
Verrier, Edmund ---------- *Homer*
Vrooman, Glen Lyell ---------- *North Harpersfield*
Wallace, Arthur Percival ---------- *Morristown*
Wiley, George Wesley ---------- *Calhoun, Ala.*
Winchell, Seymour, Jr. ---------- *Greene*
Wolf, Alfred Joseph ---------- *Brooklyn*

GENERAL SUMMARY.

Government, Teachers, and Other Officers.

TRUSTEES :—		
Ex officio	9	
Elected—By the Board	20	
By the Alumni	10	
Total		39
TEACHERS :—		
Professors	81	
Associate Professors	2	
Assistant Professors	37	
Lecturers	6	
Instructors	103	
Assistants, etc	85	
Total	314	
Non-Resident Lecturers	45	
Whole number of Teachers		359
PREACHERS		28
LIBRARY STAFF		15
OTHER OFFICERS		24

Students.

GRADUATE DEPARTMENT :—		
Fellows	28	
Scholars	16	
Graduates, candidates for Advanced Degrees	153	
Graduates not candidates for Degrees	17	
Total, deducting for names counted twice		170
GRADUATE STUDENTS IN UNDERGRADUATE COURSES		149
ACADEMIC DEPARTMENT :—		
Senior Class	140	
Junior Class	103	
Sophomore Class	161	
Freshman Class	240	
Special Students	20	
Total		664

COLLEGE OF LAW :—

Senior Class	53	
Second Year Class	58	
First Year Class	63	
Special Students	3	
Total		177

THE MEDICAL COLLEGE :—

Senior Class (3 year course)	48	
Senior Class (4 year course)	23	
Junior Class " "	36	
Sophomore Class " "	93	
Freshman Class " "	121	
Special Students	7	
Total		328

COLLEGE OF AGRICULTURE :—

Senior Class	4	
Junior Class	10	
Sophomore Class	9	
Freshman Classs	18	
Special Students	33	
Total		74

STATE COLLEGE OF VETERINARY MEDICINE :—

Third Year Class	7	
Second Year Class	8	
First Year Class	14	
Total		29

STATE COLLEGE OF FORESTRY :—

Senior Class	1	
Junior Class	4	
Sophomore Class	1	
Freshman Class	7	
Special Students	6	
Total		19

COLLEGE OF ARCHITECTURE :—

Senior Class	10	
Junior Class	8	
Sophomore Class	9	
Freshman Class	14	
Special Students	2	
Total		43

COLLEGE OF CIVIL ENGINEERING :—		
Senior Class	31	
Junior Class	47	
Sophomore Class	41	
Freshman Class	78	
Special Students	1	
Total		198
SIBLEY COLLEGE OF MECHANICAL ENGINEERING :—		
Senior Class	84	
Junior Class	91	
Sophomore Class	155	
Freshman Class	211	
Special Students	15	
Total		556
Total, deducting for 18 names counted twice		2240
SUMMER SESSION	424	
Students in Short course in Agriculture (Winter, 1899)	89	

Summary by States.

New York	1394	Rhode Island	8	Washington	2
Pennsylvania	157	Tennessee	7	Idaho	1
Ohio	99	Delaware	6	Mississippi	1
New Jersey	88	Kansas	6	New Mexico	1
Illinois	67	Minnesota	6	Canada	21
Massachusetts	45	Utah	6	Russia	6
Dist. of Columbia	29	Colorado	5	Mexico	4
Indiana	28	Georgia	4	Cuba	3
Maryland	28	Oregon	4	Germany	3
Connecticut	25	South Carolina	4	Japan	3
Missouri	23	West Virginia	4	Switzerland	2
Michigan	22	Alabama	3	Brazil	1
Iowa	19	Florida	3	Columbia	1
Wisconsin	17	Louisiana	3	New Zealand	1
Maine	12	Vermont	3	Nicaraugua	1
California	12	Arkansas	2	Norway	1
Virginia	12	Nebraska	2	Sweeden	1
Texas	11	New Hampshire	2	Turkey (Asia)	1
Kentucky	8	North Dakota	2		
North Carolina	8	Montana	2	Total	2240

THIRTY-FIRST ANNUAL COMMENCEMENT.

June 22, 1899.

DEGREES CONFERRED.

FIRST DEGREES.

Bachelors of Arts.

Lizzie Louise Abeling,
Mabelle Winifred Adams,
Thomas Evarts Adams,
James Arthur Andrew,
Edith Sarah Arnold,
Susane Emma Arthur,
Helen Pauline Baird,
Edith Mae Bickham,
Edith Elvira Bloomingdale,
Nancy Fairfax Brown,
Nelson Welch Cheney,
Alfred Hull Clark,
Frederick Aldrich Cleveland,
Georgianna Conrow,
Hugh Oliver Cook,
Leon George Crary,
Mary Doherty,
Walter Perry Doig,
Elizabeth Guest Drake,
Elsie Ross Engle,
George Abram Everett,
Henry Hubbard Foster,
Carolyn Bell Gaylord,
Mary Katherine Gloth,
Walter Wing Hay,
John Howard Holmes,
Nellie Louise Hopkins,
Helen J Huebener,
Myrta Eleanor Hunn,
Amy Jacqueline Jennings,
Guernsey Read Jewett,
Sarah Helen Ewing Johnston,
Mary Frances Kellogg,
Sara Cecelia Knox,
Herbert Blanchard Lee,
Mary Lisle McCollom,
Grace Ethelyn McGonegal,
Elijah Bailey McNutt,
Emily Dart Martin,
William Carrington Richardson,
Arabel Robinson,
Lex Robinson,
Gideon Pitts Short,
Oscar Francis Smith,
William Henry Standring,
Edward Livingston Stevens,
George Pendleton Watkins,
Bertha Augusta Whitney,
Helen Elisabeth Wilson,
Charles Van Patten Young.

Bachelors of Philosophy.

Theodore Layton Bailey,
Nettie Tripp Blaine,
Nellie Carpenter,
Clarence Elbert Corwin,
Oliver James Covell,
Esther Mercy Davis,
Evelyn Hakes Dennis,
Grace Boorman Dowling,
Homer Howell Gage,
Mary Brownson Gillmore,
Royal Storrs Haynes,
Edmund Howard Hollands,
Claude Lorraine Kinney,
Estelle Adelaide Leach,
Stuart Johnson Lowery,
Robert Stevenson MacDonald,
Charlotte Moore,
Chester Murray,
Jane Elizabeth Reamer,
Lewis Edgar Shanks,
Helen Elizabeth Thalman,
Lucy Pansy Torrance,
Frank Hanley Vedder,
Henry Wilkes Wright.

IN HISTORY AND POLITICAL SCIENCE.

Frances Elizabeth Chapman,
Herman Ralph Mead.

Bachelors of Letters.

Chauncey Scranton Goodrich,
Albert Henry Kimble,
John Joseph McMahon,
Mortimore Emanuel Wile,
Perry Edward Wurst.

Bachelors of Science.

Evelyn Eglinton Andrews,
John Hammond Barker,
Ray Carlton Bateman,
Howard Abiah Baylis,
Noel Sisson Bennett,
Garrick Mallory Borden,
Alice Gertrude Brickelmaier,
Edwin Sewall Browne,
Faith Browning,
John Alexander Caldwell,
Herman Everette Clark,
Anna Maria Crans,
Allen Norton Drake,
Frederick Everett,
Margaret Clay Ferguson,
Louisa Fitts,
Walter Diedrich Gerken,
Dean Miltimore,
Roscoe Blake Morton,
Mortimer Ostheimer,
Ernest Alanson Pattengill, B.S.A.,
Clarence Arthur Perry,
Harry Ami Porter,
Hugh Daniel Reed,
Wandell B Secor,
Burgess Shank,
Charles Baird Simpson, B.S.,
Edmund Sewall Smith,
William Jackson Sweeney, LL.B.,
Judson Merrick Taber,
Thomas Maurice Talbott,
Walter Clark Teagle,
John Edgar Teeple,
Eugene Delphin Thebaud,

Walter Glenn Harper,
Shirley Nathaniel Combs Hicks,
William Atwood Hilton,
Harold Allen Holly,
Louis Howell Hood,
Millicent Beecher Hopkins,
Frances Helen Hunt,
Stephen Dod Inslee,
Gerhard H Jensen,
Walter Ray Knapp,
Helen Marian Latting,
Ernest Allan Miller,
Emma Jane Traxel,
Cornelia Burton Trowbridge,
Joseph Emery Ward,
William Felter Waterbury,
Grace Salisbury Waterman,
Julius Weiss,
Arthur Lewis Wessels, B.S.,
Charles Crawford Whinery,
John Harvey Wilson, Ph.B.,
George Yost,
Adelaide Taber Young,
Joseph Witham Young,
Walter Martin Zink.

Bachelors of Law.

Ellis Leeds Aldrich, B.L.,
Ralph Vernon Alexander,
Herrick Cleveland Allen,
Burton Hoag Brownell, A.B.,
Louis Hamilton Carr,
Leland Alonson Colton,
Charles Talcott Ellis,
James Burton Fenton, A.B.,
Otis Howard Gardner,
Clinton Thompson Horton, A.B.,
Orson Cary Hoyt,
Robert Loomis Humiston, A.B.,
Ernest Gustav Lorenzen, Ph.B.,
Ivo James McGinity,
Francis M McKinley,
George Jefferson Mersereau,
Rice Miller,
Charles Clinton Page,
Walter Lacey Pate,
Robert Harris Ripley,
Walter Campbell Stevens,
John Morris Sutton, B.S.,
Andrew Edward Tuck, Ph.B.,
Philip Maxwell Walter, B.S.,
Frederick William Youmans.

Doctors of Medicine.

Jacob Berenson, Ph.G.,
Inslee Hopper Berry,
Alexander Reuben Elkin,
Max Gottesman,
George Aloysius Henriquez,
Henry Thomas Kurtz,
Gertrude Rochester,
Francis Joseph VanNoort.

Bachelors of the Science of Agriculture.

Paul Howard Buck,
Daniel B Clark,
Jacob Hoover Cowen, B.S.,
Leslie Cleveland Harlow,
Heinrich Hasselbring,
Henry William Jeffers,
Asa Carlton King,
John William Lloyd, B.S.,
James Otis Martin,
Walter Mulford,
Edwin Regur Sweetland,
Charles Halsted Yates.

Doctors of Veterinary Medicine.

Pierre Augustine Fish, B.S., D.Sc., D.V.S.,
Carl Warren Gay,
Henry Wright Illston,
Chester Ransom Perkins,
Charles Beecher Potter,
Floyd Gage Scammel, D.V.S.

Bachelors of Architecture.

Eugene Scott Ballard,
Harold Mortimer Bowdoin,
Charles David Eckler,
Frank Eurich, Jr.,
Harry Finch Howes,
Thomas Clifford McElroy,
Edgar Nichols Pratt,
Jay Van Everen.

Civil Engineers.

Arthur Prentiss Adair, C.E.,
Calvin Lewis Barton,
Clifford Hubbard Belden,
Heyman Ely Bertolet, B.S.,
Ernest David Button,
Marius Schoonmaker Darrow,
Wilton Joseph Darrow,
Harry Whiting Dennis,
Arthur Hoyt Dunlap, B.S. in C.E.,
Nathan Stilson Fisher,
Wager Fisher,
Frank Lawton Getman,
Walter Joseph Graves,
Anson Holbrook Higley,
Erwin Eugene Lanpher,
Archie Byron Leuder,
Leslie McHarg,
Ogden Merrill,
Egbert Jessup Moore,
Elijah Hunter Owen, Ph.B.,
Malcolm Asher Rue,
Robert Cromwell Taylor,
Alexander Thomson, Jr.,
Chester Torrance,
Arthur Underhill,
Abraham Underhill Whitson,
Friend Pitts Williams,
Henry Amerman Young,

Henry Everett Blake, B.C.E.,
Richard Russell Upjohn, B.C.E.

Mechanical Engineers.

William Kent Auchincloss,
John Serpell Avery,
Eliphalet Austin Barnes,
Francis Eugene Blake,
Charles Henry Brustlein, B.S.,
John Richard Caldwell,
Emmett Browning Carter,
Francis Mills Case,
Erwin Stratton Cooley,
Irving Chauncey Lewis,
Arthur Roe Mabey,
Robert Carr Meysenburg,
William Booth Miller, B.S. in Eng.,
William Raymond Miller,
Max Howard Miner,
Nelson Kingsland Moody,
Herbert Fisher Moore,
Ralph Switzer Moore,

Robert Irving Davidson,
Wilber Howard Dickerson,
John Henry Doughty, Jr.,
Ernest Allen Drake,
Schuyler Lyon Fisher,
William James Fullerton,
James Francis Goodman,
George Samuel Goodwin,
Norman Judd Gould,
Harry Andrew Hageman,
Ralph Hayward,
Harry Lyman Hibbard,
Ebenezer Hill, Jr., A.B.,
John Stuart Hills,
Eads Johnson, B.E.,
Henry Smith Johnson,
Ely Merrick Kinney,
Frank Barnes Klock,
Edwin James Lewis,
John Norris Mowery, A.B.,
Nelson Easton Otterson,
Alonzo Hammond Partridge,
John Walter Prince,
Arthur Beavers Raymond,
Julius Emil Reinhardt,
Laurence Irving Scott,
Mather Williams Sherwood,
Robert Lee Shipman,
William Griffith Sloan,
Henry Pratt Smith,
Albert Stamford,
George Henry Stanion,
Alonzo George Trumbull,
Maxwell Mayhew Upson,
Pedro Urguiza y Bea,
Samuel Wiley Wakeman,
Robert Galen Ware, Jr.,
Samuel Brent Whinery.

Mechanical Engineers (in Electrical Engineering).

Jesse Edmund Barney,
Clyde Albion Berry,
Robert Byron Blakeslee,
John Cornelius Brocksmit,
Fred Lafayette Bryant,
Stuart Dickinson Bullock,
Frank Hall Eastman,
Frank Malcolm Farmer,
William Gordon,
Elbert Allen Hawkins,
Walter Furman Kelley,
Emil Christian Loetscher,
Stewart McDonald,
Fredellia Hughes Moyer,
Martin Henry Offinger,
John William O'Leary,
Arthur Garwood Rakestraw,
William Ransom,
Champlain Lord Riley,
Dwight Carrington Rockwood,
John Enoch Rutzler,
Fleming Saunders,
Louis James Smith,
Hermann Spoehrer,
Henry Nathan Sporborg,
William Boyd Stamford,
H Worthington Talbott,
Joseph Beard Tinker,
Adolph Law Voege,
Erastus Lovette West,
John Beaver White, B.S.,
Arthur Frederick Wines,
Walter Clark Yeatman.

Masters of Art.

Virginia Alexander, A.B.,
Grace Hannah Brewster, A.B.,
Leon Wilson Hartman, B.S.,
Edwin Haviland, Jr., B.S.,

Judson Freeman Clark, B.S. in Agr.,
Alleine Belle Davis, B.L.,
Eva Cynthia Earll, Ph.B.,
Arthur William Fisher, Ph.B.,
Eva Woodward Grey, A.B.,
Alice Marie Hutchings, B.L.,
Ivy Kellerman, A.B.,
Frederick Edward Kester, M.E.,
Francis Shanor Kinder, Ph.B.,
Mary Elizabeth Macauley, A.B.,
Donald Alexander McRae, A.B.,
Louise Harriet Paisley, A.B.

Masters of Science in Agriculture.

John Craig, B.S.,
Raymond Pearson, B.S. in Agr.,
Homer Charles Price, B.S. in Agr.

Masters of Civil Engineering.

Charles Church More, C.E.,
George Gates Smith, Jr., C.E.

Masters of Mechanical Engineering.

Albert Barnes, M.E.,
Edward Parker Burrell, M.E.,
Dean Clark, M.E.,
William James Fullerton,
Arthur William Richter, B.M.E., M.E.,
Ezra Frederick Scattergood, B.S., M.S.,
Oliver Shantz, M.E.,

Doctors of Philosophy.

Grace Neal Dolson, A.B.,
Charles Love Durham, A.M.,
William Scott Ferguson, A.B., A.M.,
Patrick Beveridge Kennedy, B.S. in Agr.,
Darwin Abbot Morton, B.S.,
Alice Downey Porter, A.B., A.M.
George Lawrence Scherger, A.B.

Certificates Awarded.

Teachers' Certificates:
Albert Henry Kimble ---------- Germanic Languages
Helen Elisabeth Wilson ---------- English

Prizes Awarded.

The Sibley Prizes in Mechanic Arts:
1st Prize ---------- Roger Alexander Millar
2d Prize ---------- Clyde D Gray
3d Prize ---------- Augustine Ridenour Ayers
4th Prize ---------- Clarence Jeremiah Gomph
5th Prize ---------- John Walter Prince

The H. K. White Prizes in Veterinary Science :

Harry Wright Illston.
Carl Warren Gay.

The Mrs. A. S. Barnes Shakespeare Prize :

Mary Elizabeth Macauley, A.B.

The Woodford Prize in Oratory :

Herbert Blanchard Lee.

The Eighty-Six Memorial Prize in Declamation :

William Osgood Morgan.

The Ninety-Four Memorial Prize in Debate :

James Bennett Nolan.

The Fuertes Medal :

Frederick Eugene Turneaure, B.C.E.

The Thesis Prize in the College of Law :

Burton Hoag Brownell, A.B.

Special Mention.

Awarded for special study with marked proficiency in particular lines during the last two years of the course.

Lizzie Louise Abeling ---- Germanic Languages
Helen Pauline Baird ---- English
Roy Carlton Bateman ---- Chemistry
Edith Mae Bickham ---- Greek
Edith Elvira Bloomingdale ---- Greek and Latin
Herman Everette Clark ---- Romance Languages
Frederick Aldrich Cleveland ---- History
Georgianna Conrow ---- Romance Languages
Clarence Elbert Corwin ---- Romance Languages
Homer Howell Gage ---- Romance Languages
Helen J Huebener ---- English Literature
Myrta Eleanor Hunn ---- Latin
Amy Jacqueline Jennings ---- Latin
Mary Frances Kellogg ---- Greek and Latin
Albert Henry Kimble ---- Germanic Languages
Walter Ray Knapp ---- Chemistry
Sara Cecelia Knox ---- Latin
Chester Murray ---- Romance and Germanic Languages
Jane Elizabeth Reamer ---- Germanic Languages
Lewis Edgar Shanks ---- Romance Languages
Edmund Sewell Smith ---- Chemistry
Judson Merrick Taber ---- Chemistry

Eugene Delphin Thébaud ..... Chemistry
Frank Hanley Vedder ..... Political Science
Helen Elisabeth Wilson ..... English

Doctors of Medicine.

[Conferred June 7, 1899, at the first annual commencement of the Medical College in New York City.]

Edward Adams,
Henry Whipple Allport,
Robert Burns Anderson,
Winifred Davey Banks,
Ellen Emma Bartholomew,
Chauncey Mott Benedict,
Frances Sage Bradley,
Guy Sexton Carpenter,
Charles Edgerton Carter, A.B.,
Edward Joseph Connell, Jr., A.B.,
Harry A Cossitt,
Sally Robinson Creighton,
William Davidson Farrell,
David Simon Fleischhauer,
Joel Grosner,
Robert Kellogg Grove, B.S.,
Fred Guy Hall,
Julia Elizabeth Hatton,
George Waller Hawley, Ph.B.,
Jacob Heller,
Emanuel Alexander Henkle,
Agnew Hodge Hilsman,
Leopold Hirschman,
Isaiah Louis Hoffman.
Nathan Jenks, B.S.,
William Joseph Jones, Jr.,
Frederick Love Keays, A.B.,
Morris Kleinman,
William Levy,
Abraham Lustgarten,
Delia Maria O'Connell, A.B.,
Charles Vito Paterno,
Edward Wadsworth Peterson, M.D.,
John Metcalfe Polk, Ph.B.,
Richard John Ernst Scott, A.B., A.M., B.C.L.,
Ida Sophia Scudder,
Herman Francis Senftner, A.B.,
Walter Addison Shoales,
Margaret Taylor Shutt,
Henry Adolph Siebenborn,
Susan George Southerland,
Charles Abraham Spivacke,
John Harold Tallman,
Clerihew Rutan Treat,
Ruth Tustin,
Ernest Tutschulte,

Glasgow Armstrong, M.D.,
Frank Lamar Christian, M.D.,
Seth Delmar Dice, M.D.,
John Howland, M.D.,
Walter Barry Jennings, M.D.,
Augustus Hamlin Mandell, M.D.,
John Joseph Nutt, M.D.,
Joseph Charles Roper, M.D.,
Lucien Griggs Rice, M.D.,
Arthur Louis Sherrill, M.D.,
Julius Tyndale Westermann, M.D.,
Burt Lynn Wilson, M.D.,
Henry John Wynkoop, Jr., M.D.

ASSOCIATE ALUMNI.

By the charter of the University the graduates are entitled to elect two of the Board of Trustees each year. At a meeting called for the purpose, and held on Wednesday, June 26, 1872, the day preceding the Annual Commencement, representatives of all the classes that had graduated being present, the following organization was effected:

ARTICLES OF ASSOCIATION AS ADOPTED JUNE 26, 1872, AND AFTERWARDS AMENDED.

I. The Alumni of Cornell University hereby constitute themselves an association to be known by the name of the Associate Alumni of Cornell University.

II. The object of this association is declared to be to promote in every proper way the interest of the University, and to foster among the graduates a sentiment of regard for each other and attachment to their Alma Mater.

III. All graduates of this University, who, by their diplomas are entitled electors of the University, are members of this association. All members of the Faculty of this University are honorary members of this association.

IV. The officers of this association shall consist of (1) a president; (2) vice-presidents to be elected as follows: one vice-president from the classes numbered from '69 to '74 inclusive, and one from each succeeding group of five classes, provided that when the last group shall number three classes it shall thereafter be entitled to a vice-president; (3) a corresponding secretary; (4) a recording secretary; (5) a treasurer.

V. This association shall meet annually on the day preceding Commencement, at such hour as the executive committee shall determine.

VI. Any proposition to alter or amend these articles of association must be made at a regular meeting and have the assent of two-thirds of the members present.

By an amendment to the charter of the University, passed May 15, 1883, permitting members of the Alumni, not present in person, to vote by written ballot at the annual election of Trustees, the Treasurer of the University is required to keep "a registry of the signature and

address of each alumnus." It is therefore important that each 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 departments of Cornell University, and all persons who have been admitted to any degree higher than the first in said University shall be alumni of said University, and as such be entitled to vote for Alumni trustees under and in pursuance of the provisions contained in Chapter 763 of the Laws of New York, passed in 1867.

Officers for 1899-1900.

President—John Ford, '90.

Vice-Presidents—G. A. Benton, '71; E. L. Nichols, '75; Mrs. S. P. Gage, '80; H. L. Taylor, '88; H. J. Hagerman, '94; F. D. Colson, '97.

Corresponding Secretary—G. L. Burr, '81, Ithaca, N. Y.

Recording Secretary—G. W. Harris, '73.

Treasurer—H. M. Hibbard, '74, Ithaca, N. Y.

Executive Committee—J. Ford, G. L. Burr, G. W. Harris, H. M. Hibbard, *ex officio*, H. H. Wing, '81, J. S. Shearer, '93.

Auditing Committee—L. Coville, '86; C. H. Blood, '88; E. P. Andrews, '95.

Canvassing Board for Trustee Election—C. L. Crandall, '72; H. C. Olmsted, '85; three remaining members to be appointed as directed in the By-Laws, after the nominations of candidates for alumni trustee have been announced.

Officers of Local Alumni Associations.

(As last reported.)

CENTRAL NEW YORK ASSOCIATION.

President—
Secretary—Percy Clisdell, Corning, N. Y.

ITHACA ASSOCIATION.

Secretary—D. F. VanVleet, '77.

MINNESOTA ASSOCIATION.

President—W. E. Bramhall, '77.
Secretary—O. L. Taylor, '81, St. Paul, Minn.

NEBRASKA ASSOCIATION.

President—A. C. Wakely, '78, Omaha, Neb.
Secretary—Frank Irvine, '80, Omaha, Neb.

NEW ENGLAND CORNELL CLUB,

President—J. T. Auerbach, '90.
Secretary—L. E. Ware, '92, 108 Austin St., Worcester, Mass.

CORNELL UNIVERSITY CLUB OF NEW YORK CITY.

President—William R. Bronk, '80.
Secretary—C. J. Shearn, '90, 56 Wall St., New York City.

NORTHEASTERN PENNSYLVANIA ASSOCIATION.

President—Frederick J. Platt, '92, Cornell Building, Scranton, Pa.
Secretary—H. F. Cox, '97, Scranton, Pa.

PHILADELPHIA ASSOCIATION.

President—A. Falkenau, '78, 108 N. 22nd St., Philadelphia, Pa.
Secretary—S. R. Davis, '96, 3418 Race St., Philadelphia, Pa.

SOUTHWESTERN ASSOCIATION.

President—L. G. Boies, '73, Larned, Kan.
Secretary—E. A. Wagener, '76, 116 West 6th St., Topeka, Kan.

WASHINGTON ASSOCIATION.

President—L. O. Howard, '77, 1336 30th St., Washington, D. C.
Secretary—R. A. Pearson, '94, U. S. Dept. of Agr., Washington, D. C.,

CORNELL ALUMNI ASSOCIATION OF BUFFALO.

President—George K. Birge.
Acting Secretary—J. A. Hamilton, '92, 83 Erie Co. Sav. Bldg, Buffalo, N. Y.

ROCKY MOUNTAIN ASSOCIATION.

President—R. W. Corwin.
Secretary—A. S. Proctor, 1640 Arapahoe, Denver, Col.

CHICAGO ASSOCIATION.

President—C. H. Wells, '90.
Secretary—L. C. Fuller, '97, 112 Dearborn St., 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. Sherer, '83.
Secretary—R. L. LeBoeuf, '92, Municipal Gas Co. Bldg., Albany, N. Y.

ROCHESTER ASSOCIATION.

President—Leon Stern, '89.
Secretary—M. L. Stern, '95, 45 German Ins. Bldg., Rochester, N. Y.

SOUTHERN TIER ASSOCIATION.

President—James McCall, '85.
Secretary—John Bull, Jr., '85, 114 Lake St., Elmira, N. Y.

PITTSBURG ASSOCIATION.

President—George Shiras, '3d.
Secretary—C. B. Auel, '92, Amber Club, Pittsburg, Pa.

BINGHAMTON ASSOCIATION.

President—A. W. Clinton, '72.
Secretary—R. A. Gunnison, '96, Masonic Temple, Binghamton, N. Y.

THE CORNELL WOMAN : GRADUATE ASSOCIATION.

President—Harriet May Mills, '99, Syracuse, N. Y.
Secretary—Mary Ellen Griswold, '91.
Meetings at Ithaca annually on afternoon of Alumni Day.

TOLEDO ALUMNI ASSOCIATION.

President—W. J. Sherman, '77.
Secretary—W. A. Clarke, '92, 16th and Jefferson Sts., Toledo, O.

THE CORNELL CLUB OF ST. LOUIS.

President—Willi Brown, '73.
Secretary—George J. Tansey, '88, 400 S. Broadway, St. Louis, Mo.

Alumni Bureau.

The Alumni Association voted at its meeting in June, 1890, to establish in the University an Alumni Bureau, aud at the annual meeting in June, 1896, incorporated in the By-Laws of the Association the following provision : "There is established an Alumni Bureau for the promotion of the interests of graduates or other ex-students of the University in securing positions. The Alumni Bureau shall be under the general oversight of the executive committee of the Association and in the special charge of the Registrar of the University." In accordance with this resolution a permanent Bureau has been constituted where names are registered with a record of the position desired and of the studies and experience of those who wish situations. To render this organization in the highest degree efficient, it is desired that all interested should communicate as early in the year as possible to the Registrar of the University information of vacancies which may occur in public positions which graduates are prepared to fill. Former students can thus render a constant service to the University, and to successive classes as they graduate. A list of such situations is kept and is available for consultation by all students. Blank forms will be furnished on application to the Registrar.

In accordance with the vote of the Alumni Association, the annual report of the Alumni Trustees, containing a review of the year and such matters affecting the University as interest the Alumni, is sent to all members whose annual dues have been paid. Any Alumnus who shall pay to the Treasurer ten dollars at one time is thereafter exempt from the payment of annual dues. Remittances may be made to the order of the Corresponding Secretary. The last report is now ready for distribution.

The Corresponding Secretary is required to keep a list of the addresses of graduates, and it is requested that he may be notified of changes in the address of any member.

Class Memorials.

(As reported.)

CLASS OF 1872 :—Seventy-two Elm Trees bordering President's Avenue and northern half of East Avenue.

CLASS OF 1873 :—Drinking Fountain in front of McGraw Hall.

CLASS OF 1879 :—Bronze Tablet containing Bust of Bayard Taylor in Sage Chapel.

CLASS OF 1883 :—Portrait of Professor William Dexter Wilson, D.D., LL.D., in University Library.

CLASS OF 1884 :—Portrait of Professor Charles Chauncey Shackford, A.M., in University Library.

CLASS OF 1885 :—Statue of Augustus Caesar in the Museum of Casts.

CLASS OF 1886 :—The '86 Memorial Prize in Declamation. *See University Register, p. 61.*

CLASS OF 1890 :—Cornell Boat House.

CLASS OF 1891 :—The '91 Memorial Fund for Sick Students.

CLASS OF 1892 :—Witherbee Memorial Club House at Percy Field.

CLASS OF 1893 :—Interscholastic League Prizes in Athletics.

CLASS OF 1894 :—The '94 Memorial Prize in Debate. *See University Register, p. 62.*

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.

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