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OF THE VARIOUS

Departments and Institutions

FOR THE YEAR

1899.

VOLUME II.

AUGUSTA
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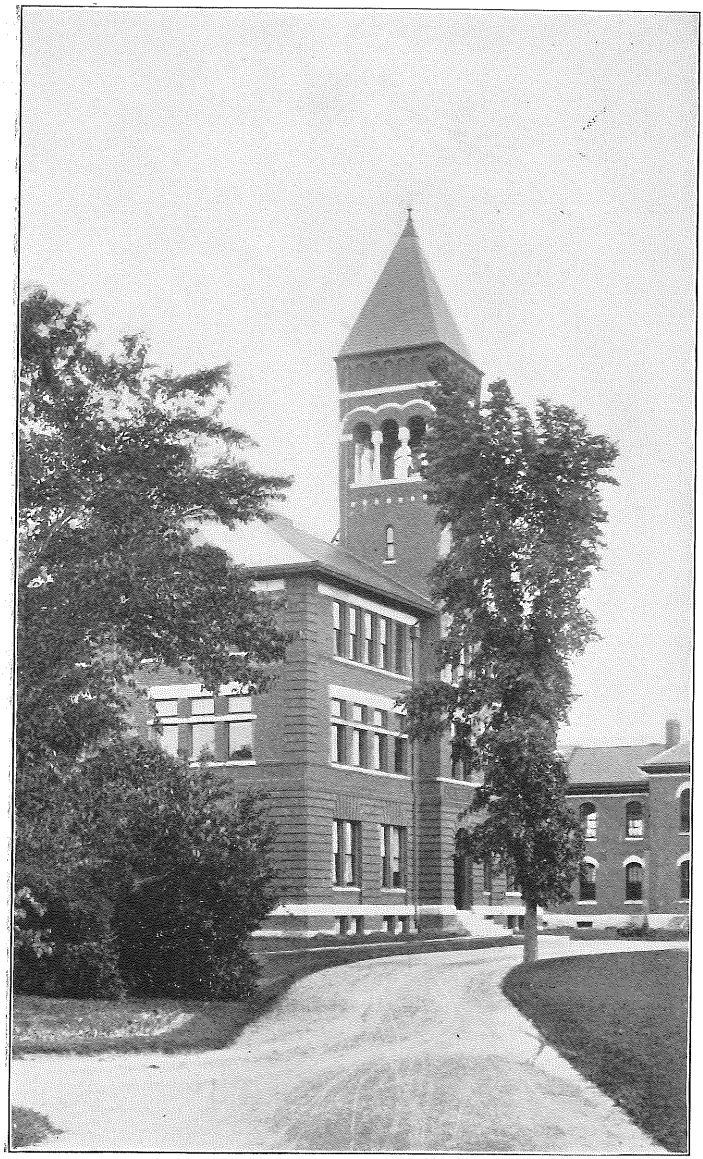

WINGATE HALL.

ANNUAL REPORT

OF THE

UNIVERSITY OF MAINE

FOR THE YEAR 1898.

PART I

PART I—Reports of Trustees, President, Treasurer and Heads of Departments, Annual Catalogue.

PART II—Report of the Director of the Agricultural Experiment Station.

AUGUSTA
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REPORT OF THE BOARD OF TRUSTEES.

To the Honorable Governor and Executive Council of Maine:

The Trustees of the University of Maine respectfully submit their thirtieth annual report, with the reports of the President, Treasurer, and heads of departments.

The past year has been one of prosperity and progress with this institution. Its affairs are in excellent condition, and its work during the year has been carried on in a most satisfactory manner. In April Mr. G. J. Shaw of Hartland retired from the Board of Trustees, after seven years of faithful service. Hon. E. B. Winslow of Portland was appointed his successor. Of the changes in the faculty this report will refer to but one, the withdrawal of Prof. Geo. H. Hamlin, who tendered his resignation in June, 1898, that he might devote his time to his private affairs. Prof. Hamlin was connected with the institution as a member of the faculty for more than twenty-five years, and for several years he held the office of treasurer. For seventeen years he was at the head of the Department of Civil Engineering. During all these years his recognized ability and faithful service did much to advance the reputation of the institution and to promote its growth. The Trustees at their June meeting adopted resolutions expressive of their appreciation of Prof. Hamlin's ability, high character, long and valuable service, and their regret at his resignation.

The campus has been further improved, by the grading of grounds, planting of shrubs and trees and laying out of walks. The buildings are generally in excellent condition. The new Q. T. V. Building, begun last year, was completed in June, and affords agreeable and comfortable accommodations for thirty men. The old Q. T. V. Building has been thoroughly repaired, remodelled and enlarged. From an old structure much out of repair, it has been converted into a pleasant and convenient dormitory for young women students, thereby meeting a want of the University at a moderate cost.

Early in the year the Trustees were led to consider the expediency of establishing in the University a department of law. Convinced after investigation that the expense of such a department would be small at the beginning, and if successful might eventually be self sustaining, they decided to establish such a department, and the School of Law was opened in Bangor, October 5th, under the charge of Prof. Geo. E. Gardner, formerly Professor of Law at the University of Illinois.

Twenty-six students at once availed themselves of the advantages offered, and the School has proceeded successfully and satisfactorily from the beginning.

The University has different needs. Only the most important one will be referred to in this report, the need of a Drill Hall. A building suitable for a Drill Hall can also be used for a Gymnasium and for other purposes. The estimated cost of such a building is thirty thousand dollars. The requirement of the National Government that military drill should be maintained at the college at all times, with the fact that the State virtually agreed to conform to this requirement when it accepted the grant of lands, has been frequently mentioned by the Trustees in their reports. During the winter months this requirement of the National Government cannot be properly complied with, and for that part of each year, until a suitable drill hall is provided, will the State fall short of its duty to the University and fail to keep faith with the Nation. The value of this military drill is generally acknowledged. It not only fits young men to serve efficiently as officers, in case of war, but it is a help to physical development and stamina in the student. The improvement in the bearing and the general appearance of a body of students after a few months' drill is very noticeable. The great value and result of this training in the emergency of war was shown in the prompt response of the students of the University to the call of State and Nation in the war of the past twelve months. That response vindicated the wisdom and foresight of the founders of the Land Grant Colleges, in making the requirement that military drill should be at all times maintained in those institutions. It also went a long way to prove that the intended safeguard of a body of intelligent men, thoroughly trained in military tactics, from which the Government could draw in case of need, had been established; and at a comparatively small expense, when the value of such trained men in time of war is taken into consideration.

The friends of this institution have at this time many reasons for congratulation. Its affairs at no time were in better condition. It was never so well equipped to perform its work. Open alike to young women and young men, it offers the means for a broad and liberal education at a comparatively small cost. It affords advantages in its instruction in Agriculture and the Mechanic Arts to be secured nowhere else within the State. The success of its graduates, especially in industrial and scientific pursuits, has been phenomenal. Its civil, mechanical, and electrical engineers are to-day at work developing the resources and adding to the wealth of nearly every state in the Union. They are to be found connected with the affairs of railroads, water works, highway commissions, electrical plants, cotton and woolen mills, and industrial establishments of every description, distinguishing themselves in their chosen vocations and achieving success. For the generous support given it by State and Nation this institution is making ample return.

HENRY LORD,

President of the Board of Trustees.

REPORT OF THE PRESIDENT.

To the Trustees of the University of Maine:

I have the honor to transmit my sixth annual report as President of the University of Maine, covering the calendar year 1897. I transmit the reports of the heads of departments, and the catalogue for the academic year 1897-8.

This year has been a very quiet one, perhaps the quietest since my connection with the University. The relations existing between members of the faculty have been almost ideal; the relations of the students to the faculty and to their fellow students have been beyond criticism. There has been no case of discipline. I take satisfaction in the sturdy manhood and self devotion which are continually evident as controlling motives among the students. The spiritual interests of the University are keeping pace with its material prosperity.

As this report will come before the Governor and the Legislature, I venture to repeat from former reports, in almost exact form, brief statements in regard to the establishment, work, and name of the University.

GENERAL STATEMENT.

In 1862 Congress passed a law, known as the Land Grant Act, which gave to the States for each senator and representative in Congress, 30,000 acres of public land, the proceeds of which were to be used for the establishment and maintenance of a college. Maine accepted the gift, by act of its Legislature, in 1863, and received 210,000 acres of land, which were sold and yielded an endowment of $118,300, which the State now holds, paying the trustees interest thereon at five per cent. In 1887 Congress passed the Hatch Act granting $15,000 a year to each State, to be used, by the institutions which enjoyed the benefits of the preceding act, in making investigations in the biological sciences and their application to agriculture. This money is for the Agricultural Experiment Station, and no part of it can be used for the payment of the expenses of instruction.

In 1890 the United States provided for the further endowment of the State colleges and universities by the passage of the Morrill Act, under which the University receives a permanent annuity amounting to $24,000, for the current year. The use of this gift is limited to instruction in certain branches.

The results of the generosity of the United States are an endowment of $118,300, yielding $5,915 annually; and two annuities, one of $15,000 and one of $24,000. As the first annuity can be used for the Experiment

Station only, the United States annua. contribution to the instruction expenses of the University is now $29,915.

This grant is accompanied with certain conditions. The more important conditions, roughly stated, require the State: first, to provide a college; second, to restrict the use of the funds received from the United States to certain purposes; and third, to make the college of a specified kind. The State agreed to these conditions, in the acts of the Legislature acceping the gifts of the United States.

In the first place the State agreed to provide an institution which is not to be a school of inferior grade or narrow scope, but a college,—a high grade institution for liberal culture such as the word "college" meant in 1862. This college was to be provided by the State, and not by the United States. It is therefore a State institution, a part of the State public school system, and the State is responsible to see that it has an income sufficient to maintain the work which the State gives it.

In the second place, the State agreed to use the United States funds for certain restricted purposes. The income of the original endowment may not be used for the erection of buildings or their repairs; the college annuity may be used for instruction in certain specified lines only. The insufficiency of the income and the limitations placed upon it, both indicate the need of State aid.

In the third place, the State agreed to maintain a college of a specified kind. In describing it, the United States law says "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 order to promote the liberal and practical education of the industrial classes in the several pursuits and professions of life."

It seems to be the purpose of the law in requiring the teaching of the branches of learning related to agriculture and the mechanic arts, not to exclude all the common subjects of college work, but to make sure that these uncommon features shall be included. They are made the "leading object," but this very expression indicates that they are not the only object. It was not intended that the new college should be like the old college in scope, only with a new kind of work; but it was intended rather that it should have a wider scope, or to follow the phraseology of the act, it was intended that it should furnish a liberal, and a practical preparation, for the several pursuits and professions of life. The work of the college is to be done in such a manner as the legislature may direct.

In accordance with the U. S. Acts the Maine State College was established. The Legislature of 1897, made the Maine State College, the University of Maine. Its trustees are State officers appointed by the Governor, with the consent of the Executive Council.

There are ten courses of study of four years each, leading to degrees. These are conveniently arranged in three groups: the General Courses, intended for general training and liberal culture, including the Classical, Latin-Scientific, and Scientific Courses; the Technical Scientific Courses, including the Chemical, the Agricultural, the Preparatory Medical, and

the Pharmacy Courses; the Engineering Courses, including the Civil, Mechanical, and the Electrical Engineering Courses. The General Courses are largely elective, and may be made courses in mathematics, physics, natural history, or modern languages, if the electives in these subjects are taken. In addition to these, there are short courses in agriculture and pharmacy, intended for practical training.

The faculty is composed of forty-eight persons. The number of students exceeds three hundred. Women are admitted. The University is non-sectarian. The income available for the expenses of instruction consists of the grants from the general government, already mentioned; of $20,000, from the State; and of miscellaneous receipts. The equipment and buildings, worth about one quarter of a million dollars, have been furnished by the State. There are twenty buildings, large and small, of which about half are used for the purposes of instruction.

The law establishing the College, made it the duty of the trustees and other officers to make student expenses as low as possible. Rooms in the dormitory are free, and all other expenses are very low. The annual tuition charge is $30. The average annual expenses of a student are probably about $250. It is safe to say that there is no other college in New England in which student expenses are so low as at Orono.

THE SIGNIFICANCE OF THE NEW NAME.

The word university as used in America has several meanings. It may mean a college offering only the usual classical and allied under-graduate courses; or, at the other extreme, it may mean an institution entirely devoted to graduate work. It most commonly indicates an institution of collegiate grade which offers in addition to the usual under-graduate courses, technical, professional, or graduate courses. It is often more or less perfectly organized in schools, or colleges.

The work of the University of Maine amply justifies the use of the name university in the last sense.

The general courses constitute a school for broad training and general culture; the engineering courses, a school of technology; the scientific courses, a school of science; the agricultural courses, a school of agriculture; and the pharmacy courses, a school of pharmacy. In addition to these are the School of Law, and the Experiment Station, a completely organized department of investigation.

The new name better represents our work than the old one; but neither the trustees, nor alumni, of the old Maine State College; nor the legislature would have thrown aside a name familiar to the people of the State, and endeared to students and graduates by the use and associations of a generation, for this reason only. A more important one exists.

There is another use of the word university. Nearly every state outside of New England, maintains as the cap stone of the public school system, an institution of collegiate grade, usually offering not only courses for general culture and training, but also scientific, technical, and often professional courses. Such institutions have been termed State Universities.

Most of these universities have been established as a result of the same act of Congress, which led to the establishment of the Maine State College.

Almost from the establishment of this institution there have existed two opinions in regard to its development; one favoring a narrower, and the other a wider range of instruction. In spite of opposition, the work of the college has grown broader, slowly but constantly; until in 1895, a York county delegate to the State Grange, offered amid applause the first suggestion that the State College be made the State University. The opposition to expansion culminated in a report presented to the Legislature of 1897 by a committee of the Governor's Council. Issue was joined by a bill to change the name of the College to the University of Maine.

This bill passed the House with a fair majority, and the Senate with a very large one. This change definitely ranked the Maine college with the state universities, and is in accord with the following statement from Emerson's paper on Education:—"I praise New England because it is the country in the world where is the freest expenditure for education. We have already taken, at the planting of the colonies, (for aught I know for the first time in the world), the initial step, which for its importance might have been resisted as the most radical of revolutions, thus deciding at the start the destiny of this country,—this, namely, that the poor man, whom the law does not allow to take an ear of corn when starving, nor a pair of shoes for his freezing feet, is allowed to put his hand into the pocket of the rich, and say, 'You shall educate me, not as you will, but as I will; not alone in the elements, but by further provision, in the languages, in sciences, in the useful and in the elegant arts.' The child shall be taken up by the State, and taught at the public cost, the rudiments of knowledge, and, at last, the ripest results of art and science."

CHANGES IN THE BOARD OF TRUSTEES AND FACULTY.

The term of office of Mr. Greenville Jefferson Shaw of Hartland, as trustee, expired April 17. He was succeeded by the Hon. Edward Brackett Winslow of Portland.

Merritt Caldwell Fernald, Ph. D., who for many years held the chair of mental science while President, has been made Professor of Philosophy.

George Herbert Hamlin, C. E., presented his resignation as Professor of Civil Engineering, during the spring term. He was the senior member of the faculty, having been connected with the University as student or teacher almost from the beginning. The reason for this action was the pressure of private interests.

The faculty testified to their warm affection for Professor Hamlin by tendering him a farewell dinner. The following transcript from the records of the Board of Trustees fitly characterizes the services which he has rendered.

"George H. Hamlin, a graduate of the University in the class of 1872, has served tne University as a member of the faculty from that time

continuously for twenty-six years, and for seventeen years of that time as head of the department of Civil Engineering. During this period, his department has sent forth more than half the graduates of the institution, and the marked success which they have achieved is the proof of the efficiency of his work. Professor Hamlin has always shown an unusual interest in the general welfare and prosperity of the University, and endeared himself by many personal traits to the trustees, faculty, and students.

"Therefore, be it resolved: That we, the Trustees of the University of Maine, record our high appreciation of the personal worth and professional attainments of Professor George H. Hamlin, and his usefulness and success as a teacher of Civil Engineering in this University; that we express our sincere regret that he is to withdraw from the services of the University; that we tender him our hearty wishes for his continued prosperity and happiness, and earnestly bespeak his abiding interest in the University which has received so much of his care and labor."

Allen Ellington Rogers, M. A., Professor of Civics and Logic, has been relieved of psychology and logic, which are transferred to the department of philosophy, and his title has been changed to Professor of Political Economy and History. Professor Rogers has also been appointed Lecturer upon Constitutional Law in the School of Law.

Lucius Herbert Merrill, B. S., formerly instructor in Biological Chemistry, has been given the title of Professor of Biological Chemistry. Professor Merrill is also Chemist to the Experiment Station and gives but a small part of his time to instruction, and for this reason, formerly bore the title of instructor, but as his total salary and rank are those of a full professor, it seems appropriate that he should bear that title.

Herbert Nathan Royden, Professor of Military Science, detailed from the army of the United States by the President, has been ordered to active service with his regiment. The military department is in charge of Mr. Perley Walker, the Instructor in Mechanical Engineering.

Nathan Clifford Grover, B. S., C. E., Associate Professor of Civil Engineering, has been made Professor of Civil Engineering to succeed Professor Hamlin. Professor Grover is a graduate of the University in the class of 1890, and has spent a year in graduate study at the Massachusetts Institute of Technology. He was for three years Instructor in Civil Engineering, for three years Assistant Professor of Civil Engineering, and for one year Associate Professor of Civil Engineering.

Freemont Lincoln Russell, B. S., V. S., Instructor in Biology, has been made Professor of Biology. This is a change of title governed by the considerations already stated in the case of Professor Merrill.

George Enos Gardner, M. A., has been appointed Professor of Law and Dean of the School of Law. Dean Gardner is a graduate of Amherst College, in the class of 1885. He comes to us from the Law School of the University of Illinois in which he was Professor of Law.

Charles Hamlin, M. A., has been appointed Lecturer on Bankruptcy. Mr. Hamlin is Reporter of Decisions for the Supreme Court of Maine.

Judge Lucilius Alonzo Emery, M. A., LL. D., of the Supreme Court, has been appointed lecturer on Roman Law.

Judge Andrew Peters Wiswell, B. A., of the Supreme Court, has been appointed Lecturer on Evidence.

Robert Harper Murray, B. A., LL. M., has been appointed Instructor in Law. Mr. Murray is a graduate of Dalhousie University, and of the Law School of Cornell University.

Forest John Martin, LL. B., has been appointed Lecturer on Pleading and Maine Practice. Mr. Martin is a graduate of the Boston University School of Law.

Louis Carver Southard, M. S., of Boston, has been appointed Lecturer on Medico-Legal Relations.

Hugo Clark, C. E., has been appointed Lecturer on Equity Pleading. Mr. Clark is a graduate of the University of Maine, in the class of 1890.

Edwin Bryant Nichols, B. A., Instructor in Modern Languages, who was absent on leave for the year 1897-8, which was spent in the University of Leipsic, has been promoted to be Assistant Professor of Modern Languages.

Wallace Stedman Elden, M. A., Instructor in Latin and French, has been promoted to be Assistant Professor of Latin and French.

Burton Smith Lanphear, M. E., after a service of three years as Instructor in Electrical Engineering has resigned to accept a position in Cornell University. He is succeeded by Leonard Perley Dickinson, B. S., a graduate of the Massachusetts Institute of Technology in the class of 1896. Mr. Dickinson has been employed since graduation with the American Telegraph and Telephone Company, and with the General Electric Company.

Harvey Waterman Thayer, B. A., Instructor in English and German, resigned at the end of the spring term in order to pursue studies in Germany. He has been succeeded by Reginald Rusden Goodell, M. A., who was last year Instructor in Modern Languages, during the absence of Professor Nichols.

Gellert Alleman, Ph. D., Instructor in Chemistry, resigned at the end of the spring term to accept a position in the Washington University. He has been succeeded by Garnett Ryland, M. A., Ph. D. Dr. Ryland is a graduate of Richmond College, Virginia, in the class of 1892, and received the doctor's degree from Johns Hopkins University in 1898.

Charles Partridge Weston, B. C. E., Tutor in Physics, has been transferred to the department of civil engineering, and appointed Instructor in Civil Engineering. He has been succeeded as Tutor in Physics by Herbert Grove Dorsey, B. A., a graduate of Denison University, in the class of 1897, and a graduate student of the Johns Hopkins University.

Richard Mills Andrews, B. A., Tutor in Mathematics resigned at the end of the spring term to pursue studies in the Graduate School of Harvard University. He has been succeeded by Arthur Robert Crathorne, B. A., a graduate of the University of Illinois.

Stanley John Steward, B. M. E., Instructor in Shop-work, has been made foreman of the shops.

Allen Rogers, B. S., Assistant in Chemistry, has been reappointed for a second year.

The following members of the class of 1898 have been appointed Assistants for the year beginning September, 1898, as noted: Ralph

Hamlin, B. C. E., in Civil Engineering, Ray Herbert Manson, B. M. E., in Electrical Engineering, Elmer Drew Merrill, B. S., in Natural History, Leon Edwin Ryther, B. S., in Physics.

THE STUDENTS.

The number of students for the year ending June, 1898, was 317, exactly the number of the preceding year. It is probable that the number for the year beginning September, 1898, will be about the same. The freshman class is slightly larger than that of last year. The number of new students at the beginning of the college year in September was 142.

The students come in about equal numbers from the farms, and from the cities and villages. About 86 per cent. come from Maine. Every county of Maine is represented. In the table below, the students from Orono, Old Town, and Bangor are grouped separately, as the location of the University makes the attendance from these places abnormally large. The table is made when statistics for the whole number of students are not available, but it is believed that it will be found to represent the whole body with substantial correctness.

MAINE STUDENTS BY COUNTIES.

COUNTIES.	Actual number.	Quota by population.*	Excess.	Deficiency.
Androscoggin	10	14	-	4
Aroostook	11	15	-	4
Cumberland	40	28	12	-
Franklin	8	5	3	-
Hancock	15	12	3	-
Kennebec	17	18	-	1
Knox	7	10	-	3
Lincoln	6	6	-	-
Oxford	5	9	-	4
Penobscot†	19	21	-	2
(Orono, Old Town, Bangor)	60	-	-	-
Piscataquis	9	4	5	-
Sagadahoc	5	6	-	1
Somerset	12	10	2	-
Waldo	11	8	3	-
Washington	10	13	-	3
York	12	18	-	6

*The number which each county would have if the total number were to come from the counties in proportion to their population.

†Omitting Orono, Old Town, and Bangor.

DEGREES CONFERRED.

The following is the list of degrees conferred at the last commencement.

Certificates were presented to the following persons upon completing the Short Course in Pharmacy:

Daniel Lunt Cleaves, Portland.
Fred Elmer Hall, Houlton.
Wilbur Edwin MacDougal, South Lincoln.
Curtis Boyce Mitchell, Unity.

The first degree was conferred upon the following persons:

Fred Wesley Bailey, B. S., (in Pharmacy), Belfast.
Wilson Darling Barron, B. M. E. (in Electricity), Dexter.
Lewis Jefferson Brann, B. S. (in Chemistry), Gardiner.
Charles Parker Crowell, B. M. E., Orono.
Edward Harmon Davis, B. M. E., Auburn.
John Washington Dearborn, B. M. E., Bradford Center.
Samuel Clark Dillingham, B. C. E., Portland.
Walter Dolley, B. S., Gorham.
Leroy Eugene Dow, B. M. E., Portland.
Rena Ethel Dunn, B. S., Orono.
Rossell Olin Dunn, B. C. E., Orono.
Llewellyn Nathaniel Edwards, B. C. E., Oakes.
Walter Lincoln Ellis, B. M. E., Waterville.
Lottie Gertrude Farrar, B. S., (in Chemistry), Bangor.
Gracia Lilian Fernandez, B. S., North Dexter.
George Sherman Frost, B. C. E., Bridgewater, Conn.
Bernard Alston Gibbs, B. Ph., Glenburn.
Ralph Hamlin, B. C. E., Orono.
Harry Allison Higgins, B. M. E., Woodfords.
Bertrand Randall Johnson, B. S., Deering.
George Warren Lawrence, B. M. E., (in Electricity), South Gardiner.
Albion Dana Topliff Libby, B. M. E., (in Electricity), North Scarboro.
Herbert Ivory Libby, B. M. E., Biddeford.
Harry Matthew Lincoln, B. C. E., Bangor.
Ray Herbert Manson, B. M. E., (in Electricity), Gardiner.
Dana True Merrill, B. S., East Auburn.
Elmer Drew Merrill, B. S., East Auburn.
Harrison Pratt Merrill, B. M. E., (in Electricity), Wareham, Mass.
Charles Abram Pearce, B. S., Fort Fairfield.
Leon Edwin Ryther, B. S., Bondsville, Mass.
Fred William Sawtelle, B. C. E., Fryeburg.
Albert Clifford Small, B. M. E., (in Electricity), Lisbon Center.
George Albert Smith, B. M. E., Auburn.
Alden Percy Sprague, B. M. E., Vanceboro.
Alfred Andrews Starbird, B. S., (in Pharmacy), South Paris.
Ray Parker Stevens, B. M. E., (in Electricity), Brooklin.
Edwin Albert Sturgis, B. M. E., (in Electricity), Lewiston.

Roderick Desmond Tarr, B. M. E., Biddeford.
Wilfred Reuben Tolman, B. C. E., Augusta.
Charles Staples Webster, B. S., Portland.
Warner Edwin Welch, B. M. E., Orono.
Horace Loring White, B. S., (in Chemistry), Portland.
George Arthur Whittemore, B. M. E., Framingham, Mass.
Carl Gardner Wiswell, B. M. E., East Machias.

The second degree was conferred upon the following persons, upon presentation of satisfactory theses, and proof of professional and scientific work extending over a period of not less than three years:

Harold Sherburn Boardman, C. E., Bangor.
Hosea Ballou Buck, C. E., Bangor.
George Walter Chamberlin, M. S., Weymouth, Mass.
Ora Willis Knight, M. S., Bangor.
Charles Norton Taylor, C. E., Natick, Mass.

THE LIBRARY.

The library contains 13,051 bound volumes and more than 7,000 pamphlets. The increase during the year is 1,763 volumes, beside pamphlets. This is the largest gain during any year since the establishment of the University. Through the action of Senator Frye the University has been made a depository for government publications.

THE SCHOOL OF LAW.

The School of Law opened October 5, 1898, in Bangor. The faculty consists of

Abram Winegardner Harris, Sc. D., President of the University.
George Enos Gardner, M. A., Professor of Law and Dean.
Allen Ellington Rogers, M. A., Professor of Constitutional Law.
Charles Hamlin, A. M., Lecturer on Insolvency and Probate Practice under the statutes of Maine.
Lucilius Alonzo Emery, M. A., LL. D., Lecturer on Roman Law.
Andrew Peters Wiswell, B. A., Lecturer on Evidence.
Ralph Kneeland Jones, B. S., Librarian.
Robert Harper Murray, B. A., LL. M., Instructor in Law.
Forest John Martin, LL. B., Lecturer on Pleading and Maine Practice.
Louis Carver Southard, M. S., Lecturer on Medico-Legal Relations.
Hugo Clark, C. E., Lecturer on Equity Pleading.

The course runs through two years and will be extended to three when the State requirements for admission to the bar are similarly increased. The year consists of 32 weeks, involving 14 hours study each week. This is a larger amount of work than is usually required in such schools, but it is believed that it can be carried with profit. The school occupies four rooms on the third floor of the Exchange Building at the corner of State and Exchange Streets, Bangor. One room is used as an office, one as a library and reading room, and two as lecture rooms.

The library contains everything deemed absolutely necessary to the proper work of the school, and provision has been made for its steady growth. The number of students registered at the beginning of the fall term was 26, a very encouraging showing. The school is under the immediate control of an advisory board made up of prominent lawyers as follows:

Hon. Henry B. Cleaves, Portland.
Hon. William H. Fogler, Rockland.
Hon. Charles Hamlin, Bangor.
Hon. Herbert M. Heath, Augusta.
Hon. Andrew P. Wiswell, Ellsworth.

The charges are twenty dollars a term, for each of three terms, and ten dollars diploma fee. The school is located in Bangor for several reasons, among which the most imperative is the lack of room in the University buildings at Orono. It may seem wise in the future to bring the school to Orono, but for the present its location in Bangor is necessary.

THE BUILDINGS.

The public buildings are in good condition. During the summer all have been thoroughly repaired. The following additions have been made.

The old White house, built in 1833 and recently occupied by the Q. T. V. Fraternity, has been extended and rebuilt as a dormitory and boarding house for women students. It is upon a site overlooking the campus, and commanding a broad view of the river, villages, and mountains. It is two stories in height, built in the old colonial style, and consists of a long central portion and two wings. It contains parlor, dining-room, kitchen, bath room, and sixteen study rooms, each intended for two students. The rooms are well lighted, heated by a combined system of hot air and hot water, and provided with electric lights from the University plant. A special feature is the long hall on each floor, extending sixty-six feet upon the front of the building, and wide enough to serve as assembly or study rooms. This building is known as the Mt. Vernon House. As the number of women is small, it is at present occupied in part by members of the faculty. It is in charge of Mrs. W. F. Chase as matron.

The Q. T. V. Fraternity has erected for its use a house located upon the campus to the west of the town road, near the southern border of the University property. It was designed by Mr. F. E. Kidder of Denver, Colorado, of the class of 1879. It is in the colonial style, constructed of wood, three stories high, sixty-three feet long and thirty-two feet deep, with an ell.

The main entrance opens into a hall extending through the middle of the main building. On the right is a small reception room; on the left, a parlor and dining-room, each sixteen by twenty-five feet, and connected by sliding doors.

The first floor contains also, a study for students, rooms for the matron, and the kitchen. On the second floor are study rooms for students, and a general sitting room. On the third floor are sleeping rooms. The ell contains rooms for the help, bath-room and store room.

The building is heated by a combined hot air and hot water system, and lighted by electricity.

This house will afford rooms for about thirty men. The Fraternity maintains a boarding club in the building.

NEEDS OF THE UNIVERSITY.

The most pressing need of the University has been income for current expenses. For this purpose the last Legislature appropriated $20,000 a year for ten years. This amount was smaller than the Trustees asked for, but with careful management, it has proved sufficient, although a much larger sum could be used very profitably.

The most imperative need is now for buildings. The present buildings are very much crowded. Almost every department needs more room, although attics and cellars have been fully utilized.

The room in which the faculty and students meet each college day for a brief religious service is not well suited to its use under present conditions. It is already taxed to its utmost capacity, and cannot accommodate any material increase in number. Moreover, it is located on the third floor of Coburn Hall and has but one exit.

It would seem that this need ought to appeal to citizens of the State as a worthy object for their generosity. Nearly all our students are adherents, and a large number of them are members, of the denominations of the State, which have devoted great sums to the up-building of denominational colleges. Do not the motives which have led to these benefactions demand the best care for the religious interest of the students in the State University?

A shop building for the mechanical engineering departments ought to be among the first erected. Wingate Hall, occupied by the engineering departments and the departments of mathematics and physics, would be well filled if entirely devoted to civil engineering, mathematics and physics. The shop building is a cheap wooden shell, too small, and not creditable to either institution or State.

Two additional buildings, like the society houses already completed, at a cost of about $6,000 each, would be a great help. About one-third of the students now find their rooms and board in the villages of Orono and Stillwater. These are a mile and a quarter away. This is too far for walking in bad weather and travel on the electric road is an expense that many cannot afford, while the charges in the village show a tendency to increase.

Most prominent, among our needs, I place a drill hall. Military instruction is required by law, but no building has ever been provided for the military department. Nearly all the land grant colleges, have long been supplied, and in this State the lack is especially felt because of the rigor of our climate, which prevents out door drilling except for a very few weeks at the beginning and end of the college year. The chief requirement in such a building is an unbroken floor space of not less than sixty by one hundred and twenty feet. The interior finish and

fittings are very inexpensive. A satisfactory building could be erected for $30,000. The same room could be used as a gymnasium.

THE WAR WITH SPAIN.

The act of Congress to which the University owes its existence was passed in 1862, when the importance of military education was strikingly borne in upon the people by the sore need of trained officers for the army of the north.

To this fact, it is largely due that Congress included military instruction in the required work of the land grant colleges. The University has faithfully complied with that requirement. Every student not physically disqualified, has been required to drill throughout his course, and has received instruction in infantry exercise, target practice, signaling, guard duty, drill regulations, and the art of war.

When the Spanish war broke out, every student seemed anxious to enlist. A committee, appointed at a college meeting sent to the Governor of the State, the following letter:

April 11, 1898.

"To His Excellency, The Governor of Maine:

SIR:—You recently received from Mr. R. K. Jones a letter inquiring whether the State would accept a military company to be raised among the students of the University of Maine. In his courteous reply the Adjutant General stated that the letter would be placed upon file, but seemed to indicate that the proposed company would not be needed for general service. We do not desire to urge ourselves upon the State, but as we owe our opportunities for higher education largely to the generosity of the general government and the State of Maine, and in view of the instruction which we have received in military science and tactics, we are anxious to make evident our willingness to perform such military duty as the State may need, whether that be important or unimportant.

The military organization of the University, known as the Coburn Cadets, consists of four companies of fifty men each, well drilled, disciplined, and uniformed, supplied with regulation Springfield rifles of 45 calibre, with ammunition, and nearly all other equipments needed for service in the field. Whenever it is possible to obtain from the United States government guns which are now in process of manufacture, and soon expected, the battalion will be given artillery drill.

It has been suggested that the State may be glad to have the battalion held in readiness for the defense of the coast in case of threatened attack. If proper preparations are made, it will be possible to furnish two hundred or more men ready for action, in two hours.

At a meeting of the students and faculty held April 3, the undersigned committee was instructed by unanimous vote to offer such service; with the understanding that members of the battalion are to be at liberty to enter the army of the United States if need or occasion should arise before they are called into active service by the State. If desired, we will send a committee for personal interview with you, or any officer

whom you may designate. If this offer is accepted we will await any orders you may see fit to give."

This letter was signed by the committee appointed to draw it up. The following reply was promptly returned by the Governor.

AUGUSTA, April 14, 1898.

Sam'l C. Dillingham, and Others, Orono, Maine.

SIRS:—Your patriotic letter and offer of services of April 11, has just reached me. I am indeed glad to see the patriotism that the students display, and I have no doubt, if hostilities continue and a call is made, that we may be able to utilize the Coburn Cadets.

I have placed your letter on file with the Adjutant-General, and you will hear from us as soon as the occasion arises.

Very truly,

Llewellyn Powers.

The students waited. It was not long before the occasion to which the Governor referred arose. Neither of the two regiments composing the National Guard, was large enough to fill the President's call upon the State, and they could not be combined, as the Second Regiment, which it was proposed to disband, looked with disfavor upon losing their officers, and breaking up their local organizations. The State needed recruits. A student, a member of the First Regiment of the National Guard, came to Orono and called for volunteers. The response was prompt and enthusiastic, and more than thirty students hastened to Augusta. The following telegram was soon after received from the Governor:

"I am proud of the University of Maine. Thanks for the volunteers. This patriotism will endear it to all the people of Maine. Thirty-two have passed. I wish there were one hundred. I shall see that they are considered when occasion presents.

Llewellyn Powers."

Others entered the service at other times. It is worthy of note that when so many volunteers were rejected for physical reasons, all of our students who offered themselves, with only one exception, passed the physical examinations and were received into the service. Nearly all of these young men were qualified for service as officers, but enlisted as privates. A considerable number were promoted.

The Maine Regiment was not called into the field but the self-sacrifice of our students is none the less worthy of commendation. They are our pride. It is probably true that in proportion to size, the University of Maine sent more men into the service of the country, than any other college or university in the land.

Students, Former Students, and Graduates in the War.

The following is a list of the undergraduates who volunteered:

First Maine Volunteer Infantry.

COMPANY A.

Percy Chadwick Moore, '00, Bangor, Maine.

COMPANY B.

Samuel Clark Dillingham, '98, Sergeant, Portland, Maine.
Bertrand Randall Johnson, '98, Corporal, Deering, Maine.
Edwin Albert Sturgis, '98, Corporal, Lewiston, Maine.
Horace Loring White, '98, Corporal, Portland, Maine.
Herbert Palmer Mayo, '99, Musician, South Boston, Mass.
Walter Lincoln Ellis, 98, Waterville, Maine.
Arthur Bartlett Morse, '01, Jersey City, N. J.
Charles Duren Roston, '00, Dorchester, Mass.
Roland Sampson Scribner, '00, Patten, Maine.
Arthur Roebuck Tolford, '01, Portland, Maine.

COMPANY C.

Rossell Olin Dunn, '98, Sergeant, Orono, Maine.
Herbert Nathan Adams, '01, Wilton, Maine.

COMPANY D.

Charles Curtis Scott, '99, Sergeant, Dexter, Maine.
Alfred Andrews Starbird, '98, Sergeant, South Paris, Maine.
Benjamin Franklin Faunce, '00, Corporal, Norway, Maine.
Ralph Herbert McPheters, '99, Orono, Maine.
Nathan Ajalon Chase, '02, South Paris, Maine.

COMPANY F.

Wilfred Reuben Tolman, '98, First Sergeant, Augusta, Maine.
Frederick Robinson Clark, '98, Corporal, Portland, Maine.
Clarence Warner Stowell, '00, Corporal, Brimfield, Mass.

COMPANY G.

Herbert Ivory Libby, '98, Sergeant, Biddeford, Maine.

COMPANY H.

Norman Eldridge Curtis, '99, Lisbon Falls, Maine.
Eugene Allen Hackett, '01, Caribou, Maine.
Ernest Judson Howe, '00, South Lancaster, Mass.
David Willard Leavitt, '00, Patten, Maine.
Dana True Merrill, '98, East Auburn, Maine.
Grosvenor Wilson Stickney, '00, Clinton, Mass.

COMPANY M.

Charles Omer Porter, '00, Sergeant, Cumberland Mills, Maine.
Rufus Houdlette Carleton, '99, Corporal, Cedar Grove, Maine.
Albion Dana Topliff Libby, '98, Corporal, N. Scarboro, Maine.
John Clifford Warren, '02, Deering, Maine.

HOSPITAL CORPS.

George Otis Hamlin, '00, Sergeant, Orono, Maine.
Herbert Davidson Eaton, '00, Bangor, Maine.
Ernest Carleton Forbush, '00, Marlboro, Mass.
Dana Leo Theriault, '00, Caribou, Maine.

BAND.

Elmer John Noyes, '00, Berlin, N. H.
Frank Albert Noyes, '00, Berlin, N. H.

FIRST MAINE HEAVY ARTILLERY.

Wesley Clarendon Elliott, '00, Sergeant, Patten, Maine.
Harry Hewes Leathers, '00, Corporal, Bangor, Maine.

MAINE SIGNAL CORPS.

George Warren Lawrence, '98, Corporal, South Gardiner, Maine.
Harrison Pratt Merrill, '98, Wareham, Mass.

The following members of undergraduate classes were not in college, at the time they volunteered:

Nathan Ajalon Chase, '02, South Paris, Maine.
Norman Elbridge Curtis, '99, Lisbon Falls, Maine.
Percy Chadwick Moore, '00, Co. A., Bangor, Maine.
John Clifford Warren, '02, Deering, Maine.

The following are former students. This list is designed to be complete for those who volunteered in Maine, but is probably incomplete for those who entered the service in other states.

FIRST MAINE VOLUNTEERS.

Ralph Rising Ulmer, '83, Major, Rockland, Maine.
John Bird, '90, Captain Co. H., Rockland, Maine.
Frederic Andrew Hobbs, '96, Second Lieutenant Co. M., Alfred, Maine.
Charles Simmings Bartlett, '97, Sergeant Co. D., Norway, Maine.

EIGHTH MASSACHUSETTS VOLUNTEERS.

Charles Henry Farnham, '97, First Lieutenant, Beverley, Mass.

MISSOURI VOLUNTEERS.

Warren Evans Healey, '92, First Lieutenant, St. Louis, Mo.

PENNSYLVANIA VOLUNTEERS.

George Weymouth Hutchinson, '93, Sergeant, Greensburgh, Pa.

UNITED STATES SIGNAL CORPS.

John Decker Blagden, '86, Wood's Holl, Mass.
Edmund Clark, '91, New York City.

SEVENTH UNITED STATES INFANTRY.

Roy Lynde Fernald, '96, Winterport, Maine.

UNKNOWN.

Allie Mills Hastings, '90, Rockland, Maine.

UNITED STATES NAVY.

Fred Hubbard Pullen, '77, Lieutenant, Foxcroft, Maine.
Austin Dinsmore Houghton, '87, Ensign, Atlanta, Ga.
Nathan Goodridge, '96, Machinist, Orono, Maine.

The following volunteered as members of the Second Maine Regiment which was not accepted:

Harold Sherburne Boardman, '95, Captain Co. G., Bangor, Maine.
Howard Brett, '99, First Lieutenant Co. G., Bangor, Maine.
Edmund Ireland Davis, '01, Bangor, Maine.

The following passed the efficiency examinations for appointment as second lieutenant in the regular army of the United States. Mr. Brastow proved to be below the required height, and was rejected on the physical examination. The others were appointed.

William Thomas Brastow, '97, Rockport, Maine.
Dana True Merrill, '98, East Auburn, Maine.
Alfred Andrews Starbird, '98, South Paris, Maine.

Four of the young men who marched away from the campus with such high devotion were destined never to come back.

Charles Curtis Scott, 1899, Dexter, Maine,
Roland Sampson Scribner, 1900, Patten, Maine,
Eugene Allen Hackett, 1901, Caribou, Maine,
Arthur Bartlett Morse, 1901, Jersey City, N. J.,

were carried back to Maine from Chickamauga, stricken with typhoid fever, from which they died. They have paid the great cost of war; they shall reap the reward of a precious memory.

A. W. HARRIS,
President.

REPORT OF THE TREASURER.

To the Trustees of the University of Maine:

The Treasurer of the University has the honor to submit the following report concerning the financial condition of the University, June 30, 1898.

RECEIPTS OF THE UNIVERSITY FROM JULY 1, 1897 TO JUNE 30, 1898.

Cash balance July 1, 1897	-	$5,182 47
Land Grant Fund	$5,915 00	
Coburn Fund	4,000 00	
Morrill Fund	23,000 00	
The State	15,000 00	
Rents	729 08	
Prizes	50 00	
Miscellaneous	1,734 77	
Student Receipts	7,206 16	
Tuition	7,654 37	65,289 38
		$70,471 85

NET EXPENSES OF THE UNIVERSITY FROM JULY 1, 1897 TO JUNE 30, 1898.

CURRENT EXPENSES:		
Salaries	-	$32,651 42
Departments:		
Agriculture, Agricultural Chemistry	$608 70	
Bacteriology and Veterinary Science	9 00	
Farm	721 76	
Field Day	77 45	
Horticulture	783 69	
Botany	69 21	
Physics	229 53	
Chemistry	180 76	
Pharmacy	115 88	
Natural History	458 64	
Civil Engineering	171 18	
Electrical Engineering	373 74	
Mechanical Engineering	193 80	
Modern Languages	2 75	
Mathematics	3 93	
Military Science	201 23	
Library	1,431 85	
Shop	457 98	6,090 58
GENERAL EXPENSES:		
Advertising	293 60	
Care of Grounds	664 22	
Improvement of Grounds	1,133 64	
Office	164 30	
Commencement	83 22	
Miscellaneous	511 71	
Postage and Stationery	407 48	
Furniture and Fixtures	596 14	

NET EXPENSES OF THE UNIVERSITY—CONCLUDED.

GENERAL EXPENSES—*Concluded.*		
Interest and Discount	$50 00	
Insurance	750 00	
Trustees Expenses	141 00	
Water	425 93	
Summer School	12 31	
Dormitory	280 24	
Freight and express	341 41	
Fuel	1,673 70	
Incidentals	429 76	
Light	843 48	
Track	500 00	
Treasury	118 90	$9,421 04
General Repairs	-	1,644 35
Prizes	-	40 00
Text Books	-	495 92
Commons	-	1,410 66
Bills Payable	-	7,250 00
COST OF MAINTAINING THE UNIVERSITY FOR THE YEAR	-	$59,003 97
CONSTRUCTION EXPENSES:		
Reconstruction Fernald Hall	$3 20	
Construction of Kappa Sigma House	79 96	
Construction of Q. T. V. House	4,500 00	4,583 16
CASH BALANCE, June 30, 1898	-	6,884 72
	-	$70,471 85

ACCOUNT WITH THE UNITED STATES GOVERNMENT APPROPRIATION UNDER THE MORRILL ACT, FOR THE YEAR ENDING JUNE 30, 1898.

RECEIPTS.		
Received from the United States, July 12, 1897	-	$23,000 00
EXPENDITURES.		
Department of Agriculture	$5,750 00	
Mechanic Arts	6,700 00	
English Language	2,000 00	
Mathematical Science	3,300 00	
Natural or Physical Science	3,450 00	
Economic Science	1,800 00	23,000 00

Respectfully submitted,

ISAIAH K. STETSON, *Treasurer.*

I hereby certify that I have examined the accounts of the Treasurer, and find them correctly kept and properly vouched.

ELLIOTT WOOD, *Auditor.*

REPORT OF THE SCHOOL OF LAW.

President A. W. Harris:

SIR:—The School of Law opened in Bangor on October 5, 1898, with a total registration of twenty-six students. The work of organization was speedily effected, senior and junior classes were formed, and on the following Monday the work of the fall term in all its branches was begun. Although the enterprise can hardly be said to have passed the experimental stage, the prospects of the school are considered bright and its ultimate success reasonably certain.

The senior class consists of three students; three other men are pursuing special courses; the junior class consists of nineteen members. The average age, reckoned to October 5, 1898, and excluding two men in middle life, who are taking special work, is twenty-four.

The majority of the students are from Maine, two from Massachusetts, and one each from New Hampshire and Vermont. It is believed that the school will eventually command a large clientage throughout New England. Androscoggin, Aroostook, Hancock, Kennebec, Penobscot, and York counties have representatives in the school.

Seven students are college graduates, the number including three from Bowdoin College, and one each from Bates College, Brown University, University of Maine, and Wesleyan University. Three students have had a partial course in the University of Maine, and one in the University of Virginia. The education of four is limited to that of the common schools, the others are graduates of high schools and academies, including the Bangor, Bar Harbor, Lewiston, Burlington, (Vt.) and Palmer, (Mass.) High Schools, the Coburn Classical Institute, Limerick Academy, Higgins Classical Institute, St. Johns, (N. B.) Academy, and the Maine Central Institute.

With such growth as may be reasonably anticipated, the school will speedily become self-supporting, and in a few years should prove a source of revenue to the University. For it is believed there can be developed in Bangor a law school, equal to any in New England in efficiency, and approximate to any in numbers. In Bangor a student can complete his legal education at the cost of a single year in Cambridge or Boston, and if the work is as good as in other schools, the man who needs to do close figuring, and such is nearly every law student, will be greatly influenced to come to us. In a word, our ultimate success depends upon the vigor

and efficiency of our daily instructional work, and our growth will fairly gauge this efficiency.

Not only should this department of the University become a source of financial strength, but it should prove of service to the institution along at least two other lines. By securing the patronage of the graduates of other Maine colleges who enter the law, it will gradually tend to produce a more cordial relation between those institutions and the University of Maine. Finally, in a few years, the school will give us a strong and enthusiastic following at the Maine Bar, the value of whose support and influence it would be hard to overrate. For these reasons it is believed that the School of Law should continue to receive the cordial support of the trustees.

GEORGE E. GARDNER,
Dean of the School of Law.

REPORT OF THE DEPARTMENT OF ENGLISH.

President A. W. Harris:

SIR:—Since writing my last report some changes have been made in the work in the department of English. First, the courses in English literature have been so arranged as to extend through two years. No more time is given to the study than formerly; but it is believed that better results can be secured by the new time scheme. Secondly, the work in rhetoric has been made to include a larger number of themes than heretofore. Written work now forms a part of almost every recitation.

The needs of the department are few, but urgent. The time has come when the work in elocution should be put upon a better footing. There is no part of a student's college course more likely to prove practical than his "rhetoricals." In order to acquire skill in speaking, he ought to have systematic and thorough instruction in the art; this he cannot have under present conditions. The work in this department can never satisfy either teacher or student till it is done by an instructor who shall be able to give it the greater part of his time.

Provision should be made for a more comprehensive study of English literature. Every senior ought to be able to elect the study—an impossibility under present conditions, because the instructor's time is already fully employed with the work now assigned him. No honor courses in English can be offered for the same reason. Were the department of English to be divided, and the declamations and a part of the work in rhetoric to be assigned to another instructor, it would be comparatively easy to get results one hundred per cent better than is now possible.

Our last great want is more books in the library. We need, more than can easily be expressed, complete sets of the more important literary reviews;—they are storehouses of history, criticism, and interpretation. I earnestly recommend that a special appropriation be made for the purpose of completing our broken sets, and of purchasing others.

Respectfully submitted,

H. M. ESTABROOKE,

Professor of English.

REPORT OF THE DEPARTMENT OF LATIN.

President A. W. Harris:

SIR:—As at present arranged it is possible for a student to pursue courses in Latin during each of the four years of his course. The instruction given is progressive in its nature. During the freshman year selections from Livy and the De Senectute and De Amicitia, or selected Letters, of Cicero are read. Special attention is given to the forms and syntax of the language and in order to facilitate the acquirement of proficiency in this respect a course in Latin writing based upon the texts read is given throughout the year. Careful pronunciation is insisted upon, and to train the ear of the student to the sounds of the language and to accustom him to the order of the words, passages are read for translation at hearing.

During the first term of the sophomore year the Agricola and Germania are read. The prominent features of the style of Tacitus are noticed and an outline of the development of Latin prose is given. The author studied in the second term of this year is Horace. The main purpose of this course is to lead the student to an appreciation of Latin poetry. The structure of Latin verse is exemplified by a drill in the metres. The social and literary characteristics of the Augustan Age are dwelt upon.

The authors read in the junior year are Plautus and Terence, and the Histories of Tacitus. In the former course considerable time is devoted to the archaic forms and constructions and the colloquial style of the two writers of Roman comedy. The Histories of Tacitus furnish a fruitful field for a study of the causes which lead to the decline and fall of the Roman Empire. The provincial administration of the Romans and the more essential features of their civil government are noticed.

During the senior year courses are offered in the Elegiac Poets, Lucretius, Juvenal or Persius, and Quintilian. The authors read are viewed chiefly from a literary and stylistic standpoint. Philology also receives its share of attention.

In all of the courses offered by the department, an attempt is made to show the influence of the Roman mind upon modern thought and culture and of the Roman civilization upon that of our own day.

In addition to the regular courses an honor course is given this year, consisting of lectures and recitations upon Roman literature and archaeology. Special topics connected with these subjects are assigned for investigation and the results of this investigation are embodied in written reports.

The most urgent need of the department is a larger appropriation for books. A good beginning has been made in this direction but the department library is still far from being what it should be. A more complete set of wall-maps and a collection of photographs illustrating Roman Archaeology would also be of great service.

When I assumed charge of the department in the spring of 1896 it consisted of five students, one sophomore and four freshmen. The total enrollment at the beginning of this year was twenty-one, distributed as follows: Honor Course, 1; Senior, 1; Junior, 4; Sophomore, 7; Freshman, 8; Total, 21. This increase in the number of students, their interest in their work and the excellence with which they perform it is most gratifying.

Respectfully submitted,

WALLACE STEDMAN ELDEN,

Assistant Professor of Latin.

REPORT OF THE DEPARTMENT OF MODERN LANGUAGES.

President A. W. Harris:

SIR:—The required courses in French and German extend throughout two college years. The introduction of two new courses in French Literature, during the present year, allows the student who desires to specialize in French to pursue the study of this language during the four years of his course. The courses in French are so arranged as to give a survey of the development of both French literature and language. This is a decided advantage for students taking up the subject for general culture, and especially for those desiring to teach it. The course in Old French, primarily designed for the latter, is now an honor course and is open only to students who have a working knowledge of Latin.

More extended instruction has been offered in French rather than in German, because there is a greater demand for such, due in a measure to the fact that the majority of the preparatory schools of the State teach French, but very few teach German. It is, however, very desirable that additional courses in German be given. New courses in Literature, and, at least, short ones in Old High and Middle High German would raise the whole modern language department to a very satisfactory status. Unfortunately the instructors are now so crowded with work that it is impossible to offer these.

The elective courses in Italian and Spanish have been well attended, and the number of students has increased from year to year. As compared with eight students two years ago, there are at present nineteen in the Spanish class. Among these are two graduate students.

There are now two instructors in the department, Mr. Goodell and myself. During 1897-98 I was on leave of absence and spent the year in Germany and France, devoting considerable time to the study of methods in modern language teaching. During my absence, Mr. Goodell, Mr. Thayer and Prof. Elden conducted the work of the department.

The number of French and German texts in the library is much greater than two years ago, thus facilitating the work in advanced classes. There are still, however, too many lacunæ. I would urge that a special appropriation should be granted this department in order to procure sets of Germania and Romania.

Respectfully submitted,

EDWIN B. NICHOLS,

Assistant Professor of Modern Languages.

REPORT OF THE DEPARTMENT OF PHILOSOPHY.

President A. W. Harris:

SIR:—In the Department of Philosophy, my personal teaching includes simply the two subjects of Psychology and Logic. To the former, the first half of the year is devoted; to the latter, the second half of the year. At the date of this report, I have given instruction in Psychology during the autumn to the members of the junior class, and desire to bear testimony to the faithfulness and earnestness with which they have pursued the subject, and to the proficiency to which they have therein attained.

In the methods of instruction adopted, the attempt has been made to utilize as fully as practicable the contributions to Psychology made in recent years by means of physiological researches and by experiment. The "Old Psychology," while by no means supplanted, is greatly enriched by what the "New Psychology" furnishes. Many of the phenomena of consciousness are satisfactorily explained only by reference to the intimate relations existing between the body and the mind. The physiological basis thus serves an important purpose in accounting for the phenomena involved. Moreover, the experimental method of investigation, made prominent since the establishment of psychological laboratories, has shed much light on some of the more obscure problems of mental life.

The student of to-day, therefore, in the study of this science, has the advantage not only of the facts and theories which the introspective methods of the past have established as to the nature of mental processes, but also of the rapidly accumulating data which modern researches supply.

In treating of the progressive appearance and development of the so-called mental faculties, the relations of Psychology to the teacher's art or calling become clearly evident. In the classroom, it is my constant endeavor to bring into full recognition the very great pedagogical import and value of this science.

Acquaintance with the *nature* of thought under its varied forms of manifestation, as presented in Psychology, can hardly fail to equip the attentive student for the successful study of the *laws* of thought, and for the mental processes involved in Inference, Reasoning, and Generalization.

To such processes and to practical applications of the *laws* of thought, the science of Logic, in a very special way, serves as a fitting introduction.

Respectfully submitted,

M. C. FERNALD,

Professor of Philosophy.

REPORT OF THE DEPARTMENT OF POLITICAL ECONOMY AND HISTORY.

President A. W. Harris:

SIR:—Several changes have been made in the work of this department since my last report which enable me to develop more fully the branches peculiarly pertaining to it. Psychology and logic have been transferred to the Department of Philosophy, under the charge of Prof. Fernald, and my work in history has been correspondingly increased.

The classes under my instruction have made commendable progress in their studies. I recommend that an appropriation of two hundred dollars be made for the purchase of maps and charts.

Respectfully submitted,

A. E. ROGERS,

Professor of Political Economy and History.

REPORT OF THE DEPARTMENT OF MATHEMATICS AND ASTRONOMY.

President A. W. Harris:

SIR:—During the two years since my last report, in addition to the required work in this department, the following elective courses have been given: Advanced algebra, advanced integral calculus, theory of equations, differential equations, and solid analytic geometry. Particulars concerning these courses are given in the catalogue.

Two of our graduates are now pursuing graduate courses in mathematics;—Mr. Herbert L. Niles, '96, at the University of Chicago, and Mr. Lindsay Duncan, '97, at Clark University.

The departments of Physics and Mathematics have joined in holding monthly meetings at which reports of special reading, original experiments and investigations are given—largely by students. The interest in these meetings has been very gratifying.

Beginning with the present year, solid geometry has been required for admission to the engineering courses. Not all the high schools of the State were prepared to teach this study, hence it has been found necessary to allow an option between it and spherical trigonometry in the latter part of the freshman year. As soon as this requirement can be made absolute, all engineering students will be able to complete the required work in pure Mathematics by the end of the sophomore year. Such an arrangement will appreciably strengthen these courses by placing all the work in calculus where it should be, before the studies which depend upon it.

Mr. Richard M. Andrews, a graduate of Bowdoin College, filled the position of tutor in Mathematics very satisfactorily during 1897-8. At the end of the year he resigned to continue graduate study at Harvard University. Mr. Arthur R. Crathorne, University of Illinois, was elected in his place.

Dr. Fernald has charge of two divisions of the sophomore class in analytic geometry and calculus.

The rooms assigned for the work of this department and the chairs recently purchased leave but little to be desired in the way of equipment for recitation work. I must, however, urge the need of additional facilities for work in practical astronomy asked for in my last report, viz.: a combined astronomical transit and zenith telescope, and a small building for an observing station. The cost need not exceed: Transit Instrument and Zenith Telescope, $1,200; building, $300.

Respectfully submitted,

J. N. HART,

Professor of Mathematics and Astronomy.

REPORT OF THE DEPARTMENT OF PHYSICS AND ELECTRICAL ENGINEERING.

President A. W. Harris:

SIR:—Below is submitted my eighth annual report for the department of Physics, and the fourth for the department of Electrical Engineering.

PHYSICS.

1. *Instruction.* Since my last report the usual instruction has been given to the sophomore class in general physics and laboratory physics, to first year pharmacy students in elementary physics and laboratory physics, and to the junior class in electrical engineering in electrical measurements and testing. Courses have also been given in advanced optics, least squares, vibratory motion, advanced laboratory work (general), and advanced laboratory work (optics). Thirty-seven students have taken elective courses, and one student, Miss Rena Ethel Dunn, having taken all the courses offered, has received on her diploma, special recognition for work in physics.

2. *Honor Courses.* Courses covering advanced ground and occupying five hours a fortnight for the year, are offered under certain conditions to students as honor courses. Three students—one senior and two juniors—are working for honors in physics, with every prospect of success.

3. *Changes in the Courses.* The work given to sophomores in physics has been divided into two courses—one for engineers, and the other for non-engineers. This has proved a satisfactory arrangement as it has permitted a more mathematical course to be given to the former, and a more experimental course to the latter. The course in Electrical Measurements and Testing has been transferred from the department of Electrical Engineering to the department of Physics.

4. *General Condition of the Department.* The department is getting into good condition so far as apparatus is concerned. Since the last report there have been added the following instruments: Michelson's interferometer, spectro-goniometer, polaristrobometer, slide wire bridge, meter bar, optical lever, air thermometer, micrometer microscope, electric forks, Wheatstone bridge, together with others of less value.

The department is seriously embarrassed for room to carry on the various laboratory classes. The number of students has increased so

greatly that the accommodations once adequate, have become entirely inadequate.

An admirable dark room has been fitted up in the attic of Wingate Hall for the joint use of this department and that of Electrical Engineering. A room in the basement, formerly used as a store room, is being arranged as a private laboratory.

Regarding the teaching force, I may say that the department has been very fortunate in the selection of assistants. Messrs. Weston and Dorsey have served as tutors, and Messrs. Andrews, Brastow, and Ryther as assistants.

5. *Needs.* The most pressing need is more room. It is hoped that in the near future some provision may be made whereby students who are working in the physical laboratory may not be put to such a serious disadvantage. The sum of five hundred dollars could be expended to good advantage in adding to the lecture room apparatus. A standard testing set, costing one hundred dollars, should be purchased. I also ask for a dividing engine for the junior laboratory. The cost would be about two hundred dollars.

ELECTRICAL ENGINEERING.

1. *Instruction.* As in the past my connection with this department has been nominal, the burden of the work falling upon the instructor. Mr. Lanphear resigned his position during the summer vacation, to accept a similar one in Cornell University. Mr. L. P. Dickinson, a graduate of the Massachusetts Institute of Technology, was chosen to succeed him. Mr. R. H. Manson of the class of 1898 was appointed assistant. The work has been carried forward in a highly satisfactory manner. Mr. Dickinson has given practically all the instruction, and Mr. Manson has had charge of the light station, wiring, and repairs. Mr. Dickinson is giving a course in telephony in place of shop-work.

Nine students received degrees from this department at the last commencement, and there are eighteen in the present senior class. Among the subjects chosen for theses by last year's class may be mentioned the following: Design and test of an electric light plant; an electric car test; a design for a dynamo; design of transformer; study of Roentgen rays.

2. *Needs.* Owing to the fact that this department is soon to change hands it is not deemed fitting to ask for any appropriations beyond immediate necessities. The increased size of the senior class make it necessary to purchase for next (spring) term a new ammeter at a cost of about sixty dollars. An alternating current machine with its accompanying equipment should be purchased and a photometer for arc light measurements. Five hundred dollars will, I think, cover these expenditures.

3. *In General.* During the fall term the seniors in this department under the direction of Mr. Dickinson and Mr. Manson visited in Boston, the Mechanics' Fair, the West End Power Station, the Power Stations of the Edison Illuminating Company, the Laboratories of the Institute of Technology, and in Lynn the General Electric Company.

We are indebted to Mr. Wm. C. Holden of the class of 1892 for the gift of a mercury pump.

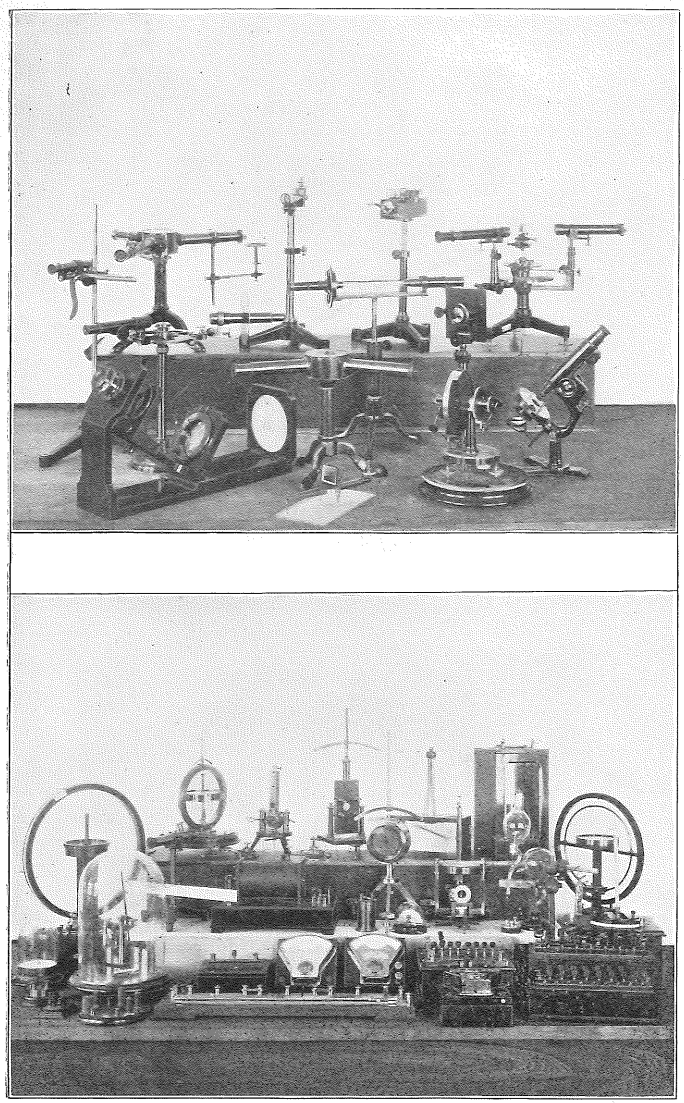
The following investigations have been carried on since the last report: A new method of measuring the speed of an engine (Lanphear); test of an electric heater (Stevens and Lanphear); application of interference methods to changes in rods when magnetized (Stevens); application of interference methods to the measurement of elasticity with small loads (Weston); application of interference methods to some experiments in molecular contact (Stevens); construction of fluoroscope (Manson); construction of photometer (Manson); construction of harmonic pendulum with new method of preserving the curves (Dorsey); acceleration in liquid media (Stevens and Dorsey); application of interference methods to the study of the elasticity of rods when magnetized (Stevens and Dorsey); a new form of physical pendulum (Stevens); best conditions for work with cross-wires (Ryther).

Articles descriptive of work done appeared in the following periodicals: American Electrician, Electrical World, Power, Physical Review, American Journal of Science, Scientific American, and the Journal of Applied Microscopy.

Respectfully submitted,

JAMES S. STEVENS,

Professor of Physics.



OPTICAL AND ELECTRICAL APPARATUS.

REPORT OF THE DEPARTMENT OF CHEMISTRY.

President A. W. Harris:

SIR:—Since writing my last report some changes have taken place in the teaching force of this department. Mr. D. W. Colby, who for five years filled the position of instructor in a most acceptable manner, resigned at the end of the spring term 1897 to accept an offer from the Storrs Experiment Station. He was succeeded by Dr. Gellert Alleman, who proved an excellent instructor. It was with regret that his resignation was accepted at the end of the college year, to allow him to accept a position in the Washington University.

Dr. Garnett Ryland, who replaced him, has discharged the duties of the position for the past term with ability and success.

Mr. Allen Rogers of the class of 1897 was selected in the fall of 1897 to take charge of the freshman class in elementary laboratory practice. His work in this line has been of such excellence that it was thought best to retain him for the ensuing year. I cannot say too much in praise of the good work done by my assistants.

The increased number of teachers has made it possible to carry on the work of the department in a more thorough and efficient manner than ever before.

During the fall term the studies offered to students are Elementary General Chemistry, Elementary Organic Chemistry, Chemical Theory, Advanced Inorganic Chemistry, Notes on Laboratory Processes, Chemical Readings from foreign authors, Elementary Laboratory Practice, Qualitative Analysis, Quantitative Analysis, Agricultural Analysis, Toxicology and Biological Analysis.

During the spring term the studies offered are: General Chemistry, Advanced Inorganic Chemistry, Advanced Organic Chemistry, Mineralogy, Elementary Qualitative Analysis, Advanced Qualitative Analysis, Advanced Quantitative Analysis, Volumetric Analysis, Assaying, the Preparation of Organic and Inorganic Chemicals, and Thesis Work.

The following theses have been presented by graduates in chemistry:

The Solubility of Isobutyl Sulphate of Calcium, by Allen Rogers.

The Rate of Dissociation of Solutions of Strontium-Amyl--Sulphate and Barium Isobutyl Sulphate at various temperatures, by A. J. Patten.

The Solubility of Cuproammonic Chloride, by S. J. Heath.

On the Extraction of Gold, by E. M. Atwood.

The Rate of Dissociation of Paratoluidine Hydrochlorate in the Air at Various Temperatures, by Lottie G. Farrar.

The Lithium, Strontium and Zinc Salts of Thymol-sulphonic Acid, their Analysis and some of their Properties, by L. J. Brann.

Many new and advanced text-books have been introduced. Valuable pieces of apparatus have been added which will be of great help in the practical work of the laboratory.

A course in Chemical Technology will be offered the coming year, which it is hoped, will prove a useful and attractive feature. It will be the object to take up the general operations of manufacturing chemistry and to follow them with a special study of the most important chemical industries. It is unnecessary to make a plea for such a course in an age in which the civilization of a nation may justly be measured by the annual output of chemical products.

In closing I must remind you that our work can only continue to make satisfactory progress, provided the department be supplied with new and special apparatus and charts, and the library with the latest works and some complete sets of the best journals.

Respectfully submitted,

A. B. AUBERT,

Professor of Chemistry.

REPORT OF THE DEPARTMENT OF PHARMACY.

President A. W. Harris:

SIR:—The department opened in 1895. Ten students entered the short course; fifteen entered in 1896; two in 1897; and nine in 1898. The attendance has not been wholly encouraging and at no time equal to the facilities for instruction. The long course has not proved attractive, only seven all told having entered. There are several causes tending to limit the number of students in pharmacy. The almost exclusive course has been for the beginner in pharmacy to prepare himself—not by studying his profession—but by practicing it. He enters a store in a menial position, and after a varying number of years of such service, spent in picking up practical details, he reaches the goal of his ambition, the prescription counter. This method is seldom accompanied by efficient study, and the clerk's attainments are necessarily practical, and severely so. To the extent that the business is commercial, this training suffices; to the extent that it is professional, it fails.

The number of practicing pharmacists who are pharmacy graduates is relatively small—much larger in this State than the average, 100 in 759 here,—and this small number, with few exceptions, have been obliged to reach the prescription counter by the same road as those who are not graduates, the preliminary store course being shortened according to the diligence shown and practical knowledge acquired during the college course.

Unconsciously, as well as consciously also, the young men become impregnated with the prevailing spirit of the age, and readily learn to judge all things educational as well as material—by the standard of the dollar. Hence, many of the young men who essay to learn pharmacy do so with no special liking or appetite for the calling; nor higher ideal than that it promises to combine in a supposedly high degree the elements of respectability and social opportunity, with minimum effort and maximum profit. Impressed with no higher sense of the duties and responsibilities of the calling than that of their preceptors (the proprietors above mentioned) and generally coming to it with minds immature and poorly grounded in elementary English branches, they are not favorably disposed towards college training, and if by chance, they become students they necessarily prove disappointing; their seeming thought being to cut corners and guard carefully against acquiring more knowledge than just sufficient to pass the board. This done, they are presumably at liberty to forget

it all again. Minds thus constituted are impervious to truth not promptly utilitarian, and as not every truth of science is immediately convertible into the monetary standard, it is too often speaking to deaf ears, to urge that the duties and responsibilities of this profession demand a higher education in pharmaceutical and allied science than will be obtained during the routine of daily trade.

In short, however great the demand of the public for educated pharmacists, there is frequently little demand from the prospective pharmacist for the training essential thereto. The real trouble—a low standard of efficiency— is due chiefly to the growing difficulty, with which under the competitive system, the small retailer maintains a high standard, and at the same time succeeds in making a living. Fundamentally then the problem is economic.

The chairman of the committee on education of the American Pharmaceutical Association, in his annual address for 1897, stated that the attendance at colleges of pharmacy generally showed a falling off in later years. Radical business changes and depression; rigid State board examinations,—wise, though existing in no other calling (requirements for medical registry being in comparison merely nominal); the necessity of a considerable term of inferior service; hours, responsibilities, and risks exceptionally great; the correspondence schools of pharmacy, which seem well patronized; all these, in addition to the causes before cited, undoubtedly restrict more than in other technical and professional lines the number of students at college.

"Salus populi suprema lex," however, is the position already taken in nearly every state and territory in establishing state commissions of pharmacy. This logically involves opportunities to acquire proficiency. This is the field of a state college of pharmacy, as also its reason for existence.

Since the establishment of this department eleven have graduated in the short course, and three in the long course. Six of the eleven are engaged in pharmacy; two so engaged are connected with the U. S. Volunteer service; two are studying for a higher degree; one is not heard from. Of the graduates of the four year course, one is an officer in the U. S. Army; one a teacher; and one not heard from. Of eleven students in pharmacy, not graduates, four are engaged in pharmacy, one as pharmacist in the Massachusetts State Hospital; one is engaged in a chemical industry; one is studying for a higher degree; one is in the U. S. Army; one is studying medicine; and three are in business.

The work in the laboratory of pharmacy and the course in materia medica is taken by the preparatory medical students. The laboratory course will prove especially valuable to the future practitioner of medicine.

The instructor's time in the spring term is largely occupied in directing researches for thesis work, and in assisting in chemistry. In the short course much time is now devoted to pure chemistry in the first term, to fit the student for the qualitative laboratory.

The books and journals added to the library by this department have been carefully chosen, and should be permanently valuable. Some jour-

nals, pamphlets, and reports have been added free, some of which are of value in special lines; e. g., the reports of the Michigan and Ohio Food and Dairy Commissioners on adulterations of foods and drugs. The most important and valuable addition of distinctively pharmaceutical literature is a complete set—42 volumes—of the Proceedings of the American Pharmaceutical Association.

The most interesting and valuable feature of the work is the investigations pursued and results obtained in the laboratory of pharmacy, and the theses presented. A report of this work was presented last summer, and a synopsis will probably appear in the Proceedings of the American Pharmaceutical Association.

The needs of the department are chiefly for reference literature, and the gradual completion of the files of the best journals. A donation of one such set has already been promised.

Respectfully submitted,

W. F. JACKMAN,

Assistant Professor of Pharmacy.

REPORT OF THE DEPARTMENT OF NATURAL HISTORY.

President A. W. Harris:

SIR:—I have the honor of submitting the following report of the Department of Natural History for the two years ending December, 1898.

Class Work. There have been few changes in the work of my department since my last report. The opportunity offered for a wider range of electives has greatly increased the number of elective students. It has been necessary to divide the class in geology, and the laboratory class in cryptogamic botany into sections. There is a growing interest in natural history. The students are doing excellent work. More and better work is being done. Several students are specializing in this department.

In 1897 I delivered a course of fifteen lectures on injurious insects and fungi to the winter students in agriculture. In the summer of 1897 I had charge of the summer school. During the two years Mr. E. D. Merrill has rendered satisfactory assistance. Mr. O. O. Stover and Mr. P. L. Ricker, students in the department, have rendered valuable assistance in the herbarium, museum and laboratory.

Original Work. A list of the Birds of Maine by O. W. Knight, B. S., was published in 1897 as Bulletin No. 3 from the Department of Natural History. This publication was well received and the small edition rapidly exhausted. A revised and larger edition should be published for use in the public schools of the State. We have had requests for as many as seventy-five copies from some of the schools.

In addition to the conduct of recitations and laboratory classes, the work of the Department has included: (a) life histories of plants and animals; (b) classification of botanical and animal material for the extension of the herbarium and museum; (c) the preparation of slides to illustrate class and laboratory work; (d) the collection of plants and animals; (e) the determination of plants and animals sent to the department to be named; (f) the preparation of articles for scientific journals, newspapers, and the bulletins of the department; (g) public lectures. During the last year, I have examined blood in two murder cases.

The following articles have been published during the past two years: **Notes on Maine Plants,Torrey** Bulletin, January, 1897; Contributions to the Myxogasters of Maine II, Torrey Bulletin, February, 1897; The

Gasteromycetes of Maine, Torrey Bulletin, February, 1897; Contributions to the Odonates of Maine III, Entomological News, March, 1898; A New Poduran of the Genus Gnathocephalus, Entomological News, November, 1898.

Herbarium Work. The Sullivant and Lesquereux Moss Collection and other mosses of the Blake Herbarium together with the mosses of Maine have been mounted in packets on sheets and classified by Mr. E. D. Merrill. The fungi of the Blake Herbarium, amounting to nearly a thousand species, have also been mounted and arranged according to Saccardo by Mr. P. L. Ricker of the junior class. Much work has also been done on other groups of cryptogams and flowering plants. There are about 5,000 specimens of cryptogams in the Blake Herbarium, representing fully 1,500 species. These will be in shape before the year closes.

There has been added during the past two years to the Herbarium by purchase, exchange, donations and collections 900 specimens. Collections of plants amounting to several hundred species were donated to Good Will Farm and Coburn Classical Institute.

Museum Work. Mr. Ricker has arranged the collection of fossils according to ages, and the collection of shells, according to Tryon. The birds have been mounted on black walnut perches and stands and arranged by Mr. Merrill. There have been added during the past two years sixty birds, thirty fishes, one reptile, one hundred and ninety species of shells, twenty Indian relics and an educational series of rocks of one hundred and fifty species donated by the U. S. Geological Survey.

Exploring Work. During the summers of 1897-8, I made several short collecting trips up the B. & A. R. R. In July, 1898, I spent a week with Prof. Munson in Washington county in the blueberry region. In September, 1898, I made the ascent of Mt. Katahdin with a party of college students and alumni. These excursions yielded rich results in plant and animal forms new to the University collections, to the State, and to science. The Katahdin trip was particularly rich in results. We are again under obligations to the Bangor and Aroostook Railroad for favors.

Student Excursions. In October, 1898, the class in Geology visited the slate quarries at Brownville and the abandoned iron plant at Katahdin Iron Works. These excursions are profitable to students and should be encouraged.

New Apparatus. Since my last report there have been added the following: A set of wall diagrams, Botany and Zoology, by Heinrich Jung; five tables for the windows of the museum for use in laboratory work; five compound microscopes (Bausch & Lomb Continental Stand BB7) fitted with iris diaphragm, Abbe condenser and twelfth inch objectives for use in bacteriological and histological work.

Respectfully submitted,

F. L. HARVEY,

Professor of Natural History.

REPORT OF THE DEPARTMENT OF HORTICULTURE.

President A. W. Harris:

SIR:—During the past two years the work of the Horticultural Department has been conducted along the lines indicated in my last report. The work of instruction has included, in addition to technical horticultural courses, the courses in general botany and plant histology. In the botanical work I was assisted during the last year by Mr. E. D. Merrill, a senior in the course in Science; in the horticultural work, by Mr. L. J. Shepard.

Much needed additions to the equipment for instruction in botany and histology have been made by the purchase of five compound microscopes and a set of charts. A large amount of illustrative material has also been obtained from the greenhouses.

At the present time more is being done in the direction of floriculture and vegetable gardening than in previous years. Students thus have an opportunity for observing the commercial phases of horticulture, and more money is available for experimental purposes.

As in previous years, much attention has been given to making needed improvements of the campus. Some of the more important changes made since my last report are: The thorough renovation and smoothing of the area between the public highway and the main drive; the grading and seeding of the land about the new Q. T. V. House and the Mt. Vernon House, thus bringing nearly the whole of the land adjoining the highway upon the west and south of the house occupied by Professor Aubert, into suitable condition for lawn; the making of extensive mixed plantings at the south and west of the farm barns and along the southern boundary; numerous borders and groups of shrubbery around the principal buildings.

The main entrance to the campus is receiving special attention at present. Some planting was done last season, and at your suggestion, in the depression at the right of the main drive there has been constructed a pond, along the banks of which are many water-loving plants. In the course of two or three years this will prove a very attractive feature.

I wish to express my appreciation of the liberality shown in providing funds for carrying on the ornamental work upon the campus, and I am confident that in a short time results will prove the wisdom of the expenditures made. In all of the work of the department the aim has been to build substantially and for the future, rather than for immediate display.

Respectfully submitted,

WELTON M. MUNSON,

Professor of Horticulture.

REPORT OF THE DEPARTMENT OF CIVIL ENGINEERING.

President A. W. Harris:

SIR:—I have the honor to submit the following report for the Department of Civil Engineering.

Until July, 1898, the department was under the direction of Prof. Hamlin, and has been under my charge only one-fourth of the two years for which this report is made. When the last report was presented there were twenty-seven students of civil engineering in the three upper classes; now there are thirty-nine, the increase being largely in the junior class. The time allotted to the technical work, amounts to about forty-eight term hours, and has not been materially changed, but a general rearrangement of the time devoted to the several subjects has been made. Less time is now given to railroad engineering, and more to sanitary and structural engineering. In the earlier days of the institution, a large proportion of our graduates were engaged in railroad location and construction work, and the success of many of them may be attributed to the prominence given to railroad work in their college course; but in recent years fewer men find employment in such work, and more in the various departments of city engineering, and I believe the future will see even more marked changes in that direction. The increasing use of iron and steel in construction brings into prominence the branch of engineering having to do with the design and building of framed structures, a branch which was of minor importance a few years ago. The changes in the course have been in conformity with these changed conditions. The work in structures now extends through the senior year, and includes both a study of the principles involved in designing, and considerable practice in the application of these principles to actual problems. The practical work includes designs and shop drawings for a plate girder bridge, and one or two roof or bridge trusses. We are able to inspect several bridges in the vicinity, which furnish valuable illustrations of type, and of the details of connections. In addition we are also supplied with many pictures of bridges, and with detail drawings of several, furnished us by prominent bridge companies. These, together with the standard books, furnish a working outfit which, although not all that is desired, is still fairly satisfactory. At a small expense we can increase the number and variety of pictures and drawings, and it is my intention to make an effort in that direction in the near future.

The gradual utilization of the great water power of the State leads me to think that more time can be devoted profitably to the study of hydraulics, and I have offered an elective course in hydraulic engineering, in addition to the required course. Five students are taking this work. I am planning to increase the amount of field work in hydraulic measurements next year, provided some necessary additions to the equipment can be made.

It is one of the more important functions of a course in civil engineering, to teach the student the use of current engineering literature. With this object in view, the course in hydraulic engineering has been so conducted as to require considerable study of engineering magazines. The library is provided with complete sets of the transactions of the American Society of Civil Engineers, the Engineering News, and the Journal of the New England Water Works Association, and with incomplete sets of other more or less technical journals. Students are given frequent references to these, in connection with topics assigned for investigation. As a help in this work, a card index of the current engineering literature in the library has been started.

During the past two years the equipment of common surveying instruments has been increased by the addition of two transits,—a Heller and Brightly, and a Gurley, and the department is well supplied with instruments of that class, but needs one or two levels for class work, and a more expensive transit for the finer work of higher surveying.

I am assisted by Mr. C. P. Weston, instructor; Mr. H. S. Boardman, tutor in drawing; and Mr. Ralph Hamlin, assistant. I wish to express my appreciation of their work.

Respectfully submitted,

NATHAN C. GROVER,

Professor of Civil Engineering.

REPORT OF THE DEPARTMENT OF MECHANICAL ENGINEERING.

President A. W. Harris:

SIR:—I have the honor to make the following report for the two years ending December 31, 1898:

The class-room work has remained as heretofore with the exception of slight changes which can best be seen in the catalogue. The shop-work has been modified by substituting, when possible, for the exercise system what may be called the constructive system. The exercises result in the construction of a piece of apparatus. Quite an amount of repair work has been done for other departments, and many pieces of apparatus constructed. The old shop engine, which had become worn out, has been entirely rebuilt. All that remains of the original machine is the casting for the frame and cylinder. The engine is now as good as ever. This work has been done by the students, under the supervision of the foreman.

The department is in real need of a large addition to its laboratory equipment. Below is a list of the articles which seem most necessary:—a calorimeter for steam, condenser, water meters, belt testing machine, dynamometer, pump for testing gauges, draught gauge, planimeter, revolution counter, speed recorder, diflectometer. There is no article mentioned in this list that is not absolutely needed for the most efficient instruction of students.

The condition of the various heating plants is fair, but there is need of repairs in some places. The boiler at Oak Hall has about served its time, and will certainly need a complete set of new tubes before another winter, and it is not improbable that a careful examination will show that a new and larger boiler will be necessary.

The cast iron boiler in Fernald Hall has been practically disabled, but has been put into condition to last through this winter. The system of heating and ventilating this building should be remodelled. The ventilation is almost entirely unprovided for, and this is a building which needs a large amount of forced ventilation. It would seem that as a new heating apparatus must be provided the entire system would better be changed. This is the oldest building on the campus, and it has never been satisfactorily heated.

The vertical boiler at the pumping station has been retubed. A hydraulic pressure gauge should furnish the water supply system at this building. The hard water system has been supplied with a new 1,200 gallon tank to replace the old one, which had become badly decayed.

Respectfully submitted,

WALTER FLINT,

Professor of Mechanical Engineering.

REPORT OF THE LIBRARIAN.

President A. W. Harris:

SIR:—I assumed the duties of librarian at the opening of the fall term of 1897 and my report includes six months of the term of my predecessor, and a year and a half of my own.

During two years 2,921 volumes have been added to the library, 2,603 of this number during my term. The total number of bound volumes is 13,051. The accessions are classified as follows: general works, 117; philosophy, 22; ethics, 4; religion, 28; sociology, 6; statistics, 23; political science, 13; political economy, 143; law, 575; military science, 53; associations and institutions, 28; education, 95; communication, 47; customs, 5; philology, 34; natural science, 39; biology, 12; botany, 25; zoology, 30; useful arts, 13; medicine, 49; pharmacy, 65; engineering, 81; mechanical engineering, 29; electrical engineering, 46; civil engineering, 53; agriculture, 183; horticulture, 43; domestic economy, 6; chemical technology, 4; building, 1; fine arts, 20; amusement, 9; literature, 12; American literature, 22; English literature, 77; German literature, 107; French literature, 62; Italian literature, 1; Spanish literature, 1; Russian literature, 1; Latin literature, 55; Greek literature, 2; geography and description, 27; antiquities, 11; biography, 38; ancient history, 23; modern history, 22; U. S. history, 72; public documents, 316.

The number of pamphlets is about 7,000, having about doubled in two years.

There are on file in the reading room about 125 periodicals, including nearly all the leading American publications in general and technical lines, and a number of representative foreign periodicals. In the reading room in Oak Hall about thirty-five of the most important newspapers and a few other periodicals are on file. It is proposed to move these to Coburn Hall as soon as it is possible to make suitable arrangements. There are on file in the Experiment Station about seventy-five periodicals, which are accessible to the students. There are about twenty law journals on file in the rooms of the School of Law.

The law books are kept at the School of Law, Bangor. They are kept in the rooms for reference only. Since the opening of the school, Mr. Harold E. Cook, a member of the school, has served acceptably as assistant librarian.

In the fall of 1897, through the courtesy of Senator William P. Frye, the library was made a depository for government publications, and will

receive all such publications intended for free distribution, many of which are of great value to us.

Of the accessions, 1,139 are gifts. It is impossible to mention the sources from which all of these have been received, but it is fitting to acknowledge many courtesies received from the U. S. Superintendent of Documents, and from Hon. L. D. Carver, the State Librarian. The largest individual gift came from Mr. H. W. Bryant of Portland, and one of the most valuable from Hon. J. F. Ellis of Brockville, Ontario. A number of the alumni have presented us with books, and it is to be hoped that many more will remember the library in this way.

It is pleasant to note a constant growth in the use of the library by the students, and a marked interest in its welfare by all members of the faculty.

The library is a department of the University upon whose condition the work of every other department is dependent. It is hoped that even more liberal provision for its needs may be made than in the past.

Respectfully submitted,

RALPH K. JONES,

Librarian.

REPORT OF THE DEPARTMENT OF AGRICULTURE.

President A. W. Harris:

SIR:—The Department of Agriculture includes work in both instruction and investigation. The instruction is given by the departments of Natural History, Animal Industry, Bacteriology and Veterinary Science, Horticulture, and Agriculture. The work of investigation is carried on by the Maine Agricultural Experiment Station. The farm, the dairy, the poultry and sheep plants, the greenhouses, orchards, and gardens are maintained partly for their value in instruction and partly for purposes of investigation. Since January, 1898, all the work in agriculture has been under one management. This has resulted in a greater unity of purpose and a better economy of time and money. The details of the work of the Experiment Station are given in its annual reports. The present report covers the work of instruction only.

Courses. The full four years' course remains practically unchanged. While this is efficient for general training, the last two years are preeminently agricultural. In range of subjects and in the required number of hours in practical agriculture, this course offers more to the student than can be obtained elsewhere in New England.

The one and two years' courses in agriculture which have been offered for several years have been discontinued. They do not seem to meet the needs of Maine students, as in six years only one man has registered in these courses. In their place, special students in agriculture are admitted at any time and to such subjects as their previous training will allow. Already a few are availing themselves of this opportunity and it is hoped that the number will increase.

The short winter course has, in order to meet the demands made upon it, practically developed into a course in Dairy Practice. The number in this course does not increase as it should.

The Equipment. The facilities for instruction in agriculture are better than ever and are superior to those of most institutions. During the years 1897 and 1898 the plant has been materially increased. The herds and flocks have been doubled in numbers, a new poultry house and a sheep barn have been erected, the dairy equipment has been improved and new farm and horticultural machinery has been added.

The Instruction. The quality of the instruction in agriculture has been constantly improving. The growth from one man in the department with very inadequate facilities to the present condition

of six professors with modern equipped laboratories and buildings is marked. Every endeavor is made to keep the instruction abreast of the times. Graduates from the full course in agriculture, though few in number, have contributed greatly to the advances made in agriculture. This fact emphasizes the importance of maintaining and increasing the facilities of instruction in this department, in order to attract as many to it as possible and thus extend its usefulness. The further improvements in the science and practice of agriculture will depend, as in the past, largely upon the graduates in agriculture.

The College of Agriculture, more than all other departments of the University, is doing a large and increasing amount of general educational work in the State. In its work of investigation and instruction, it enjoys the full sympathy of the Maine Board of Agriculture and is thus put in touch with the best agriculture of the State. The large correspondence with the more progressive farmers, the publications of the Station, and the work of the agricultural faculty in farmers' institutes and conferences and in lectures before granges and other farmers' organizations, are ways in which the educational facilities of the College are used to promote better agricultural thought and practice among the farmers of the State.

CHAS. D. WOODS,
Professor in Charge.

REPORT OF THE DEPARTMENT OF MILITARY SCIENCE.

President A. W. Harris:

SIR:—I have the honor to submit the following report of the Military Department. I was placed in charge of the department in May, 1898, soon after Lieut. Royden, of the 23rd U. S. Infantry, the regularly detailed military instructor, had been ordered to other duty incident to the war with Spain. From that time until the close of the college year the department was in an unsettled state, owing to the enlistment of members of the cadet corps in the U. S. service. As the volunteers included several of the battalion and company officers of the highest rank, it became necessary to reorganize the battalion in three companies and to break up the band, but work was kept up, and completed in a creditable manner.

Twenty of the men who entered the U. S. service were made non-commissioned officers in the companies and batteries to which they belonged, to which positions they were raised, in nearly every case, for proficiency acquired from work in this department.

The opening of the present college year three weeks later than before, necessitated hard and constant work to fit the incoming class to enter the companies before the drill season ended. This was done with a narrow margin, and in a manner very creditable to the officers who had the work in charge.

In target practice very good work has been done; 2,500 rounds of ammunition have been fired on the range, mostly at 200 yards, and 31 cadets have qualified as first-class marksmen at this distance. These men will shoot at the longer ranges. During the short time when the weather permits outdoor drilling, it is necessary to give the whole attention to that work, so that very little time is left for rifle practice, which is one of the most important parts of a soldier's training. Were there facilities for indoor drill more time could be spent on the range, and a much more valuable training could be given.

In the theoretical instruction there is a great field for improvement. The text-books used deal in great part with questions which should be worked out in connection with the drill. The late war showed most conclusively that in the actual service one great requirement of the soldier is to know how to take care of his own health, and that officers and non-commissioned officers are under great responsibilities to direct to

this end their men, who are of necessity, almost wholly without experience or knowledge of these requirements. As it is the object of institutions of this kind to train leaders, it is necessary to include in the course of military science, general instruction relating to life in the camp and in the field. If we had a drill hall, where the movements in the company and battalion drill could be studied in detail, it would be possible to shorten the time now devoted to the classroom study of the Guard Manual and Drill Regulations, and leave time, in the later years of the course, for other valuable parts of an officer's training. Several textbooks have been written on such subjects, and they are hardly less valuable for the civilian than for the soldier.

A serious question arises as to the care of the property held by the department. Rifles and accouterments should not be taken from the grounds, but so large a number of the cadets live elsewhere that it becomes necessary for this to be done, as there is no room where they can be kept ready for use in the drill. Room for storage even is insufficient, and entirely unsuited for the purpose.

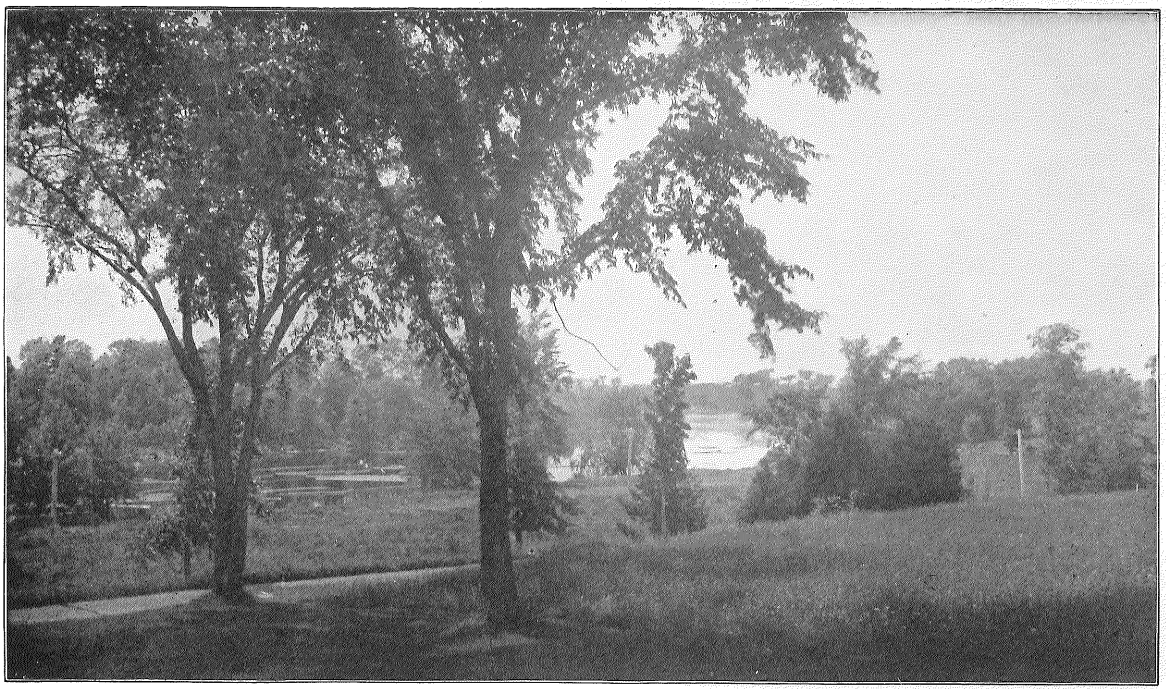
From the foregoing it is seen that the most pressing need is a building which shall contain a large drill hall, suitable for a variety of uses, and other rooms for offices and storage. The reasons given above are not the only ones, as for the physical well-being of the students such a building, containing gymnasium apparatus, is a necessity. The soldier of to-day is an athlete, and no less necessary is physical culture for the private citizen. Without a drill hall, nothing can be done at the very time of year when ordinary forms of exercise are denied and the best results of the drill would be obtained.

The Springfield rifle, with which the department is supplied, is an obsolete arm, and I recommend that effort be made to secure a modern small calibre rifle. It is desirable that swords be purchased for the use of the cadet officers, as it now involves considerable expense for a cadet to accept a commission. Two hundred dollars would furnish the department with a very creditable complement. Several band instruments are needed, and new music. For the support of the band and for attending and repairing the targets and range the sum of two hundred dollars is needed annually.

Respectfully submitted,

PERLEY WALKER,

Acting Commandant.



A VIEW FROM THE CAMPUS.

CATALOGUE

OF THE

University of Maine

1898-1899

ORONO, MAINE

AUGUSTA
KENNEBEC JOURNAL PRINT
1899.

TABLE OF CONTENTS.

CALENDAR.

FALL TERM, 1898.

September	19, Monday,	Arrearage examinations begin.
September	20, Tuesday,	Entrance examinations begin.
September	21, Wednesday,	Fall term begins.
November	22, Tuesday,	Meeting of the Board of Trustees.
November	24, Thursday,	Thanksgiving recess.
November	27, Sunday,	
December	2, Friday,	Sophomore prize declamation.
December	22, Thursday,	Christmas recess begins.

1899.

January	2, Monday,	Arrearage examinations begin. (Spring term studies).
January	4, Wednesday,	Christmas recess ends.
January	27, Friday,	Fall term ends.

SPRING TERM, 1899.

January	27, Friday,	Entrance examinations begin.
January	30, Monday,	Spring term begins.
February	22, Tuesday,	Washington's birthday.
March	29, Wednesday,	Easter recess begins.
April	3, Monday,	Arrearage examinations begin. (Fall term studies).
April	4, Tuesday,	Easter recess ends.

May	19, Friday,	Ivy day.
May	30, Tuesday,	Memorial day.
May	24, Wednesday,	Farmers' field day.
May	27, Saturday,	Senior vacation begins.
June	10, Saturday,	Junior exhibition.
June	11, Sunday,	Baccalaureate sermon.
June	12, Monday,	Convocation.
June	12, Monday,	Class day.
June	13, Tuesday,	Meeting of the Board of Trustees.
June	13, Tuesday,	Exhibition drill.
June	13, Tuesday,	Reception by the fraternities.
June	13, Tuesday,	Reception by the President.
June	14, Wednesday,	COMMENCEMENT.
June	14, Wednesday,	Commencement dinner.
June	14, Wednesday,	Meeting of the Alumni Association.
June	14, Wednesday,	Commencement concert.
June	15, Thursday,	Entrance examinations begin.

FALL TERM, 1899.

September	18, Monday,	Arrearage examinations begin.
September	19, Tuesday,	Entrance examinations begin.
September	20, Wednesday,	Fall term begins.
November	21, Tuesday,	Meeting of the Board of Trustees.
November	30, Thursday,	Thanksgiving recess.
December	3, Sunday,	
December	8, Friday,	Sophomore prize declamation.
December	21, Thursday,	Christmas recess begins.

1900.

January	2, Tuesday,	Arrearage examinations begin. (Spring term studies).
January	3, Wednesday,	Christmas recess ends.
January	26, Friday,	Term ends.

SPRING TERM, 1900.

January	26, Friday,	Entrance examinations begin.
January	29, Monday,	Spring term begins.
June	13, Wednesday,	COMMENCEMENT.

CALENDAR OF THE SCHOOL OF LAW.

1898.

October	5, Wednesday,	Fall term begins.
December	21, Wednesday,	Fall term ends.

1899.

January	18, Wednesday,	Winter term begins.
March	29, Wednesday,	Winter term ends.
April,	5, Wednesday,	Spring term begins.
June	14, Wednesday,	COMMENCEMENT.
October	4, Wednesday,	Fall term begins.
December	20, Wednesday,	Fall term ends.

1900.

January	10, Wednesday,	Winter term begins.
March	21, Wednesday,	Winter term ends.
March	28, Wednesday,	Spring term begins.
June	13, Wednesday,	COMMENCEMENT.

THE UNIVERSITY OF MAINE.

ESTABLISHMENT.

By an Act of Congress, approved July 2, 1862, it was provided that there should be granted to the states, from the public lands, "thirty thousand acres for each Senator and Representative in 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 principal or interest of this fund, for the purchase, erection, or maintenance of buildings; and required each state, taking the benefit of the provisions of the Act, "to provide within five years not less than one college" to carry out the purposes of the Act.

Maine accepted this grant in 1863, and in 1865 constituted "a body politic and corporate, by the name of the Trustees of the State College of Agriculture and the Mechanic Arts." The Trustees were authorized to receive and hold donations, to select the professors and other officers of the college, to establish the conditions for admission, to lay out courses of study, to grant degrees, and to exercise other usual powers and privileges.

The Governor and Council were given the right, "to examine into the affairs of the college, and the doings of the trustees, and to inspect all their records and accounts, and the buildings and premises occupied by the college."

It was provided that in addition to the studies especially required by the Act of Congress, the college should teach such other studies as the facilities would permit.

The Legislature of 1897 changed the name of the institution to "The University of Maine."

ENDOWMENT AND INCOME.

The State of Maine received, under the Act of Congress above referred to, two hundred and ten thousand acres of public land, from which the university has realized an endowment fund of $118,300. This has been increased by a bequest of $100,000 from Abner Coburn of Skowhegan, who was for many years president of the Board of Trustees. The town of Orono contributed $8,000, and the town of Oldtown $3,000, for the purchase of the site on which the buildings stand. The State has appropriated about $300,000 for the material equipment.

Under an Act of Congress approved March 2, 1887, the university receives $15,000 annually for the maintenance of the department known as the Agricultural Experiment Station.

Under an Act of Congress approved August 30, 1890, the university received for its more complete endowment and maintenance, $24,000 for the year ending June 30, 1898.

Under an Act of the Legislature, approved March 20, 1897, the university receives $20,000 annually from the State for current expenses. Student fees and miscellaneous receipts complete the income.

THE BOARD OF TRUSTEES.

Hon. Henry Lord, *President,*	Bangor.
Hon. William Thomas Haines, B. S., LL. B., *Secretary,*	Waterville.
Hon. Russell Benjamin Shepherd,	Skowhegan.
Arthur Lee Moore, B. S.,	Camden.
Hon. Elliott Wood,	Winthrop.
Hon. Charles Plummer Allen, B. S.,	Presque Isle.
Hon. Benjamin Franklin Briggs,	Auburn.
Hon. Edward Brackett Winslow,	Portland.

EXECUTIVE COMMITTEE.

Trustees Lord, Haines, and Allen.

TREASURER.

Hon. Isaiah Kidder Stetson, B. Ph.,	Bangor.

ADVISORY BOARD FOR THE SCHOOL OF LAW.

Hon. Henry Bradstreet Cleaves,	Portland.
Hon. William Henry Fogler,	Rockland.
Hon. Charles Hamlin, M. A.,	Bangor.
Hon. Herbert Milton Heath, M. A.,	Augusta.
Hon. Andrew Peters Wiswell, B. A.,	Ellsworth.

THE EXPERIMENT STATION COUNCIL.

BENJAMIN FRANKLIN BRIGGS,.....Auburn.
ARTHUR LEE MOORE, B. S.,.....Camden.
ELLIOTT WOOD, ...Winthrop.
Committee of the Board of Trustees.

ABRAM WINEGARDNER HARRIS, Sc. D., *President*,.....Orono.
President of the University.

CHARLES DAYTON WOODS, B. S., *Secretary*,.....Orono.
Director of the Station.

BENJAMIN WALKER MCKEEN,.....Fryeburg.
Representative of the State Board of Agriculture.

OTIS MEADER, ...Albion.
Representative of the Maine State Grange.

CHARLES S. POPE,
Representative of the State Pomological Society.

JAMES MONROE BARTLETT, M. S.,.....Orono.
LUCIUS HERBERT MERRILL, B. S.,.....Orono.
FRANCIS LEROY HARVEY, Ph. D.,.....Orono.
FREMONT LINCOLN RUSSELL, V. S.,.....Orono.
WELTON MARKS MUNSON, M. S.,.....Orono.
GILBERT MOTTIER GOWELL, M. S.,.....Orono.
Members of the Station Staff.

THE FACULTY AND OTHER OFFICERS.

ABRAM WINEGARDNER HARRIS, Sc. D.,.....Campus.
President.

MERRITT CALDWELL FERNALD, Ph. D.,.....Bennoch Street.
Professor of Philosophy.

ALFRED BELLAMY AUBERT, M. S.,.....Campus.
Professor of Chemistry.

ALLEN ELLINGTON ROGERS, M. A.,.....College Street.
Professor of Political Economy and History,
and Professor of Constitutional Law.

WALTER FLINT, M. E.,.....College Street.
Professor of Mechanical Engineering.

JAMES MONROE BARTLETT, M. S.,.....College Street.
Chemist in the Experiment Station.

LUCIUS HERBERT MERRILL, B. S.,.....Bennoch Street.
Professor of Biological Chemistry, and
Chemist in the Experiment Station.

FRANCIS LEROY HARVEY, Ph. D.,.....Forest Avenue.
Professor of Natural History, and Entomologist of the Experiment Station.

JAMES NORRIS HART, C. E., M. S.,.....Campus.
Professor of Mathematics and Astronomy.

FREEMONT LINCOLN RUSSELL, B. S., V. S.,.....Main Street.
Professor of Biology, and Veterinarian of the
Experiment Station.

WELTON MARKS MUNSON, M. S.,.....Main Street.
Professor of Horticulture, and Horticulturist of
the Experiment Station.

HORACE MELVYN ESTABROOKE, M. S., M. A.,.....Main Street.
Professor of English.

JAMES STACY STEVENS, Ph. D.,.....Main Street.
Professor of Physics.

GILBERT MOTTIER GOWELL, M. S.,.....Campus.
Professor of Animal Industry, and Agriculturist of the Experiment Station.

CHARLES DAYTON WOODS, B. S.,.....Main Street.
Professor of Agriculture, and Director of the Experiment Station.

.....
Professor of Military Science.

GEORGE ENOS GARDNER, M. A.,.....Bangor.
Professor of Law, and Dean of the School of Law.

LUCILIUS ALONZO EMERY, M. A., LL. D.,.....Ellsworth.
Lecturer on Roman Law.

CHARLES HAMLIN, M. A.,.....Bangor.
Lecturer on Insolvency.

ANDREW PETERS WISWELL, B. A.,.....Ellsworth.
Lecturer on Evidence.

LOUIS CARVER SOUTHARD, M. S.,.....Boston, Mass.
Lecturer on Medico-Legal Relations.

FOREST JOHN MARTIN, LL. B.,.....Bangor.
Lecturer on Pleading and Maine Practice.

HUGO CLARK, C. E.,.....Bangor.
Lecturer on Equity Pleading.

NATHAN CLIFFORD GROVER, B. S., C. E.,.....Campus.
Professor of Civil Engineering.

WILBUR FISK JACKMAN, B. S., Ph. C.,.....Mill Street.
Assistant Professor of Pharmacy.

EDWIN BRYANT NICHOLS, B. A.,.....Campus.
Assistant Professor of Modern Languages.

WALLACE STEDMAN ELDEN, M. A.,.....Main Street.
Assistant Professor of Latin and French.

*HOWARD SCOTT WEBB, M. E., E. E.,.....North Main Street.
Instructor in Mechanical Engineering.

PERLEY WALKER, B. M. E.,.....Campus.
Instructor in Mechanical Engineering, and Acting Instructor in Military Science.

REGINALD RUSDEN GOODELL, M. A.,.....Main Street.
Instructor in Modern Languages.

RALPH KNEELAND JONES, B. S.,.....Main Street.
Librarian.

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*On leave.

CHARLES PARTRIDGE WESTON, B. C. E.,.....Campus.
Instructor in Civil Engineering.
LEONARD PERLEY DICKINSON, B. S.,.....Campus.
Instructor in Electrical Engineering.
GARNETT RYLAND, Ph. D.,.....Campus.
Instructor in Chemistry.
ROBERT HARPER MURRAY, B. A., LL. M.,.....Bangor.
Instructor in Law.
HAROLD SHERBURNE BOARDMAN, C. E.,.....Bangor.
Tutor in Drawing.
STANLEY JOHN STEWARD, B. M. E.,.....Mill Street.
Foreman of the Shop.
LUCIUS JERRY SHEPARD, B. S.,.....Mill Street.
Assistant Horticulturist in the Experiment Station.
ORA WILLIS KNIGHT, M. S.,.....Bangor.
Assistant Chemist in the Experiment Station.
ARTHUR ROBERT CRATHORNE, B. S.,.....Campus.
Tutor in Mathematics.
HERBERT GROVE DORSEY, M. S.,.....Campus.
Tutor in Physics..
ANDREW JARVIS PATTEN, B. S.,.....Forest Avenue.
Assistant Chemist in the Experiment Station.
ALLEN ROGERS, B. S.,.....Campus.
Assistant in Chemistry.
RALPH HAMLIN, B. C. E.,.....Main Street.
Assistant in Civil Engineering.
RAY HERBERT MANSON, B. M. E.,.....Campus.
Assistant in Electrical Engineering.
ELMER DREW MERRILL, B. S.,.....Campus.
Assistant in Natural History.
ARTHUR WELLINGTON PRICE, B. A.,.....Bangor.
Assistant in English.
LEON EDWIN RYTHER, B. S.,.....Campus.
Assistant in Physics.
ELIZABETH ABBOTT BALENTINE,.....Campus.
Secretary to the President and Secretary of the Faculty.

ADMISSION.

Applicants for admission must pass the required examinations, or present satisfactory certificates of fitness, and file with the Treasurer a bond for $150 signed by two bondsmen, as security for the payment of term bills. A cash deposit covering the bills of one term will be accepted in place of a bond. In the School of Law the fees must be paid in advance, and no bond or deposit is required. The University admits men and women, both residents of Maine, and non-residents.

Candidates for advanced standing are examined in the preparatory studies and in those previously pursued by the classes they propose to enter, or other equivalent studies. Certificates will be accepted for the preparatory work, but not for any part of the college work, unless done in some other college.

A student who has accomplished half of the preparatory course may be examined on that part, and receive credit therefor.

The attention of students preparing for the entrance examinations is called to the need of most careful work in mathematics. A good preparation in algebra and geometry is important for those who expect to enter engineering courses. Schools should give a part of the work in algebra and geometry, or should review these subjects, during the last year.

Persons, not candidates for a degree, who wish to take special studies, will be permitted to do so upon giving satisfactory evidence that they are prepared to take the desired studies. If they subsequently desire to become candidates for a degree, or to take a regular course, they will be required to pass the entrance examinations.

No examinations are required for admission to the short winter courses.

College graduates who wish to enter a technical course will be admitted to the junior class without examination. Students

in general college courses, who expect to pursue technical courses after graduation, should avail themselves of opportunities for the study of mathematics, physics, chemistry, and drawing, as a preparation for engineering courses; and of physics, chemistry, and drawing, for chemical and biological courses.

ENTRANCE EXAMINATIONS.

Examinations are held at Orono, beginning on the day before the opening of each term, and on the day after commencement. Examinations will be held, if desired, in each county of the State. These examinations are held on the day after commencement, and persons desiring examinations at such places must notify the President not later than June 1.

To save expense to candidates, examination papers will be sent to any satisfactory person who will consent to conduct an examination. The questions are to be submitted under the usual restrictions of a written examination, and the answers returned to the university accompanied by the indorsement of the examiner. Applications for such examinations must be made out on blanks to be obtained from the secretary of the faculty.

Candidates for the CLASSICAL COURSE are examined on—*Language,* English, Latin, Greek, and either French or German; *History,* Roman, Greek; *Mathematics,* Plane Geometry, Algebra.

Candidates for the LATIN SCIENTIFIC COURSE are examined on—*Language,* English, Latin, and either French or German; *History,* Roman; *Mathematics,* Plane Geometry, Algebra.

Candidates for the SCIENTIFIC COURSE are examined on—*Language,* English, and either French or German; *History,* One of the following,—General, Roman, Greek, English; *Mathematics,* Plane Geometry, Algebra; *Science,* Two of the following,—Botany, Chemistry, Physical Geography, Physics.

Candidates for the CHEMICAL, AGRICULTURAL (four years), PREPARATORY MEDICAL, and PHARMACY (four years) COURSES are examined on—*Language,* English, and one year of a foreign

language either ancient or modern; *Mathematics,* Plane Geometry, Algebra; *Science,* Two of the following,—Botany, Chemistry, Physical Geography, Physics.

Candidates for the CIVIL ENGINEERING, MECHANICAL ENGINEERING, and ELECTRICAL ENGINEERING COURSES are examined on—*Language,* English, and one year of a foreign language either ancient or modern; *Mathematics,* Plane and Solid Geometry, Algebra; *Science,* Two of the following,—Botany, Chemistry, Physical Geography, Physics.

Candidates for SHORT COURSES IN AGRICULTURE (one year or more) are examined on—*Elementary Subjects,* Arithmetic, English Grammar, Physiology; *Language,* English; *History,* United States; *Mathematics,* Algebra through simple equations of the first degree; *Science,* One of the following,—Botany, Chemistry, Physical Geography, Physics.

Candidates for the SHORT COURSE IN PHARMACY (two years) are examined on—*Elementary Subjects,* Descriptive Geography, Arithmetic, English Grammar, Physiology; *History,* United States; *Mathematics,* Algebra through simple equations of the first degree.

SUBSTITUTES.—One year of Latin will be accepted as a substitute for one of the following groups: (a) Geography, Arithmetic, English Grammar, and Physiology; (b) French or German; (c) One science.

One year of French or German will be accepted as a substitute for one of the following groups: (a) Geography, Arithmetic, English Grammar, Physiology; (b) One science.

Other equivalents will be accepted for any of the requirements except Mathematics, English, Latin, or Greek.

For the requirements for admission to the School of Law, see the article on the School of Law.

ENTRANCE REQUIREMENTS.

For requirements of the School of Law see the article on School of Law.
The stars indicate the studies required.

COLLEGE OF	ARTS AND SCIENCES.					AGRICULTURE.		ENGINEERING.			PHARMACY.	
COURSE.	Classical.	Latin Scientific.	Scientific.	Chemical.	Preparatory Medical.	Four years.	Special.	Civil Eng.	Mechanical Eng.	Electrical Eng.	Four years.	Two years.
Elementary: a												
Geography	....	....	...	....	...	....	....	...	....	...	....	*
Arithmetic	....	..	....	....	....	....	*	...	....	....	....	*
Physiology	....	....	....	....	....	....	*	....	....	....	....	*
Language:												
English	*	*	*	*	*	*	*b	*	*	*	*	*b
French / German	*c	*c	*d	*d	*d	*d	....	*d	*d	*d	*d	*d
Latin	*	*										
Greek	*	....										
History:												
United States	....	....	...	....	...	...	*	....	....	....	....	*
General	....	....	*e	....	....	...	....	....	....	....	....	....
Roman	*	*										
Greek	*	....										
English	....	....										
Mathematics:												
Plane Geometry	*	*	*	*	*	*	...	*	*	*	*	....
Solid Geometry	....	....	....	....	....	....	....	*f	*f	*f	....	....
Algebra	*	*	*	*	*	*	*g	*	*	*	*	*g
Science: a												
Botany / Chemistry / Physical Geog / Physics	....	....	*h / *	*h / *	*h / *	*h / *	*i	*h / *	*h / *	*h / *	*h / *	....

a—One year of a foreign language, ancient or modern, will be accepted as a substitute for all the elementary studies, or for one science.
b—English grammar only.
c—One year of French or German.
d—One year of a foreign language, either ancient or modern. In consideration of the recent addition of this requirement, candidates who cannot satisfy it, but are otherwise well prepared, will be allowed to make it up as an extra study after admission. This privilege will be discontinued after 1902.
e—One from general, Roman, Greek, or English history.
f—See page 18.
g—Through simple equations of the first degree only.
h—Two sciences, from the list of four, are required.
i—One science, from the list of four, is required.

ENTRANCE REQUIREMENTS.

The following statements will show in detail the requirements in each subject:

Elementary Subjects.

Descriptive Geography.—The usual school course. Required for short course in pharmacy only.

Arithmetic.—The usual school course, including the metric system of weights and measures. Required for the short courses only.

Physiology.—Cells and tissues, skeleton, muscles, blood and circulation, respiration, nutrition and digestion, lymphatic system, excretory organs, nervous system, special senses, hygiene. Required for the short courses only.

Language.

English.—*Grammar.* The usual school course. Attention should be given to punctuation and the use of capital letters.

Reading and Practice. Each candidate will be required to present evidence of a general knowledge of the substance of the books mentioned below and to answer simple questions on the lives of their authors. The examination will usually be the writing of one or two paragraphs on each of several topics. The treatment of these topics is designed to test the power of clear and accurate expression, and will call for only a general knowledge of the substance of the books. In place of this test, the candidate may present an exercise book, certified by his instructor, containing compositions or other written work done in connection with the reading of the books.

In 1899, this part of the examination will be based upon: Dryden's Palamon and Arcite; Pope's Iliad, books I, VI, XXII, and XXIV; the Sir Roger de Coverley Papers in the Spectator; Goldsmith's The Vicar of Wakefield; Coleridge's Ancient Mariner; De Quincey's The Flight of a Tartar Tribe; Cooper's The Last of the Mohicans; Lowell's The Vision of Sir Launfal; Hawthorne's The House of the Seven Gables.

In 1900, it will be based upon: Dryden's Palamon and Arcite; Pope's Iliad, Books I, VI, XXII, and XXIV; the Sir Roger de Coverley Papers in the Spectator; Goldsmith's The Vicar of Wakefield; Scott's Ivanhoe; De Quincey's The Flight of a Tartar Tribe; Cooper's The Last of the Mohicans; Tennyson's The Princess; Lowell's The Vision of Sir Launfal.

In 1901, it will be based upon: Shakspere's Merchant of Venice; Pope's Iliad, books I, VI, XXII, and XXIV; the Sir Roger de Coverley Papers in the Spectator; Goldsmith's The Vicar of Wakefield; Coleridge's The Ancient Mariner; Scott's Ivanhoe; Cooper's The Last of the Mohicans; Tennyson's The Princess; Lowell's The Vision of Sir Launfal; George Eliot's Silas Marner.

Study and Practice. This part of the examination presupposes a careful study of the works named below. The examination will be upon subject-matter, form, and structure; and will also test the candidate's ability to express his knowledge with clearness and accuracy.

In 1899, this part of the examination will be based upon: Shakspere's Macbeth; Milton's Paradise Lost, books I and II; Burke's Speech on Conciliation with America; Carlyle's Essay on Burns.

In 1900, it will be based upon: Shakspere's Macbeth; Milton's Paradise Lost, books I and II; Burke's Speech on Conciliation with America; Macaulay's Essays on Milton and Addison.

In 1901, it will be based upon: Shakspere's Macbeth; Milton's L'Allegro and Il Penseroso; Comus; Lycidas; Burke's Speech on Conciliation with America; Macaulay's Essays on Milton and Addison.

FRENCH.—The candidate offering French must have: an accurate knowledge of the grammar, especially of the regular and irregular verbs; an elementary knowledge of French composition; the ability to read at sight French prose of average difficulty.

GERMAN.—The candidate offering German must have: an accurate knowledge of the essentials of the grammar; an elementary knowledge of German composition; the ability to read at sight German prose of average difficulty.

LATIN.—The grammar, including prosody; Cæsar's Gallic War, books I, II, III, and IV; Cicero's four orations against Cataline, and those for Archias and for the Manilian Law; Virgil's Eclogues and the Æneid, books I, II, III, IV, V, and VI; the sight translation of Latin passages of average difficulty; translation into Latin of simple English sentences, and easy narrative passages based on the prose authors read. For the last, a vocabulary of unusual words will be furnished. Equivalent readings will be accepted for those prescribed.

GREEK.—The grammar, including prosody; Xenophon's Anabasis, books I, II, III, and IV; Homer's Iliad, books I, and II; the sight translation of easy passages from Xenophon; the translation into Greek of easy passages based on the required books of the Anabasis. For the last, a vocabulary of unusual words will be furnished. Equivalent readings will be accepted.

HISTORY.

UNITED STATES HISTORY.—A knowledge such as may be obtained from Higginson's History of the United States.

GENERAL HISTORY.—A knowledge such as may be obtained from Myers's General History.

ROMAN HISTORY.—A knowledge such as may be obtained from Allen's Short History of the Roman People, to the death of Marcus Aurelius.

GREEK HISTORY.—Pennell's, or Myers's history, to the capture of Corinth, 146 B. C.

ENGLISH HISTORY.—A knowledge such as may be obtained from Montgomery's History of England.

MATHEMATICS.

PLANE GEOMETRY.—The first five books of Wells's, or Wentworth's Geometry, or an equivalent. The preparation should not neglect numerical exercises, original propositions, or the neat and careful construction of figures. The examination will include some original propositions for demonstration or construction.

SOLID GEOMETRY.—Books VI, VII, VIII, and IX of Wells's, or books VI, VII and VIII of Wentworth's Geometry, or an

equivalent. The examination will be planned to test the candidate's ability to apply the theorems to the computation of surfaces and volumes, as well as his readiness in demonstration. Required only of candidates for the engineering courses.

As this is a new requirement, and is not taught in all preparatory schools, students who cannot offer it, but are otherwise well fitted, will be allowed to take it as an extra study after admission. This privilege will be withdrawn after 1902.

ALGEBRA.—The elements, equations of the first degree, radicals, quadratic equations, arithmetical and geometrical progression. Candidates for the short courses in agriculture and the short course in pharmacy are not examined on the topics beyond simple equations of the first degree. A satisfactory preparation may be obtained from Greenleaf's Elementary, Newcomb's, Wells's Academic or Wentworth's School, Algebra.

SCIENCE.

BOTANY.—An elementary course which will bring the student in contact with plants. Gray's Lessons in Botany, Bailey's Lessons with Plants, Spaulding's Introduction to Botany, or Bergen's Elements of Botany, will serve as a satisfactory guide.

CHEMISTRY.—The necessary ground is covered by the following text-books: Fisher, Remsen, Roscoe (inorganic part), Shepard, Storer and Lindsay, Williams.

PHYSICAL GEOGRAPHY.—A satisfactory preparation may be obtained from Appleton's Physical Geography.

PHYSICS.—A satisfactory treatment of this subject may be found in Avery's, or Gage's Physics.

CERTIFICATES OF FITNESS.

Any preparatory school whose course of instruction covers in a satisfactory manner the requirements for admission, may be admitted to the list of approved schools. Application for such approval should be made to the President of the university, and must be accompanied by a detailed statement of the course of study.

Candidates for admission from these schools, will be admitted to the Freshman Class upon the certificate of the principals, showing that the required studies have been completed satisfactorily. Certificates must be made out on blanks furnished by the university.

APPROVED SCHOOLS.

Athol High School, *Athol, Mass.,*
F. C. Avery, Principal.

Bangor High School, *Bangor,*
Henry K. White, M. A., Principal.

Bar Harbor High School, *Bar Harbor,*
Prescott Keyes, Jr., B. C. E., Principal.

Bath High School, *Bath,*
H. E. Cole, M. A., Principal.

Belfast High School, *Belfast,*
Hugh D. McLellan, Principal.

Berwick Academy, *South Berwick,*
F. Stanley Stebbins, B. A., Principal.

Boynton High School, *Eastport,*
Everett L. Getchell, B. A., Principal.

Brewer High School, *Brewer,*
Elmer T. Boyd, B. A., Principal.

Bridge Academy, *Dresden Mills,*
Alonzo A. Morelen, B. A., Principal.

Bridgton Academy, *North Bridgton,*
C. C. Spratt, B. A., Principal.

Bridgton High School, *Bridgton,*
J. E. Connor, B. A., Principal.

Bristol Academy, *Taunton, Mass.,*
William A. Lackey, B. A., Principal.

Calais High School, *Calais,*
Verne M. Whitman, M. A., Principal.

Caribou High School, *Caribou,*
Bernard W. Owen, B. A., Principal.

Cherryfield Academy, *Cherryfield,*
H. L. Whitman, M. A., Principal.

Coburn Classical Institute, *Waterville,*
F. W. Johnson, M. A., Principal.

Cony High School, *Augusta,*
C. F. Cook, M. A., Principal.

Cornish High School, *Cornish,*
Stephen Rounds, Principal.

Deering High School, *Deering,*
Edgar H. Crosby, M. A., Principal.

Dexter High School, *Dexter,*
W. S. Brown, B. A., Principal.

Dover English High School, *Dover,*
W. J. Rideout, Principal.

East Corinth Academy, *East Corinth,*
A. L. Dennison, B. A., Principal.

East Maine Conference Seminary, *Bucksport,*
J. F. Haley, President.

Edward Little High School, *Auburn,*
J. F. Moody, B. A., M. A., Principal.

Ellsworth High School, *Ellsworth,*
H. A. Moore, B. A., Principal.

English High School, *Boston, Mass.,*
Robert E. Babson, B. A., Principal.

Farmington High School, *Farmington,*
Charles M. Pennel, B. A., Principal.

Fort Fairfield High School, *Fort Fairfield,*
Wm. L. Bonney, M. A., Principal.

Foxcroft Academy, *Foxcroft,*
Lyman K. Lee, B. A., Principal.

Framingham Academy and High School, *Framingham, Mass.,*
John H. Parsons, M. A., Principal.

Freeport High School, *Freeport,*
Will O. Hersey, B. A., Principal.

Gardiner High School, *Gardiner,*
William L. Powers, M. A., Principal.

George Stevens Academy, *Bluehill,*
Charles W. Cutts, B. A., Principal.

Gould's Academy, *Bethel,*
F. E. Hanscom, Principal.

Greeley Institute, *Cumberland Center,*
Percy F. Williams, B. A., Principal.

Guilford High School, *Guilford,*
William S. Parsons, B. A., Principal.

Hallowell High School, *Hallowell,*
Herbert W. Dutch, B. A., Principal.

Hampden Academy, *Hampden,*
George C. Webber, B. A., Principal.

Hebron Academy, *Hebron,*
W. E. Sargent, M. A., Principal.

Higgins Classical Institute, *Charleston,*
H. Warren Foss, B. A., Principal.

Island Falls High School, *Island Falls,*
Sans Lorenzo Merriman, B. A., Principal.

Leavitt Institute and Training School, *Turner Center,*
Leland A. Ross, Principal.

Lewiston High School, *Lewiston,*
G. H. Libby, B. A., Principal.

Limington Academy, *Limington,*
..... Principal.

Lincoln Academy, *Newcastle,*
George H. Larrabee, M. A., Principal.

Lisbon High School, *Lisbon,*
Abner T. Hinckley, B. A., Principal.

Machias High School, *Machias,*
D. Lyman Wormwood, B. A., Principal.

Madison High School, *Madison,*
Edward M. Tucker, B. A., Principal.

Milo High School, *Milo,*
Charles E. Perkins, Principal.

Monmouth Academy, *Monmouth,*
W. S. Masterman, Principal.

Monson Academy, *Monson,*
W. S. Knowlton, M. A., Principal.

North Brookfield High School, *North Brookfield, Mass.,*
C. L. Judkins, B. A., Principal.

North Yarmouth Academy, *Yarmouth,*
Rev. B. P. Snow, M. A., Principal.

Norway High School, *Norway,*
Arthur G. Wiley, B. A., Principal.

Oakland High School, *Oakland,*
F. L. Tapley, Principal.

Oldtown High School, *Oldtown,*
Harry T. Watkins, B. A., Principal.

Orono High School, *Orono,*
S. H. Powell, M. A., Principal.

Orange High School, *Orange, Mass.,*
Charles S. Simmons, Principal.

Palmer High School, *Palmer, Mass.,*
Alfred C. Thompson, B. A., Principal.

Parsonsfield Seminary and Piper High School, *N. Parsonsfield,*
Isaiah Trufant, M. A., Principal.

Patten Academy, *Patten,*
H. N. Gardner, B. A., Principal.

Pennell Institute, *Gray,*
W. B. Andrews, M. A., Principal.

Phillips High School, *Phillips,*
Ernest E. Morse, B. A., Principal.

Portland High School, *Portland,*
Albro E. Chase, B. A., Principal.

Plymouth High School, *Plymouth, Mass.,*
Agnes W. Lindsey, Principal.

Richmond High School, *Richmond,*
Frederick J. Libby, B. A., Principal.

Ricker Classical Institute, *Houlton,*
Arthur M. Thomas, M. A., Principal.

Rockland High School, *Rockland,*
L. E. Moulton, B. A., Principal.

Skowhegan High School and Bloomfield Academy, *Skowhegan,*
F. G. Farrington, B. A., Principal.

South Paris High School, *South Paris,*
L. P. Gerrish, B. A., Principal.

South Portland High School, *South Portland,*
Ralph A. Parker, B. A., Principal.

Thomaston High School, *Thomaston,*
Albert S. Cole, B. A., Principal.

Thornton Academy, *Saco,*
Edwin P. Sampson, M. A., Principal.

Topsham High School, *Topsham,*
John A. Cone, B. A., Principal.

Warren High School, *Warren,*
F. E. Russell, M. A., Principal.

Washington Academy, *East Machias,*
Fred O. Small, B. A., Principal.

Waterville High School, *Waterville,*
J. E. Nelson, Principal.

Westbrook High School, *Westbrook,*
Fred W. Freeman, M. A., Principal.

Westbrook Seminary, *Deering,*
Rev. H. S. Whitman, M. A., President.

Wilton Academy, *Wilton,*
Drew T. Harthorn, M. A., Principal.

Yarmouth High School, *Yarmouth,*
Herbert M. Moore, B. A., Principal.

THE BUILDINGS AND THEIR EQUIPMENT.

WINGATE HALL.—The most conspicuous building on the campus, Wingate Hall, named in honor of William P. Wingate of Bangor, long an honored member of the board of trustees, is a three-story brick structure rectangular in form, with a handsome clock tower. It was erected for the departments of civil and mechanical engineering, but is at present occupied in part by other departments. On the ground floor are two large designing rooms, recitation rooms, armory, instrument rooms, and private offices for the professors of civil and mechanical engineering. On the second floor is a room occupied by the Young Men's Christian Association, the offices and recitation rooms of the professor of mathematics and the professor of physics, the physical laboratory, and the apparatus room. On the third floor are large, well lighted drawing rooms. In the basement are the testing room of the department of civil engineering, and the dynamo laboratory. The testing room contains a Riehlé testing machine of 60,000 pounds capacity, cement testing machine, etc. The dynamo laboratory is provided with solid stone tables, and has working accommodations for twenty students.

OAK HALL.—North of Wingate Hall is Oak Hall, a substantial four-story brick building used as a dormitory for men, named in honor of Lyndon Oak of Garland, for many years a useful member of the board of trustees. It contains forty-nine study rooms for students, bath rooms, and reading room, is heated by steam, supplied with water, and lighted by electricity. It was remodeled in 1895.

FERNALD HALL.—This building, named in honor of Merritt C. Fernald, Ph. D., president of the college from 1879 to 1893, is a two-story brick building. situated south of Wingate Hall. It

contains twenty rooms devoted to the needs of the department of chemistry. On the first floor are the quantitative and pharmaceutical laboratories, office and private laboratories for the professors of chemistry and pharmacy; upon the second floor are the lecture rooms, the qualitative laboratory, the office and private laboratory of the instructor in qualitative analysis, a store room, and a recitation room. Under the roof are arranged the photographic studio, laboratory, and dark rooms. In the basement is an assay laboratory, the laboratory for beginners, and store rooms.

The department of chemistry is well supplied with apparatus, The greater part of the chemical library, including the current and bound volumes of journals, is kept in this building.

COBURN HALL.—Directly south of Fernald Hall is Coburn Hall, named in honor of Abner Coburn of Skowhegan, the chief benefactor of the university. It is a brick building, three stories in height. On the first floor are located the reading room and the library, the laboratory and recitation room of the professor of agriculture, and the recitation room of the professor of English. On the second floor are the botanical and entomological laboratories, and recitation rooms for the departments of natural history, civics, and modern languages. Over the library is the museum, extending through two stories. The collections are large and constantly increasing. On the third floor is the university chapel. In the basement is the President's office.

THE MACHINE SHOP.—In the rear of Fernald Hall is the machine shop, a wooden building 125 feet long and two stories high, containing the foundry, forge shop, carpenter shop, machine shop and tool room. The building is thoroughly equipped. An adjoining building, 30 by 57 feet, contains the dynamos, motors and storage battery, which operate the university lighting plant, and serve the seniors for study in their technical work in electrical engineering,

THE EXPERIMENT STATION BUILDING.—South of the Machine Shop stands a two-story brick building with basement, which is devoted to the uses of the Agricultural Experiment Station. In the basement are rooms for the storage and preparation of

samples for analysis, and the boiler room. On the ground floor are the chemists' office, reagent room, the laboratory used in the analysis of foods and feeding stuffs, the nitrogen room, and the laboratory used in the analysis of fertilizers. On the second floor are the general office, the director's private office, the bacteriological laboratory, the journal room, and a storage room for books and pamphlets. The building is heated by steam, supplied with gas and electricity, and thoroughly equipped with apparatus.

THE HORTICULTURAL BUILDING.—East of the Experiment Station is the Horticultural Building, consisting of a head-house and three greenhouses. In the head-house are the office of the professor of horticulture, a work room, a seed storage room, a photographing room, the janitor's room, and a room used for storage. The main greenhouse, 20 feet by 100 feet, is devoted to the use of the Experiment Station, and to the instruction of students. A second structure, 20 feet by 80 feet, running parallel to the main greenhouse, is divided, one-half being used for growing plants, and the remainder as a potting and storage room. The third greenhouse is designed for investigations in plant nutrition. In the south end of this house is the conservatory.

THE DAIRY BUILDING.—The Dairy Building, 50 feet by 42 feet, contains a milk room, a butter room, a cheese room, a cold storage room, a cheese curing room, a lecture room, the office of the professor of animal industry, and a laboratory. It is supplied with all necessary appliances for teaching the most approved methods of handling milk, cream, butter, and cheese. The building is heated with steam and supplied with hot and cold water. Power is furnished by a 6-horse power engine, and by a baby tread horse power.

THE MT. VERNON HOUSE.—This is a wooden building, completed in 1898, to furnish dormitory accommodations for women. It is at present occupied in part by members of the faculty, but will be entirely devoted to women, whenever the numbers demand it. The house is situated near the recitation and laboratory buildings, upon a site overlooking the campus, and commanding a magnificent view of the river, villages, and mountains.

It is two stories in height, built in the old colonial style, and consists of a long central portion and two wings. It contains parlor, dining room, kitchen, bath room, and sixteen study rooms, each intended for two students. The rooms are large, well lighted, heated by a combined system of hot air and hot water, and provided with electric lights from the University plant. A special feature is the long hall on each floor, extending sixty-six feet upon the front of the building, and wide enough to serve as assembly or study rooms. The building, and the students who live in it, are under the supervision of a competent matron.

THE FRATERNITY HOUSES.—Four of the student fraternities occupy club houses. Three of the houses are on the campus, and one in the village of Orono. They are large, well arranged houses, affording rooms for about twenty-five students each. Three of the fraternities maintain their own boarding establishment under the supervision of a matron.

OTHER BUILDINGS.—In addition to the buildings already described, there are six others devoted to various purposes. Among these are the President's house, the Commons or general college boarding house, and three residences occupied by members of the faculty.

THE PRESIDENT'S HOUSE.

DEPARTMENTS OF INSTRUCTION.

ENGLISH.

PROFESSOR ESTABROOKE; MR. GOODELL; MR. PRICE.

Eh. 1. DECLAMATIONS.—In the freshman and sophomore years, the student is required to give seven declamations before his class each year—four in the fall and three in the spring. In the junior year, he is required to give two declamations in the fall and three in the spring. In the senior year, he delivers three orations. PROF. ESTABROOKE; MR. PRICE.

Eh 2. THEMES.—In his sophomore year, the student writes five themes, each containing from 1,000 to 1,200 words. The themes are historical in character—the results of the student's reading on special epochs of history, or of his study of the lives of historic men. In his junior year, he prepares the same number of themes, each containing from 1,000 to 1,200 words. He also submits a theme for a prize at the close of the year. In the senior year, he writes themes, prepares orations, or takes part in debates. PROF. ESTABROOKE; MR. GOODELL; MR. PRICE.

Eh 3. RHETORIC.—The classification of sentences—rhetorical, grammatical; analysis of the sentence with reference to punctuation; exercises in punctuation; diction, with special reference to purity, propriety, and precision of language; clearness, strength, and unity of sentences; extended study of the paragraph; themes—including the narrowing of the subject from general to particulars; construction of outline, etc.; fortnightly exercises, in extemporaneous speaking; frequent exercises in extemporaneous writing; formal essays.

The text-book is Genung's Outlines of Rhetoric. *Five hours a fortnight for eighteen weeks.* Fall term. PROF. ESTABROOKE.

Eh 4. RHETORIC.—Extended study of narration and description, argumentative composition, and persuasion; construction of analytical outlines of selections from Burke, Webster, Macaulay, and others; practice in different kinds of composition; exercises in extemporaneous speaking and writing, as in course 3.

The text-book is A. S. Hill's Principles of Rhetoric. *Five hours a fortnight for eighteen weeks.* Spring term. PROF. ESTABROOKE.

Eh 5. ANGLO-SAXON.—Elements of Anglo-Saxon grammar; reading of easy prose and poetry. Constant reference is made to the relation of Anglo-Saxon to modern English.

The text-book is Smith's Old English Grammar. *Five hours a fortnight for eighteen weeks.* Spring term. PROF. ESTABROOKE.

Eh 8. ENGLISH LITERATURE.—The text-book is Pancoast's Introduction to English Literature, which is supplemented by frequent lectures. Some of the masterpieces of our language, together with the historical and social conditions under which they were produced, are studied in detail. The student prepares frequent essays upon the times and characters studied, makes analyses of the books, and writes critical reviews of the same. The work of the classroom is supplemented by study in the library.

Five hours a fortnight for eighteen weeks. Fall term. PROF. ESTABROOKE.

Eh 9. ENGLISH LITERATURE.—A continuation of course 8. *Five hours a fortnight for eighteen weeks.* Spring term. PROF. ESTABROOKE.

Eh 10. ENGLISH LITERATURE.—In this course particular attention is paid to the development of the English novel and to the Lake Poets. *Five hours a fortnight for eighteen weeks.* Fall term. PROF. ESTABROOKE.

Eh 11. ENGLISH LITERATURE.—A continuation of course 10, including a study of the most important American authors of the present century. *Five hours a fortnight for eighteen weeks.* Spring term. PROF. ESTABROOKE.

MODERN LANGUAGES.

ASSISTANT PROFESSOR NICHOLS; ASSISTANT PROFESSOR ELDEN; MR. GOODELL.

Ml 1. FRENCH.—The object of this course is to enable the student to acquire the essentials of the grammar, and the ability to read moderately easy prose.

The text-books are: Whitney, Practical Grammar, Part 1; Super, French Reader; Erckmann-Chatrian, Madame Thérèse; Mérimée, Colomba. *Five hours a week for eighteen weeks.* Fall term. PROF. NICHOLS; MR. GOODELL.

Ml 2. FRENCH.—A continuation of course 1.

The text-books are: Whitney, Practical French Grammar, Part 2; Hugo, Quatrevingttrieze; Angier, Le Gendre de M. Poirier; Fortier, Napóleon; Mariotte-Davies, Elementary Scientific French Reader. *Five hours a week for eighteen weeks.* Spring term. PROF. NICHOLS; MR. GOODELL.

Ml 3. FRENCH.—Hugo, Hernani; Balzac, Eugéne Grandet; Herdler, Scientific French Reader. Composition. *Five hours a fortnight for eighteen weeks.* Fall term. PROF. NICHOLS; PROF. ELDEN.

Ml 4. FRENCH.—Daudet, Morceaux Choisis; Fortier, Histoire de la Litterature Française; Sainte-Beuve, Seven of the Causeries du Lundi. Composition and collateral reading. *Five hours a fortnight for eighteen weeks.* Spring term. PROF. NICHOLS; PROF. ELDEN.

Ml 5. GERMAN.—An introductory course, covering the elements of the grammar.

The text-books are: Thomas, Practical German Grammar, Part 1; Heyde, L'Arrabbiata; Gerstäcker, Irrfahrten; Storm, Immensee. *Five hours a week for eighteen weeks.* Fall term. MR. GOODELL.

Ml 6. GERMAN.—Thomas, Practical German Grammar, Part 2; Bewdix, Die Hochzeitsreise; Keller, Dietigen; Helmholz, Goethe's Naturwissenschaftliche Arbeiten; Freytag Die Journalisten. *Five hours a week for eighteen weeks.* Spring term. MR. GOODELL.

Ml 7. GERMAN.—Brandt and Day, Scientific German Reader; Schiller, Wilhelm Tell. *Five hours a fortnight for eighteen weeks.* Fall term. PROF. NICHOLS.

Ml 8. GERMAN.—Lessing, Emilia Galotte; Cohn, Ueber Bakterien; Goethe, Dichtung und Wahrheit. *Five hours a fortnight for eighteen weeks.* Spring term. PROF. NICHOLS.

Ml 9. SPANISH.—This course is designed to give a reading knowledge of Spanish. Elective for those who have completed course 2.

The text-books are: Edgren, Spanish Grammar; Ramsey, Spanish Reader; de Larra, Partir á Tiemp; Beeton de los Herreros, La Independencia; Galdós, Doña Perfecta. *Five hours a fortnight for eighteen weeks.* Given in the fall term of even years. PROF. NICHOLS.

Ml 10. SPANISH.—A continuation of course 9. *Five hours a fortnight for eighteen weeks.* Given in the spring term of odd years. PROF. NICHOLS.

Ml 11. ITALIAN.—The aim of this course is a reading knowledge of Italian. Elective for those who have completed course 2.

The text-books are: Grandgent, Italian Grammar; De Amicis, Cuore; Del Testa, L'Oro e l'Orpello; Manzoni, I promessi Spori. *Five hours a fortnight for eighteen weeks.* Given in the fall term of odd years. PROF. NICHOLS.

Ml 12. ITALIAN.—A continuation of course 11.

Five hours a fortnight for eighteen weeks. Given in the spring term of even years. PROF. NICHOLS.

Ml 13. OLD FRENCH.—Paris, Extraits de la Chanson de Roland; Constans, Chrestomathie de l'Ancien Français. Lectures. Assigned readings and essays required. *Five hours a fortnight for eighteen weeks.* Fall term. PROF. NICHOLS.

Ml 14. OLD FRENCH.—A continuation of course 13.

Five hours a fortnight for eighteen weeks. Spring term. PROF. NICHOLS.

Ml 15. FRENCH LITERATURE.—French literature of the sixteenth and seventeenth centuries. The more important authors will be read. Lectures. Collateral readings and composition. Elective for those who have completed course 4. *Five hours a fortnight for eighteen weeks.* Given in the fall term of even years. PROF. NICHOLS.

Ml 16. FRENCH LITERATURE.—A continuation of course 15. *Five hours a fortnight for eighteen weeks.* Given in the spring term of odd years. PROF. NICHOLS.

Ml 17. FRENCH LITERATURE.—French Literature of the eighteenth and nineteenth centuries. The more important authors will be read. Lectures. Collateral readings and composition. Elective for those who have completed course 4. *Five hours a fortnight for eighteen weeks.* Given in the fall term of odd years. PROF. NICHOLS.

Ml 18. FRENCH LITERATURE.—A continuation of course 17. *Five hours a fortnight for eighteen weeks.* Given in the spring term of even years. PROF. NICHOLS.

LATIN.

ASSISTANT PROFESSOR ELDEN.

Lt 1. LIVY.—History of Rome, books I, XXI and XXII. The text-books are Livy, and Collar's Latin Composition. *Five hours a week for eighteen weeks.* Fall term.

Lt 2. CICERO.—De Amicitia and De Senectute, selected letters. The text-book is Bennett's M. Tulli Ciceronius Laelius De Amicitia. *Five hours a week for eighteen weeks.* Spring term.

Lt 3. TACITUS.—Germania and Agricola. The text-book is Hopkins's Germania and Agricola. *Five hours a fortnight for eighteen weeks.* Fall term.

Lt 4. HORACE.—Odes and Epodes; Satires and Epistles. The text-books are: Shorey's Odes and Epodes; Kneeland's Satires and Epistles. *Five hours a fortnight for eighteen weeks.* Spring term.

Lt 5. PLAUTUS AND TERENCE.—
The text-books are: Sonnenschein's Captivi of Plautus; Chase and Stuart's Adelphi and Andria of Terence. *Five hours a fortnight for eighteen weeks.* Fall term.

Lt 6. PLINY THE YOUNGER AND JUVENAL.—Selected letters.
The text-books are: Richard and Bernard's Letters of Pliny; Lindsay's Satires of Juvenal. *Five hours a fortnight for eighteen weeks.* Spring term.

Lt 9. LATIN POETRY.—The text-book is Crowell's Selections from the Latin Poets. *Five hours a fortnight for eighteen weeks.* Fall term.

Lt 10. TACITUS.—Histories.
The text-book is Tyler's Histories. *Five hours a fortnight for eighteen weeks.* Spring term.

Lt 11. LATIN LITERATURE.—A systematic study of Latin literature, particularly of the development of the satire, and a comparison with its treatment in modern literatures. Illustrative readings from different writers will be required. Special topics in Roman archæology will be investigated, and attention given to the manners and customs of the Greeks and Romans. Lectures, recitations, and private readings.
The text-book is Crutwell's History of Roman Literature. *Five hours a fortnight for eighteen weeks.* Fall term.

Lt 12. LATIN LITERATURE.—A continuation of course 11. *Five hours a fortnight for eighteen weeks.* Spring term.

PHILOSOPHY.

PROFESSOR FERNALD.

Pl 1. PSYCHOLOGY.—Under the elementary processes of life are considered, consciousness, discrimination, sensation, feeling, conation, ideation; under the more elaborate processes, perception by the senses, memory, imagination, influence and judgment, intuition, conceptions, the emotions and sentiments, will as volition, will as choice, and will in relation to character.
The text-book is Ladd's Outlines of Descriptive Psychology. *Five hours a fortnight for eighteen weeks.* Fall term.

Pl 2. LOGIC.—The object of this course is to give the student a just appreciation of the functions of language as a means of expressing thought, and a familiarity with the principles of deductive and inductive reasoning. The student is given frequent drills in the application of logical principles.

The text-book is Ryland's Logic. *Five hours a fortnight for eighteen weeks.* Spring term.

Pl 3. HISTORY OF PHILOSOPHY.—The text-book is Weber's History of Philosophy. *Five hours a fortnight for eighteen weeks.* Fall term. PROF. ROGERS.

CIVICS AND HISTORY.

PROFESSOR ROGERS.

Cv 1. GENERAL HISTORY.—A study of primitive institutions and customs.

The text-book is Schwill's History of Modern Europe. *Five hours a fortnight for eighteen weeks.* Spring term.

Cv 2. ENGLISH HISTORY.—The text-book is Green's Shorter History of the English People. *Five hours a fortnight for eighteen weeks.* Spring term.

Cv 3. AMERICAN HISTORY.—Lectures, supplemented by topical investigation and study. *Two hours a week for eighteen weeks.* Spring term.

Cv 4. THE PHILOSOPHY OF HISTORY.—The literature, learning, political and economic conditions of the great historic nations, and the growth of their institutions.

The text-book, Duruy's History of the Middle Ages, is supplemented by lectures and topical studies. *Five hours a fortnight for eighteen weeks.* Offered in the fall term of even years.

Cv 8. POLITICAL ECONOMY.—Instruction is given by lectures. Topical readings and investigations are required. *Five hours a week for eighteen weeks.* Spring term.

Cv 9. CONSTITUTIONAL LAW AND HISTORY.—An outline of Anglo-Saxon institutions, the development of the English Constitution, the growth and political conditions of the American colonies, the Articles of Confederation, the adoption of the Constitution, and the comparative study of the Federal and the State Constitutions from the historical and legal standpoints.

The text-book is Rogers's Our System of Government. *Five hours a week for eighteen weeks.* Fall term.

Cv 10. MUNICIPAL LAW.—Lectures on the general principles of contracts, sales, notes, bills, conveyancing, agency, bailments, and insurance. *One hour a week for eighteen weeks.* Spring term.

Cv 11. INTERNATIONAL LAW.—The text-book is Woolsey's International Law. *Five hours a fortnight for eighteen weeks.* Offered in the fall term of odd years.

Cv 12. LIBRARY WORK.—The aim of this work is to familiarize the student with the literature of history and economics and to teach him to make critical and independent investigation of questions connected with these subjects.

†*Five hours a fortnight for eighteen weeks.* Spring term.

LAW.

Lw 1. CONTRACTS.—The text-book is Huffcut & Woodruff's Cases on Contract. *Four hours a week for eleven weeks.* Fall term. PROF. GARDNER.

Lw 2. CONTRACTS.—A continuation of course 1.

Four hours a week for ten weeks. Winter term. PROF. GARDNER.

Lw 3. TORTS.—The text-book is Bigelow's Cases on Torts.

Four hours a week for eleven weeks. Fall term. MR. MURRAY.

Lw 4. TORTS.—A continuation of course 3.
Three hours a week for ten weeks. Winter term. MR. MURRAY.

Lw 5. REAL PROPERTY.—The text-book is Tiedeman on Real Property. *Four hours a week for eleven weeks.* Fall term. PROF. GARDNER.

Lw 6. REAL PROPERTY.—A continuation of course 5.
Three hours a week for ten weeks. Winter term. PROF. GARDNER.

Lw 7. REAL PROPERTY.—A continuation of course 6.
Two hours a week for eleven weeks. Spring term. PROF. GARDNER.

Lw 8. DOMESTIC RELATIONS.—The text-book is Ewell's Cases on Domestic Relations. *Two hours a week for ten weeks.* Winter term. PROF. GARDNER.

Lw 9. CRIMINAL LAW.—The text-book is Chaplin's Cases on Criminal Law. *Two hours a week for eleven weeks.* Spring term. MR. MURRAY.

Lw 10. SALES.—The text-book is Burdick's Cases on Sales.
Three hours a week for eleven weeks. Spring term. PROF. GARDNER.

Lw 11. BAILMENTS.—The text-book is McClain's Cases on Carriers. *Three hours a week for eleven weeks.* Spring term. MR. MURRAY.

Lw 12. COMMON LAW PLEADING.—The text-book is Perry on Pleading. *Two hours a week for eleven weeks.* Spring term. MR. MARTIN.

Lw 13. HISTORY OF LAW.—Lectures.
One hour a week for eleven weeks. Fall term. PROF. ROGERS.

Lw 14. BANKRUPTCY.—Lectures.
One hour a week for eleven weeks. Fall term. MR. HAMLIN.

Lw 15. BANKRUPTCY.—A continuation of course 14.
One hour a week for ten weeks. Winter term. MR. HAMLIN.

Lw 16. BANKRUPTCY.—A continuation of course 15.
One hour a week for eleven weeks. Spring term. MR. HAMLIN.

Lw 17. EVIDENCE.—The text-book is Thayer's Cases on Evidence. *Four hours a week for eleven weeks.* Fall term. PROF. GARDNER.

Lw 18. EVIDENCE.—A continuation of course 17.
Four hours a week for ten weeks. Winter term. PROF. GARDNER.

Lw 19. EQUITY.—The text-books are Bispham's Principles of Equity and Shepard's Cases in Equity. *Four hours a week for eleven weeks.* Fall term. MR. MURRAY.

Lw 20. EQUITY.—A continuation of course 19.
Four hours a week for ten weeks. Winter term. MR. MURRAY.

Lw 21. CORPORATIONS.—The text-book is Elliott on Private Corporations. *Four hours a week for eleven weeks.* Fall term. PROF. GARDNER.

Lw 22. AGENCY.—The text-book is Huffcut's Cases on Agency. *Two hours a week for ten weeks.* Winter term. PROF. GARDNER.

Lw 23. CONSTITUTIONAL LAW.—The text-book is Boyd's Cases. *Two hours a week for ten weeks.* Winter term. PROF. ROGERS.

Lw 24. COMMERCIAL PAPER.—The text-book is Huffcutt's Cases on Negotiable Instruments. *Four hours a week for eleven weeks.* Spring term. PROF. GARDNER.

Lw 25. WILLS AND ADMINISTRATION.—The text-book is Chaplin's Cases on Wills. *Four hours a week for eleven weeks.* Spring term. PROF. GARDNER.

Lw 26. PARTNERSHIP.—The text-book is Burdick's Cases on Partnership. *Four hours a week for eleven weeks.* Spring term. MR. MURRAY.

Lw 27. EQUITY PLEADING.—The text-book is Langdell's Equity Pleading. *One hour a week for eleven weeks.* Spring term. MR. CLARK.

Lw 28. ROMAN LAW.—Lectures.
One hour a week for eleven weeks. Spring term. JUDGE EMERY.

Lw 29. EVIDENCE.—Lectures.
The time is not fixed. JUDGE WISWELL.

Lw 30. MEDICO-LEGAL RELATIONS.—Lectures.
One hour a fortnight for ten weeks. Winter term. MR. SOUTHARD.

Lw 31. MEDICO-LEGAL RELATIONS.—A continuation of course 30. *One hour a fortnight for eleven weeks.* Spring term. MR. SOUTHARD.

MATHEMATICS AND ASTRONOMY.

PROFESSOR HART; PROFESSOR FERNALD; MR. CRATHORNE.

Ms 1. SOLID GEOMETRY.—Solid and spherical geometry, including the mensuration of solids, and original demonstrations.
The text-book is Baker's Solid Geometry. *Five hours a week for eight weeks.* Spring term. PROF. HART; MR. CRATHORNE.

Ms 18. ALGEBRA.—Review of quadratic equations and of the binomial theorem with integral, fractional, and negative exponents; variation; progression; convergence and divergence of series; undetermined coefficients; partial fractions; permutations and combinations; probability; logarithms; exponential and logarithmic series; computation of logarithms; the theory of equations.
The text-book is Wells's College Algebra. *Five hours a week for eighteen weeks.* Fall term. PROF. HART; PROF. FERNALD; MR. CRATHORNE.

Ms 4. PLANE TRIGONOMETRY.—The text-book is Phillips and Strongs Trigonometry. *Five hours a week for ten weeks.* Spring term. PROF. HART; PROF. FERNALD; MR. CRATHORNE.

Ms 19. SPHERICAL TRIGONOMETRY.—A continuation of course 4, with additional problems and applications to spherical trigonometry.

The text-book is Crockett's Plane and Spherical Trigonometry. *Five hours a week for eight weeks.* Spring term. PROF. HART; MR. CRATHORNE.

Ms 5. ANALYTIC GEOMETRY.—A brief study of the point, right line, and conic sections.

The text-book is Wentworth's Analytic Geometry. *Five hours a fortnight for eighteen weeks.* Spring term. MR. CRATHORNE.

Ms 6. ANALYTIC GEOMETRY.—A more extended course. The straight line and conic sections, including polar and oblique coördinates; the equation of the second degree; introduction to solid analytic geometry.

The text-book is Nichols's Analytic Geometry. *Five hours a week for eighteen weeks.* Fall term. PROF. FERNALD.

Ms 7. CALCULUS.—Differentiation; integration by fundamental formulas; integration regarded as a summation; definite integrals.

The text-book is Osborne's Differential and Integral Calculus. *Five hours a week for eighteen weeks.* Spring term. PROF. HART; PROF. FERNALD.

Ms 8. CALCULUS.—Applications of differential calculus; applications of integral calculus.

The text-book is Osborne's Differential and Integral Calculus. *Five hours a fortnight for eighteen weeks.* Fall term. PROF. HART.

Ms 9. DESCRIPTIVE ASTRONOMY.—The text-book is supplemented by informal lectures, and illustrated by lantern slides, the Trouvelot drawings of celestial objects, and observations with an equatorial telescope.

The text-book is Young's Elements of Astronomy. *Five hours a fortnight for eighteen weeks.* Spring term. PROF. HART.

Ms 10. PRACTICAL ASTRONOMY.—Problems in the conversion of time, the determination of terrestrial latitudes and longitudes, and the establishment of meridian lines. The instruments used are the sextant, and artificial horizon, a portable chronometer, theodolite, and vertical circle. *Five hours a fortnight for eighteen weeks.* Spring term. PROF. HART.

Ms 11. ADVANCED ALGEBRA.—Determinants and the solution of higher equations. *Five hours a fortnight for eighteen weeks.* Spring term. PROF. HART.

Ms 12. ADVANCED INTEGRAL CALCULUS.—A course based upon Byerly's Integral Calculus. *Five hours a fortnight for eighteen weeks.* Given in the fall term term of odd years. PROF. HART.

Ms 13. INTEGRAL CALCULUS.—A continuation of course 12. *Five hours a fortnight for eighteen weeks.* Given in the spring term of even years. PROF. HART.

Ms 20. SOLID ANALYTIC GEOMETRY.—Lectures based on C. Smith's Solid Geometry. *Five hours a fortnight for eighteen weeks.* Given in the fall term of even years. PROF. HART.

Ms 15. DIFFERENTIAL EQUATIONS.—The text-book is Murray's Differential Equations. *Five hours a fortnight for eighteen weeks.* Given in the spring term of odd years. PROF. HART.

Ms 16. PRACTICAL ASTRONOMY.—The theory and use of the sextant, universal instrument, transit, and zenith telescope. Given in 1897-8 and alternate years. *Five hours a fortnight for eighteen weeks.* Given in the fall term of odd years. PROF. HART.

Ms 17. PRACTICAL ASTRONOMY.—A continuation of course 16. Given in 1897-8 and alternate years. *Five hours a week for eighteen weeks.* Given in the spring term of even years. PROF. HART.

PHYSICS.

PROFESSOR STEVENS; MR. DORSEY; MR. RYTHER.

Ps 1. GENERAL PHYSICS.—Lectures on the dynamics of solids, liquids and gases; sound and light; experiments before the class; problems. *Five hours a week for eighteen weeks.* Fall term. PROF. STEVENS.

Ps 2. GENERAL PHYSICS.—A continuation of course 1; heat and electricity. *Five hours a fortnight for eighteen weeks.* Spring term. PROF. STEVENS.

Ps 12. GENERAL PHYSICS.—A course covering the ground of course 1, with more attention to the experimental and historical aspects.

The text-book is Gage's Principles of Physics. *Five hours a fortnight for eighteen weeks.* Fall term. MR. DORSEY.

Ps 13. GENERAL PHYSICS.—A continuation of course 12.

The text-book is Gage's Principles of Physics. *Five hours a fortnight for eighteen weeks.* Spring term. MR. DORSEY.

Ps 3. ELEMENTARY PHYSICS.—A non-mathematical course, covering the ground of course 1. The recitations are supplemented by lectures and experimental demonstrations.

The text-book is Dolbear's Natural Philosophy. *Five hours a fortnight for eighteen weeks.* Fall term. MR. DORSEY.

Ps 4. ELEMENTARY PHYSICS.—A continuation of course 3.

The text-book is Dolbear's Natural Philosophy. *Two hours a week for eighteen weeks.* Spring term. MR. DORSEY.

Ps 5. LABORATORY PHYSICS.—The subjects usually included in an under-graduate course. Special attention is given to the reduction of observations, and the tabulation of results.

Nichols's Laboratory Manual is made the basis of most of the experiments. †*Five hours a week for eighteen weeks.* Spring term. PROF. STEVENS; MR. DORSEY; MR. RYTHER.

Ps 6. LABORATORY PHYSICS.—A brief course for students in the short course in pharmacy. *Two hours a fortnight for eighteen weeks.* Spring term. MR. RYTHER.

Ps 7. ADVANCED OPTICS.—Lectures in continuation of course 1, based chiefly upon Preston's Light. *Five hours a fortnight for eighteen weeks.* Spring term. PROF. STEVENS.

Ps 8. MATHEMATICAL PHYSICS.—One course in mathematical physics is offered each year. For this year the text-book is Everett's Vibratory Motion and Sound. *Five hours a fortnight for eighteen weeks.* Fall term. PROF. STEVENS.

Ps 9. LABORATORY PHYSICS.—General laboratory work in continuation of course 5. †*Five hours a week for eighteen weeks.* Fall term. PROF. STEVENS; MR. RYTHER.

Ps 10. LABORATORY PHYSICS.—Advanced laboratory work in optics, in continuation of course 9. †*Five hours a week for eighteen weeks.* Spring term. PROF. STEVENS; MR. RYTHER.

Ps 11. ELECTRICAL MEASUREMENTS AND TESTING.—The measurement of resistance, potential, and current; the testing of galvanometers, etc. The charge for this course is $2.50. †*Four hours a week for eighteen weeks.* Fall term. MR. DORSEY.

DRAWING.

MR. BOARDMAN.

Dr 1. DRAWING.—Free-hand work in perspective and model drawing; lettering.

†*Five hours a week for eighteen weeks.* Fall term.

Dr 2. MATHEMATICAL DRAWING.—The plotting of functions, and the solution of equations by the graphic method.

†*Three hours a week for thirteen weeks.* Fall and spring terms.

Dr 3. MECHANICAL DRAWING.—Instruction and practice in the care and use of drawing instruments, in the drawing of geometrical problems, and in the use of water colors. The text-book is Faunce's Mechanical Drawing.

†*Five hours a week for eighteen weeks.* Spring term.

Dr 4. MECHANICAL DRAWING.—Problems in shades and shadows, and dimension drawing.

The text-book is Faunce's Mechanical Drawing. †*Seven hours a week for eighteen weeks.* Fall term.

Dr 5. GENERAL DRAWING.—Isometric and cabinet projections, perspective, and the preparation of working drawings. Lectures and exercises in the drawing room.

†*Ten hours a week for five weeks.* Spring term.

Dr 6. DESCRIPTIVE GEOMETRY.—Elementary problems; tangents, intersection of planes, cyclinders, cones, spheres, etc. The time is divided equally between the recitation room and drawing room.

The text-book is Church's Descriptive Geometry. *Five hours a fortnight for eighteen weeks.* Fall term.

Dr 7. DESCRIPTIVE GEOMETRY.—A continuation of course 6. *Three hours a fortnight for eighteen weeks.* Spring term.

Dr 8. STEREOTOMY.—The application of the methods of descriptive geometry to the preparation of drawings for retaining walls, bridge abutments, piers, arches, etc.

†*Ten hours a week for five weeks.* Spring term.

CHEMISTRY.

PROFESSOR AUBERT; DR. RYLAND; MR. ROGERS.

Ch 1. GENERAL CHEMISTRY.—Recitations and lectures on the general principles of chemistry, illustrated by charts, experiments, etc.

The text-book is Newth's Text-Book of Inorganic Chemistry, *Five hours a fortnight for eighteen weeks.* Fall term. DR. RYLAND.

Ch 2. GENERAL CHEMISTRY.—A continuation of course 1.

The text-book is Newth's Text-Book of Inorganic Chemistry. *Five hours a week for eighteen weeks.* Spring term. DR. RYLAND.

Ch 3. LABORATORY CHEMISTRY.—The preparation of the more common elements and inorganic compounds; a study of their properties; elementary analysis.

The text-book is Remsen and Randall's Chemical Experiments. †*Two hours a week for eighteen weeks.* Fall term. MR. ROGERS.

Ch 4. LABORATORY CHEMISTRY.—A continuation of course 3. †*Two hours a week for eighteen weeks.* Spring term. MR. ROGERS.

Ch 5. CHEMICAL THEORY.—The text-book is Joannis, Cours Elementaire de Chimie, Vol. 1. *Five hours a fortnight for eighteen weeks.* Fall term. PROF. AUBERT.

Ch 6. INORGANIC CHEMISTRY.—The non-metallic elements.

The text-book is Joannis, Cours Elementaire de Chimie, vols. 1 and 2. *Five hours a fortnight for eighteen weeks.* Spring term. PROF. AUBERT.

Ch 7. INORGANIC CHEMISTRY.—The metals.

The text-book is Joannis, Cours Elementaire de Chimie, Vol. 2. *Five hours a fortnight for eighteen weeks.* Fall term. PROF. AUBERT.

Ch 8. ORGANIC CHEMISTRY.—Lectures and recitations, illustrated by specimens; a laboratory course in the preparation of organic compounds.

The text-book is Joannis, Cours Elementaire de Chimie, Vol. 3. *Five hours a fortnight for nine weeks.* Spring term. PROF. AUBERT.

Ch 9. ORGANIC CHEMISTRY.—A short course setting forth the properties of organic compounds, the general methods of preparing them, and special methods for preparing some of the most important.

The text-book is Turpin's Organic Chemistry. *Five hours a fortnight for eighteen weeks.* Fall term. DR. RYLAND.

Ch 10. CHEMICAL READING.—Study and translation of foreign works. *One hour a week for eighteen weeks.* Fall term. PROF. AUBERT.

Ch 11. LABORATORY PROCESSES.—Laboratory methods and processes used in the arts. *Five hours a fortnight for eighteen weeks.* Spring term. PROF. AUBERT.

Ch 12. ORGANIC CHEMICALS.—The more common forms of apparatus and processes used in the preparation and synthesis of organic substances.

Cohen's Practical Organic Chemistry is used for reference. †*Five hours a week for eighteen weeks.* Fall term. PROF. AUBERT.

Ch 13. MINERALOGY.—Determinative mineralogy and blow-pipe analysis.

The text-book is Moses and Parson's Elements of Mineralogy. †*Two hours a week for eighteen weeks.* Spring term. DR. RYLAND.

Ch 14. QUALITATIVE ANALYSIS.—The determination and separation of acids and bases in simple and complex substances, and the writing of the reactions.

The text-book is Noyes's Qualitative Analysis. *The time varies; it is stated in the tables.* DR. RYLAND.

Ch. 15. QUALITATIVE ANALYSIS.—The text-book is Noyes's Qualitative Analysis. *The time varies; it is stated in the tables.* DR. RYLAND.

Ch 16. QUANTITATIVE ANALYSIS.—Gravimetric determinations.

The text-book is Appleton's Quantitative Analysis. *The time varies; it is stated in the tables.* PROF. AUBERT.

Ch 17. QUANTITATIVE ANALYSIS.—A continuation of course 16.

The text-book is Clowes and Coleman's Quantitative Analysis. *The time varies; it is stated in the tables.* PROF. AUBERT.

Ch 18. QUANTITATIVE ANALYSIS.—Analysis of complex aloys, minerals, etc.

The text-book is Clowes and Coleman's Quantitative Analysis. †*Ten hours a week for eighteen weeks.* PROF. AUBERT.

Ch 19. VOLUMETRIC ANALYSIS AND ASSAYING.—Acidimetry, alkalimetry, oxydimetry; gold and silver assaying.

The text-book is Clowes and Coleman's Quantitative Analysis. *The time varies; it is stated in the tables.* PROF. AUBERT.

Ch 20. AGRICULTURAL ANALYSIS.—The analysis of fodders, fertilizers, milk, and other agricultural products. The methods are those recommended by the Association of Official Agricultural Chemists. *The time varies; it is stated in the tables.* PROF. AUBERT.

Ch 21. TOXICOLOGY AND BIOLOGICAL ANALYSIS.—The determination of the commoner poisons; the analysis of urine and other animal secretions and products, normal and pathological.

The text-book is Witthaus's Urinalysis. *The time varies, it is stated in the tables.* PROF. AUBERT.

Ch 22. THESIS WORK.—The thesis must embody the results of original work in analysis, or research. †*Twenty-two hours a week for eighteen weeks.* Spring term. PROF. AUBERT.

Ch 23. ORGANIC CHEMISTRY.—A continuation of course 8. *Five hours a fortnight for eighteen weeks.* PROF. AUBERT.

Ch 24. TECHNICAL CHEMISTRY.—General processes of technical chemistry, and selected subjects including the principal manufactured products of special interest. *Five hours a fortnight for eighteen weeks.* Spring term. PROF. AUBERT.

NATURAL HISTORY.

PROFESSOR HARVEY; MR. MERRILL.

Nh 1. CRYPTOGAMIC BOTANY.—A detailed study of about thirty type forms. Special attention is given to useful and injurious fungi, to fungicides and spraying apparatus. Students collect specimens and prepare an herbarium.

The text-book is Bessey's Botany. *Five hours a fortnight for eighteen weeks.* Fall term. PROF. HARVEY.

Nh 2. LABORATORY BOTANY.—The use of the microscope, micrometers, camera lucida and microtome; the preparation of slides; the analysis, description, and classification of cryptogams, and their preparation for the herbarium. †*Two hours a week for sixteen weeks.* Fall term. PROF. HARVEY; MR. MERRILL.

Nh 3. ADVANCED PHYSIOLOGY.—Lectures on the anatomy, physiology, hygiene and pathology of the human body. *Five hours a fortnight for eighteen weeks.* Spring term. PROF. HARVEY.

Nh 4. LABORATORY PHYSIOLOGY.—Examination of skeleton, manikin, charts, models, microscopic slides, and the dissection of lower animals. †*Two hours a week for eighteen weeks.* Spring term. PROF. HARVEY.

Nh 5. INVERTEBRATE ZOOLOGY.—The detailed study of type forms of all the branches. The student uses the compound microscope, makes dissections and careful drawings, and classifies the forms studied. *Five hours a fortnight for eighteen weeks.* Fall term. PROF. HARVEY.

Nh 6. LABORATORY ZOOLOGY.—Supplementary to course 5. †*Five hours a week for eighteen weeks.* Fall term. MR. MERRILL.

Nh 7. HELMINTHOLOGY.—A course in zoology with especial attention to animal parasites. †*Four hours a week for eighteen weeks.* Spring term. PROF. HARVEY.

Nh 8. COMPARATIVE VERTEBRATE ZOOLOGY.—A comparative study of type forms of vertebrate animals. Special attention is given to the zoology of the domestic animals.

The text-book is Packard's Zoology. *Seven hours a fortnight for eighteen weeks.* Fall term. PROF. HARVEY; MR. MERRILL.

Nh 9. LABORATORY ZOOLOGY.—Museum work; study of charts, and models; dissections of a fish, frog, turtle, bird, and rat; methods of preparing specimens for collections. †*Four hours a week for eighteen weeks.* Spring term. PROF. HARVEY.

Nh 10. ENTOMOLOGY.—The anatomy, physiology, classification, and economic importance of insects.

The text-books are Smith's Economic Entomology, and Comstock's Entomology. *Five hours a fortnight for eighteen weeks.* Spring term. PROF. HARVEY.

Nh 11. GEOLOGY.—Special attention is given to the origin and formation of soils, to the method of conducting a geological survey, and to the geology of Maine.

The text-book is Scott's Introduction to Geology. *Five hours a fortnight for eighteen weeks.* Fall term. PROF. HARVEY.

Nh 12. HUMAN ANATOMY.—A detailed study of the human skeleton. Examination of a manikin showing details of the respiratory, digestive, circulatory, reproductive, depurgatory, nervous, and muscular systems, and of the organs of the special senses.

The text-book is Gray's Anatomy. *Five hours a fortnight for eighteen weeks.* Spring term. PROF. HARVEY.

Nh 13. BOTANY.—An exhaustive study of some phenogamic order together with a prepared collection of the Maine species. †*Five hours a week for eighteen weeks.* Fall term. PROF. HARVEY.

Nh 14. BOTANY.—An exhaustive study of some lesser group of cryptogams, or the life history of some species. †*Five hours a week for eighteen weeks.* Spring term. PROF. HARVEY.

Nh 15. ZOOLOGY.—History and principles of Zoology.

† *Five hours a week for eighteen weeks.* Fall term. PROF. HARVEY.

Nh 16. ZOOLOGY.—A detailed study of some small group of animals, or the history of some species. †*Five hours a week for eighteen weeks.* Spring term. PROF. HARVEY.

AGRICULTURE.

PROFESSOR WOODS; PROFESSOR GOWELL; PROFESSOR MERRILL; PROFESSOR RUSSELL.

Ag 1. BIOLOGICAL CHEMISTRY.—Lectures and recitations on the chemical changes in nature important to agriculture, the composition of air, soils, natural waters, and plants, the sources and assimilation of plant food, and the chemical processes and methods of investigation by which these subjects are studied.

The text-book is Johnson's How Crops Grow. *Five hours a fortnight for eighteen weeks.* Fall term. PROF. MERRILL.

Ag 2. BIOLOGICAL CHEMISTRY.—A continuation of course 1. Lectures and recitations in physiological chemistry, including the composition of the animal body, the composition of food materials, the chemical changes involved in the digestion and assimilation of food; also the chemistry of milk and dairy products, and the chemical processes and methods of investigation by which these subjects are studied.

The text-book is Arthus's Chimie Physiologique. *Five hours a week for eighteen weeks.* Spring term. PROF. MERRILL.

Ag 3. AGRICULTURAL CHEMISTRY.—Lectures on the origin, composition, preparation and use of commercial fertilizers, the supply, composition, care and use of farm manures, and the general considerations which pertain to the maintenance of soil fertility. *Five hours a fortnight for nine weeks.* Fall term. PROF. WOODS.

Ag 4. AGRICULTURAL PHYSICS.—Lectures on the relation of soils to heat and moisture, the mechanical condition of soils best suited to plant growth, and the objects to be gained by cultivation. *Five hours a fortnight for nine weeks.* Spring term. PROF. WOODS.

Ag 5. AGRICULTURAL ENGINEERING.—Lectures on farm drainage, irrigation, water supply for stock and household, farm implements and machinery, handling crops, and construction of farm buildings, sites, etc. *Five hours a fortnight for nine weeks.* Spring term. PROF. GOWELL.

Ag 6. STOCK FEEDING.—Lectures on the production of cattle foods and their composition, on formulating rations for milk and meat production, and application of the lectures to the animals in the herd.

The text-book is Henry's Feeds and Feeding. *Five hours a week for seven weeks.* Spring term. PROF. GOWELL.

Ag 7. DAIRYING.—Lectures upon the formation and composition of milk; sources of infection; bacteria and their relation to dairying; ferments and their effects.

The text-books are Grotenfelt and Woll's Principles of Modern Dairy Practice, and Stewart's Dairyman's Manual. *Five hours a fortnight for nine weeks.* Spring term. PROF. GOWELL.

Ag 8. STOCK BREEDING.—Lectures upon animal reproduction, the principles of breeding, and the means of improvement and development. Practice is given in judging animals by a scale of points.

The text-books are Miles's Cattle Breeding, and Saunder's Horse Breeding. *Five hours a week for seven weeks.* Spring term. PROF. GOWELL.

Ag 9. POULTRY INDUSTRY.—Lectures, with practice in handling poultry, and judging by a scale of points; in breeding; in hatching by natural and artificial processes; and in the use of machinery. Caponizing, and the construction and arrangement of buildings receive careful attention. *Five hours a week for four weeks.* Spring term. PROF. GOWELL.

Ag 10. DAIRY PRACTICE.—The treatment and handling of milk and cream; milk testing for fat and other solids; aëration, pasteurization and sterilization of milk and cream; the application of acid tests and ferments to butter and cheese making; operating and caring for the boiler, engine, gravity creamers, centrifugal separators, churns, workers, vats, presses, and the making, curing and judging of butter and cheese, together with the business management of factories and creameries. Each student must provide himself with two suits of clothes made of white drilling. †*Seven hours a week for twelve weeks.* Spring term. PROF. GOWELL.

Ag 11. VETERINARY SCIENCE.—Lectures, demonstrations and clinics, illustrated by models, natural preparations, and living animals. *Five hours a fortnight for eighteen weeks.* Spring term. PROF. RUSSELL.

Ag 12. DISSECTING.—A brief course intended to make the student familiar with the location and appearance of the more important organs of the animal body. †*Seven hours a week for six weeks.* Spring term. PROF. RUSSELL.

Ag 13. BACTERIOLOGY.—Methods of cultivating bacteria, the morphological and biological character of bacteria and fungi, particularly of those relating to disease, and of those of importance from an economic standpoint, the methods of making biological examinations of air, water, etc. During the time given to laboratory work, exercises in this course will be held every day, and the number of exercises will be correspondingly decreased. The instructor will arrange for an exchange of time with other laboratory courses. †*Five hours a week for nine weeks.* Spring term. PROF. RUSSELL.

Ag 14. ANIMAL HISTOLOGY.—Dissecting and the preparation of the most important tissues and organs, accompanied with lectures and recitations. †*Ten hours a week for nine weeks.* Spring term. PROF. RUSSELL.

Ag 15. LABORATORY BACTERIOLOGY.—An advanced course. †*Ten hours a week for nine weeks.* Spring term. PROF. RUSSELL.

HORTICULTURE.

PROFESSOR MUNSON; MR. MERRILL.

Ht 1. GENERAL BOTANY.—The structure and functions of the organs of plants; the development and relationship of the leading groups. Lectures, supplemented by laboratory work in the greenhouses and the field.

Gray's School and Field Book of Botany is used for reference. †*Five hours a week for eighteen weeks.* Spring term. PROF. MUNSON; MR. MERRILL.

Ht 2. POMOLOGY.—The economic importance, methods of culture, and marketing of fruits; the principles and practice of spraying plants. Lectures. *Five hours a fortnight for nine weeks.* Spring term. PROF. MUNSON.

Ht 3. OLERICULTURE, OR VEGETABLE GARDENING.—The history and uses of leading garden vegetables, with directions for their culture in the field and under glass. Lectures and practical demonstrations. *Five hours a fortnight for nine weeks.* Spring term. PROF. MUNSON.

Ht 4. PLANT VARIATION.—A discussion of the underlying principles of horticulture. The origin and distribution of cultivated plants; their variation as affected by soil, climate, and cultivation; a systematic study of plant breeding, including the methods and effects of crossing, the principles of selection, and the influence of heredity. Students in this course must have taken course 1. *Five hours a fortnight for nine weeks.* Fall term. PROF. MUNSON.

Ht 5. LANDSCAPE GARDENING.—The principles of landscape art and their application. *Five hours a fortnight for nine weeks.* Fall term. PROF. MUNSON.

Ht 6. LABORATORY HORTICULTURE.—The propagation and culture of plants, the construction and management of forcing structures, and the making of plans for rural improvements. †*Four hours a week for eighteen weeks.* Spring term. PROF. MUNSON.

Ht 7. LABORATORY HORTICULTURE.—A continuation of course 6. †*Five hours a week for eighteen weeks.* Fall term. PROF. MUNSON.

Ht 8. HISTOLOGY OF PLANTS.—A description and comparison of tissues, with investigation of the minute anatomy of vegetable organs, and studies in the phenomena of cell development and fertilization.

Goodale's Physiological Botany is used for reference. †*Five hours a week for nine weeks.* Spring term. PROF. MUNSON.

Ht 9. PLANT BREEDING.—A systematic study of the amelioration of plants by cultivation. Lectures and investigations concerning: (1) The fact and philosophy of variation; the causes of individual differences, the choice and fixation of varieties. (2) The philosophy of the crossing of plants; the limits of crossing; the function of a cross. (3) How domestic varieties originate; the influence of heredity; the principles of selection.

Bailey's Plant Breeding, Darwin's Animals and Plants under Domestication, and Darwin's Cross and Self Fertilization in the Vegetable Kingdom, are used for reference. *Five hours a fortnight for eighteen weeks.* Fall term. PROF. MUNSON.

Ht 10. PLANT BREEDING.—A continuation of course 9.

Five hours a fortnight for eighteen weeks. Spring term. PROF. MUNSON.

PHARMACY.

ASSISTANT PROFESSOR JACKMAN.

Pm 1. PHYSICAL AND OFFICIAL PHARMACY.—The history of pharmacopœias, dispensatories, etc.; weights and measures, specific gravity, the pharmaceutical uses of heat, distillation, solution, filtration, etc.; official preparations; pharmaceutical problems, involving percentage solutions, parts by weight, and measure, chemical principles and equations, actual pharmacy operations.

The text-book is Remington's Practice of Pharmacy. *Five hours a week for eighteen weeks.* Fall term.

Pm 2. INORGANIC, ORGANIC, AND EXTEMPORANEOUS PHARMACY.—The elements, the official salts, and inorganic acids, their preparation and classification. Organic compounds, their classification, official preparations; official drugs of the Materia Medica classified according to their proximate principles, the preparations of these drugs, etc., animal preparations. Extemporaneous pharmacy; the principles of dispensing, store management, etc.

The text-book is Remington's Practice of Pharmacy. *Five hours a week for eighteen weeks.* Fall term.

Pm 3. LABORATORY PHARMACY.—Official preparations and tests. The operations of manufacturing pharmacy, including the preparation of granular and scale salts, infusions, syrups, tinctures, etc. Official tests of chemicals, drugs, and preparations, for identity, strength, adulteration, etc.

The text-book is Remington's Practice of Pharmacy, or the U. S. Pharmacopœia. †*Ten hours a week for eighteen weeks.* Fall term.

Pm 4. PHARMACOPŒIA AND PRESCRIPTIONS.—A complete review of the pharmacopœia, with special reference to the chemical and pharmaceutical principles involved in processes and preparations; critical examination of prescriptions from actual files, with reference to inelegance, physiological, pharmaceutical, and chemical incompatibility; doses; methods and order of compounding, etc.

The text-book is Remington's Practice of Pharmacy. *Three hours a week for eighteen weeks.* Spring term.

Pm 5. INORGANIC PHARMACOGNOSY.—Official and common names; practical exercises in the identification of specimens.

The text-book is the Era Key to the U. S. Pharmacopœia. *Five hours a fortnight for eighteen weeks.* Fall term.

Pm 6. ORGANIC PHARMACOGNOSY.—Official and common names, practical exercises.

The text-book is the Era Key to the U. S. Pharmacopœia. *Four hours a week for eighteen weeks.* Spring term.

Pm 7. MATERIA MEDICA.—Chemicals and drugs, their nature, uses, classification, therapeutic action, and doses; poisons, and antidotes.

The text-book is Potter's Materia Medica. *Five hours a fortnight for eighteen weeks.* Fall term.

Pm 8. THESIS WORK.—The thesis must embody the results of original work in analysis, or research. †*Ten hours a week for eighteen weeks.* Spring term.

CIVIL ENGINEERING.

PROFESSOR GROVER; MR. WESTON; MR. HAMLIN.

Ce 1. PLANE SURVEYING.—Recitations on the general principles of land surveying, the laying out of land, the dividing of land, surveying of public lands, direct leveling, and the variation of the magnetic needle.

The text-book is Raymond's Surveying. *Five hours a fortnight for eighteen weeks.* Spring term. MR. WESTON.

Ce 2. FIELD WORK IN SURVEYING.—The uses of the chain, compass, transit, and level. Instruments are adjusted, original surveys made, and old lines retraced. Deeds are examined, and descriptions of property traced back in the Penobscot County registry of deeds. Plats are prepared of the surveys made in the field. †*Four hours a week for eighteen weeks.* Spring term. MR. WESTON; MR. HAMLIN.

Ce 3. RAILROAD ENGINEERING.—Lectures and recitations on the theory of railroad curves, switches, turnouts and slope stakes, the calculation of earthworks, and the resistance to trains offered by grades and curves, and the theory of economic location.

The text-book is Nagle's Field Engineering. *Five hours a fortnight for eighteen weeks.* Fall term. MR. WESTON.

Ce 4. RAILROAD WORK.—The location and detailed survey of a railroad several miles long. The curves are laid out, levels taken, and all the necessary measurements made to enable the student to compute the excavations and embankments and estimate the cost of construction. †*Five hours a week for eighteen weeks.* Fall term. MR. WESTON; MR. HAMLIN.

Ce 5. HIGHWAY ENGINEERING.—The location, construction, and improvement of country roads under different conditions of soil, climate, and traffic. *One hour a week for eighteen weeks.* Fall term. MR. WESTON.

Ce 6. MECHANICS.—The principles of statics; the algebraic and graphic solution of statical problems, including simple trusses; exercises in finding the moment of inertia, center of gravity, the shearing force and bending moment.

The text-book is Church's Mechanics of Engineering. *Five hours a week for eighteen weeks.* Fall term. MR. WESTON.

Ce 7. MECHANICS.—A continuation of course 6, including the principles of dynamics. *Five hours a week for eighteen weeks.* Spring term. MR. WESTON.

Ce 8. SANITARY ENGINEERING.—Lectures on land drainage, drainage of houses and towns, plumbing of houses, sewerage of towns and cities, and the ventilation of houses.

The text-book is Merriman's Sanitary Engineering. *Five hours a fortnight for eighteen weeks.* Fall term. PROF. GROVER.

Ce 9. HIGHER SURVEYING.—The plane table, the solar compass as applied to the survey of public lands, stadia measurements, topographical surveying, the elements of geodesy, the measurement of base lines, calculation of a system of triangulation. †*Ten hours a week for eight weeks.* Spring term. PROF. GROVER; MR. HAMLIN.

Ce 10. HYDRAULICS.—The weight, pressure, and motion of water; the flow of water through orifices and pipes; weir gauging; the flow of water in open channels, mains, and distribution pipes; distribution systems; the construction of water works for towns and cities.

The text-book is Church's Mechanics of Engineering. *Five hours a fortnight for eighteen weeks.* Fall term. PROF. GROVER.

Ce 11. HYDRAULICS FIELD WORK.—The measurement of the flow of rivers is illustrated by the application of the current meter and the various forms of floats to the Penobscot River or some of its large branches. The department is well supplied with apparatus. †*Seven hours a week for nine weeks.* Fall term. PROF. GROVER.

Ce 12. STRUCTURES.—A detailed study of the properties of materials used in engineering structures; their resistance to bending, breaking, extension and compression, under the various conditions of practice; the theory of stresses in framed structures; the usual systems of loading; and the principles of designing.

Merriman's Mechanics of Materials, Johnson's Framed Structures, and Merriman's Roofs and Bridges, Part III, are used for reference. *Five hours a week for eighteen weeks.* Fall term. PROF. HAMLIN.

Ce 13. STRUCTURES.—A continuation of course 12; including the study of problems in connection with masonry structures; natural and artificial foundations; the stability of dams and retaining walls; the designing of bridge piers and abutments; the theory of the masonry arch.

The text-book is Baker's Masonry Construction. *Five hours a week for eighteen weeks.* Spring term. PROF. GROVER.

Ce 14. DESIGNING.—Designs for several of the common types of wooden and steel structures, and preparation of drawings for the shop. †*Seven hours a week for nine weeks.* Fall term. PROF. GROVER; MR. HAMLIN.

Ce 15. DESIGNING AND THESIS WORK.—A continuation of course 14 and the preparation of a thesis. †*Twelve hours a week for eighteen weeks.* Spring term. PROF. GROVER; MR. HAMLIN.

Ce 16. HYDRAULIC ENGINEERING.—Rainfall, evaporation, and stream-flow. The collection, purification, and distribution of water for city supplies. Water meters, water wheels and motors. The development and utilization of water power. *Five hours a fortnight for eighteen weeks.* Fall term. PROF. GROVER.

Ce 17. HYDRAULIC ENGINEERING.—A continuation of course 16. *Five hours a fortnight for eighteen weeks.* Spring term. PROF. GROVER.

MECHANICAL ENGINEERING.

PROFESSOR FLINT; MR. WALKER; MR. STEWARD.

Me 1. CARPENTRY.—The care and sharpening of tools, the squaring of stock, and taking work out of wind; practice in making different joints in soft and hard wood; wood turning. The charge for material is $5.00 a term. †*Seven hours a week for eighteen weeks.* Fall term. MR. WALKER.

Me 2. FORGE WORK.—Drawing and upsetting; the welding of straight pieces of various sizes, the making of rings, and chain links, the welding of eye bolts and bolt heads, etc.; the making of a steel punch, cold chisels, and a set of lathe tools, for use in the machine shop; foundry work. The student must furnish a forging hammer, calipers, and scale, at a cost of $2.50. The charge for materials is $5.00 a term. †*Five hours a week for eighteen weeks.* Spring term. MR. WALKER.

Me 3. KINEMATICS.—Methods of transmitting and transforming motion, illustrated by the solution of practical problems; the construction of cams, lobed wheels, and gear teeth, cycloidal, and involute gears.

The text-book is Jones's Kinematics. †*Five hours a week for eighteen weeks.* Spring term. MR. WALKER.

Me 4. MACHINE WORK.—Exercises in filing and chipping; lathe work, drilling, boring and threading in the lathe; making cut gears, machinist taps, and finished bolts; exercises on the planer and shaper. Each student provides himself with center gauge, steel scale, and files, at a cost of $2.50. The charge for materials is $5.00 a term. Students will be given credit for work in commercial shops on presentation of satisfactory proof. *The time devoted to machine work varies.* MR. STEWARD.

Me 5. ANALYTIC MECHANICS.—Composition and resolution of forces, center of gravity, friction, virtual velocities, elementary machines, work, energy, moment of inertia.

The text-book is Wood's Analytic Mechanics. *Five hours a week for eighteen weeks.* Fall term. MR. WALKER.

Me 6. ANALYTIC MECHANICS.—A continuation of course 5.

Five hours a week for eight weeks. Spring term. MR. WALKER.

Me 7. APPLIED MECHANICS.—Stress, its resultants and centers; moments, moments of inertia; strength and deflection of beams; analysis of framed structures for internal stresses under uniform and concentrated loads; graphic statics.

The text-book is Rankine's Applied Mechanics. *Five hours a week for ten weeks.* Spring term. MR. WALKER.

Me 8. APPLIED MECHANICS.—A continuation of course 7. Lectures. *Five hours a fortnight for eighteen weeks.* Fall term. MR. WALKER.

Me 9. MACHINE DESIGN.—Rules and formulas are applied to machines of standard manufacture for comparison. The student designs a speed lathe, and makes the working designs. *Seven hours a fortnight for eighteen weeks.* Spring term. PROF. FLINT.

Me 10. HYDRO-MECHANICS.—The behavior of liquids in motion and under pressure, flowing through pipes and in open channels, with problems.

The text-book is Bowser's Hydro-Mechanics. *Five hours a fortnight for eighteen weeks.* Fall term. PROF. FLINT.

Me 11. HEAT AND STEAM.—The characteristics of steam and its behavior in pipes, boilers, and particularly in the cylinders of engines; problems involving the properties of saturated steam; the calculation of steam pipes and safety valves; the design of a boiler suited to run an engine under given conditions, and the detail drawings.

The text-book is Benjamin's Heat and Steam. *Five hours a fortnight for eighteen weeks.* Fall term. PROF. FLINT.

Me 12. STEAM BOILER DESIGN.—Drawings of the more important parts of the design worked out in course 11. †*Twelve hours a week for eighteen weeks.* Fall term. PROF. FLINT.

Me 13. TESTING.—Tests of steam gauges, boilers, etc.; tests of different metals under tension and compression. *Five hours a fortnight for eighteen weeks.* Spring term. PROF. FLINT.

Me 14. STEAM ENGINE.—The steam engine as a source of power; the design, proportions and working of engine cylinders, steam pipes, and ports; engine valves, eccentrics, adjustable eccentrics; the locomotive link motion with its connections; numerous problems on the slide valve and link motion; the calculation of details of an engine.

The text-book is Whitham's Steam Engine Design. *Seven hours a fortnight for eighteen weeks.* Spring term. PROF. FLINT.

Me 15. STEAM ENGINE DESIGN.—Drawings of the parts worked out in course 14; the setting of valves by means of the indicator; the calculation of horse power; the consumption of water and coal, etc. †*Fifteen hours a week for nine weeks.* Spring term. PROF. FLINT.

Me 16. THESIS WORK.—The design of a piece of machinery. †*Fifteen hours a week for nine weeks.* Spring term. PROF. FLINT.

Me 17. DESIGN.—A course supplementary to Me 9, consisting of an original design of some piece of scientific apparatus; or, an original investigation of some engineering problem to be fully written up and presented to the department.

†*Five hours a week for eighteen weeks.* Fall term. PROF. FLINT.

Me 18. DESIGN.—A continuation of course 17.

†*Five hours a week for eighteen weeks.* Spring term. PROF. FLINT.

ELECTRICAL ENGINEERING.

PROFESSOR STEVENS; MR. DICKINSON; MR. MANSON.

Ee 1. ELECTRICITY AND MAGNETISM.—This course continues the subject of electricity and magnetism begun in physics. Lectures are given, and laboratory methods and results are discussed with the class.

The text-book is Silvanus Thompson's Electricity and Magnetism. *Two hours a week for eighteen weeks.* Fall term. MR. DICKINSON.

Ee 2. ELECTRICITY AND MAGNETISM.—A continuation of course 1; the dynamo and apparatus connected with its operation.

The text-book is Hawkins and Wallis's The Dynamo. *Three hours a week for eighteen weeks.* Spring term. MR. DICKINSON.

Ee 3. ELECTRICAL MACHINERY.—Lectures on the theory and construction of dynamos, moters, etc. *Five hours a fortnight for eighteen weeks.* Fall term. MR. DICKINSON.

Ee 4. ELECTRICAL ENGINEERING.—The designing, construction, and operating of alternating current machinery and the use of direct and alternating current machinery in lighting, and the transmission of power. *Five hours a week for nine weeks.* Spring term. MR. DICKINSON.

Ee 5. ELECTRICAL DESIGN.—This course is similar to the course in machine design given to students in mechanical engineering. Each student is required to make the computations and complete drawings for a dynamo. †*Seven hours a week for eighteen weeks.* Fall term. MR. DICKINSON.

Ee 6. ELECTRICAL DESIGN.—The problems involved in designing alternating current machinery, in the electrical transmission of power, and in the distribution of electric light. †*Ten hours a week for nine weeks.* Spring term. MR. DICKINSON.

Ee 7. LABORATORY ELECTRICITY.—Tests of electrical instruments; experimental work with dynamos, motors, etc.; tests of efficiency; photometric tests of electric lamps; the practical management of the electric light plant. The charge for this course is $2.50. †*Five hours a week for eighteen weeks.* Fall term. MR. DICKINSON.

Ee 8. THEORETICAL ELECTRICITY.—Lectures on the mathematical theory of electrical instruments. This course will be varied from year to year. *Five hours a fortnight for nine weeks.* Spring term. PROF. STEVENS.

Ee 9. POWER STATIONS.—The selection and arrangement of power house machinery; methods of operation. Lectures. *Five hours a fortnight for eighteen weeks.* Fall term. MR. DICKINSON.

Ee 10. SHOP WORK.—The winding of armatures and magnets, the building up of transformer cores and the winding of transformers and impedance coils, the construction of condensers for alternating current circuits, construction of rheostats and bridges, tangent and ballistic galvanometers, ammeters and other measuring instruments, a standard cell, a secondary battery, the preparation of fuse wire and fuses, the construction of automatic switches and arc lamps. The charges for this course is $5.00. †*Five hours a week for sixteen weeks.* Not offered in 1898-99.

Ee 11. THESIS WORK.—A continuation of course 7. The student devotes a large part of his time to some special investigation selected as the subject for his graduating thesis. The charge for this course is $2.50. †*Fifteen hours a week for nine weeks.* Spring term. MR. DICKINSON.

Ee 10. TELEPHONY.—The theory and construction of the transmitter, receiver, and induction coil; the arrangement of instruments; the theory and practical construction of the line; the use of cables; the central exchange; wiring and details of switchboards, and other station apparatus; systems of construction; protective devices; use of storage cells; simultaneous telegraphy and telephony. *Five hours a fortnight for eighteen weeks.* MR. DICKINSON.

MILITARY SCIENCE AND TACTICS.

MR. WALKER.

Each man student is required to take military drill, unless physically unfit, and to attend recitations in military science.

The drill, course 1, occupies the first ten weeks of the fall term, and the last thirteen weeks of the spring term, one hour a day, and three days in the week, counting as one hour and a half in reckoning the student's total time. The remaining eight weeks in the fall term, and five weeks in the spring term, are given: by the senior class, to recitations in military science, course 4, three recitations a fortnight; by the junior class, to recitations in military science, course 3, three recitations a fortnight; by the sophomore class, to recitations in military science, course 2, three hours a fortnight; by the freshmen class, to mathematical drawing.

Mt 1. MILITARY DRILL.—(a.) School of the soldier, school of the company, school of the battalion, and extended order movements. (b.) Target practice at known distances up to six hundred yards. Marksman's buttons are awarded to cadets who qualify. (c.) Military signalling with flag, lantern, heliograph, and field telegraph. (d.) Band practice. †*Three hours a week for the first ten and last thirteen weeks of each year.*

Mt 2. GUARD DUTY.—Recitations on the Manual of Guard Duty. Required of sophomores. *Three hours a fortnight for thirteen weeks.*

Mt 3. DRILL REGULATIONS.—Recitations on U. S. Infantry Drill Regulations. Required of juniors. *Three hours a fortnight for ten weeks.*

Mt 4. ART OF WAR.—Required of seniors.

The text-book is Mercur's Elements of the Art of War. *Three hours a fortnight for thirteen weeks.*

ORGANIZATION OF THE UNIVERSITY.

The University is divided into colleges, each offering several courses upon related subjects. The colleges are interdependent and together form a unit. Instruction in military science is given to all men students except those in the School of Law. The organization is as follows:

COLLEGE OF ARTS AND SCIENCES.

- The Classical Course.
- The Latin-Scientific Course,
- The Scientific Course,
- The Chemical Course,
- The Preparatory Medical Course.

COLLEGE OF AGRICULTURE.

- The Agricultural Course,
- The Special Course in General Agriculture,
- The Special Course in Horticulture,
- The Special Course in Dairying,
- The Agricultural Experiment Station.

COLLEGE OF ENGINEERING.

- The Civil Engineering Course,
- The Mechanical Engineering Course,
- The Electrical Engineering Course.

COLLEGE OF PHARMACY.

- The Pharmacy Course (four years).
- The Short Course in Pharmacy (two years).

SCHOOL OF LAW.

EXPLANATION OF TABLES.—The college year is divided equally into a fall term and a spring term. The year of the School of Law is divided into three terms, the fall, winter, and spring terms, of eleven, ten, and eleven weeks respectively. For details see the calendar.

The quota of studies prescribed for each student is, for a minimum, seventeen hours, and for a maximum, twenty hours of class-room work each week, exclusive of declamations and themes. The tables are made so as to require, with the military work of three hours a fortnight, approximately twenty hours work each week. The numbers in the tables show the average number of hours a week given to each study. The number 2.5 means three hours one week and two the next. In making up the quota of studies, laboratory work and other exercises not requiring preparation count as half time—that is, two hours in the laboratory are counted as equivalent to one hour. The hours devoted to such studies are marked with a dagger (†) in the tables.

The capital letters and numerals preceding a study refer to the explanatory statements to be found on the pages given.

STUDIES OF THE FRESHMAN YEAR, ALL COURSES.*

For Declamations and Themes see page 33; for Military Science see page 67.

FALL TERM—18 WEEKS.	Hours.	SPRING TERM—18 WEEKS.	Hours.
Eh3, Rhetoric, p. 33	2.5	Eh4, Rhetoric, p. 34	2.5
Ml1, French, p. 35 or Ml5, German, p. 35 or Lt1, Latin, p. 37	(see note) 5.0	Ml2, French, p. 35 or Ml6, German, p. 35 or Lt2, Latin, p. 37	(see note) 5.0
Ms18, Algebra, p. 43	5.0	Ms1, Solid Geometry, p. 43, 8 w. Ms4, Trigonometry, p. 44, 10 w.	5.0
Dr1, Drawing, p. 47	†5.0	Dr2, Math Drawing, p. 47, 5 w.	†3.0
Dr2, Mathematical Drawing, p. 47 8 w.	†3.0	Dr3, Mech. Drawing, p. 47 or Ht1, Botany, p. 56	†5.0
Ch1, General Chemistry, p. 48	2.5	Ch2, General Chemistry, p. 48	2.5
Ch3, Laboratory Chemistry, p. 49	†2.0	Ch4, Laboratory Chemistry, p. 49	†2.0

*Except School of Law.

NOTE. Students in the Latin-Scientific Course take Latin, other students take French or German.

THE COLLEGE OF ARTS AND SCIENCES.

The aim of this college is to furnish a liberal education and to afford opportunity for specialization along literary, philosophical, and general scientific lines. The college comprises:

1. The Classical Course.
2. The Latin-Scientific Course.
3. The General Science Course.
4. The Chemical Course.
5. The Preparatory Medical Course.

THE CLASSICAL COURSE.

This course is planned for those who wish general culture. About two-thirds of the work is elective. The required work includes Greek, Latin, mathematics, English, French, German, chemistry, psychology, and political economy. After the freshman year Greek and Latin are elective. The student may arrange his course so as to give special attention to language, chemistry, natural science, mathematics, or physics. A graduate of this course will usually be able to complete the work of one of the technical courses in one year. This course will be opened to students in the fall of 1899.

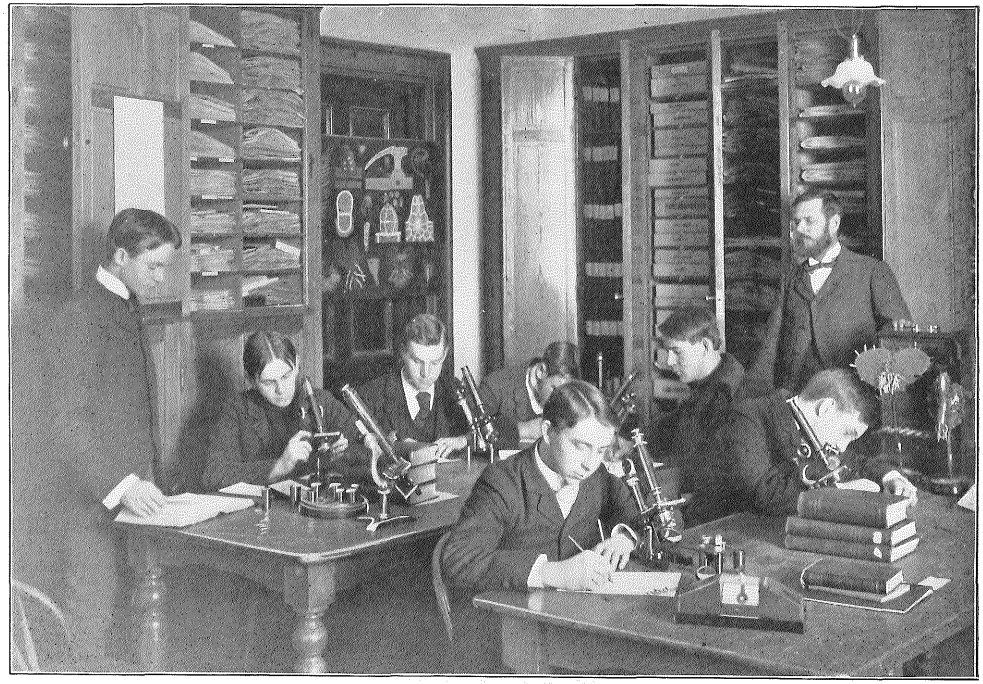
Upon graduation the student receives the degree of Bachelor of Arts. Three years later, on proof of satisfactory advancement, and on presentation of a thesis embodying original work or investigation, he receives the degree of Master of Arts.

The Latin-Scientific Course.

This course is planned for the benefit of those who seek general rather than special training, with a view to preparing themselves for teaching, business, or further study. It differs from the usual classical course by omitting Greek. It requires an extensive study of modern languages, and permits a wide choice of elective work.

The required studies include Latin, English, and modern languages; mathematical and physical science; natural science; and political economy. Latin is not required after the freshman year. By a proper selection of elective studies, the student may give special attention to language, chemistry, natural science, mathematics, or physics.

Upon graduation the student receives the degree of Bachelor of Philosophy; three years later, on proof of satisfactory advancement, and on presentation of a thesis embodying original work or investigation, he receives the degree of Master of Philosophy.



THE BOTANICAL LABORATORY.

STUDIES OF THE LATIN SCIENTIFIC COURSE.

For the Freshman Year see page 70; for Declamations and Themes see page 33; for Military Science see page 67.

SOPHOMORE YEAR.

FALL TERM—18 WEEKS.

Required.	Hours.
M11, French, p. 35 or M15, German, p. 35	5.0
Ps1, General Physics, p. 46 or Ps12, General Physics, p. 46	5.0 2.5

Elective.	
M11, French, p. 35	5.0
M15, German, p. 35	5.0
Lt3, Latin, p. 37	2.5
Ms6, Analytical Geometry, p. 44.	5.0
Others as in Scientific Course.	

SPRING TERM—18 WEEKS.

Required.	Hours.
M12, French, p. 35 or M16, German, p. 35	5.0
Ps2, General Physics, p. 46 or Ps13, General Physics, p. 46	2.5

Elective.	
Ms5 Analytical Geometry, p. 44,	2.5
M12, French, p. 35.	5.0
M16, German, p. 35	5.0
Lt4, Latin, p. 37	2.5
Ps5, Laboratory Physics, p. 46..	†5.0
Dr3, Mechanical Drawing, p. 47..	†5.0
Ht1, Botany, p. 56	†5.0
Others as in Scientific Course.	

JUNIOR YEAR.

Required.	
Eh8, English Literature, p. 34	2.5
M11, French, p. 35 or M15, German, p. 35	5.0
Pl1, Psychology, p. 38	2.5

Elective.	
M13, French, p. 35	2.5
M17, German, p. 36	2.5
Lt5, Latin, p. 38	2.5
Others as in Scientific Course.	

Required.	
Eh9, English Literature, p. 34	2.5
M12, French, p. 35 or M16, German, p. 35	5.0
Pl2, Logic, p. 39	2.5

Elective.	
M14, French, p. 35	2.5
M18, German, p. 36	2.5
Lt6, Latin, p. 38	2.5
Cv3, American History, p. 39	2.0
Cv2, English History, p. 39	2.5
Others as in Scientific Course.	

SENIOR YEAR.

Required.	
Cv9, Constitutional Law and History, p. 40	5.0

Elective.	
Lt5, Latin, p. 38	2.5
Nh11, Geology, p. 53	2.5
Others as in Scientific Course.	

Required.	
Cv8, Political Economy, p. 39	5.0

Elective.	
Lt6, Latin, p. 38	2.5
Others as in Scientific Course.	

THE SCIENTIFIC COURSE.

This course is arranged for those who wish a broad general training, chiefly based upon the study of science, modern languages, and history. It furnishes an admirable preparation for executive positions in banking, commercial, or manufacturing establishments, or for teaching.

For graduates of modern language or English courses in the preparatory schools, it serves the same general purpose as does the classical course for the graduates of the classical preparatory course.

The work of the freshman year, consisting of English, modern languages, history, mathematics, drawing, chemistry, and botany, is required. After the freshman year, a large part of the work —varying from one-third at the beginning to three-fourths at the end—is elective. The required courses include analytical geometry, general physics, geology, French, German, English literature, English history, United States history, constitutional history, psychology, logic, and political economy. The elective studies may be selected to give the student a comprehensive view of the mathematical or natural sciences, or to give a specialized course in modern languages, mathematics, physics, or natural science.

Upon graduation the student receives the degree of Bachelor of Science; three years later, on proof of satisfactory advancement and on presentation of a thesis embodying original work or investigation, he receives the degree of Master of Science.

STUDIES OF THE SCIENTIFIC COURSE.

For the Freshman Year see page 70; for Declamations and Themes see page 33; for Military Science see page 67.

SOPHOMORE YEAR.

FALL TERM—18 WEEKS.			SPRING TERM—18 WEEKS.		
Required.		Hours.	*Required.*		Hours.
M11, M15,	French, p. 35 or German, p. 35	5.0	M12, M16,	French, p. 35, or German, p. 35	5.0
Ps1, Ps12,	General Physics, p. 46 or General Physics, p. 46	5.0 2.5	Ps2, Ps13,	General Physics, p. 46, or General Physics, p. 46,	2.5
			Ps5,	Laboratory Physics, p. 46	†5.0
			Ms5,	Analytical Geometry, p. 44,	2.5
Elective.			*Elective.*		
Ch5,	Chemical Theory, p. 49	2.5	Eh5,	Anglo-Saxon, p. 34	2.5
Ch14,	Qualitive Analysis, p. 50	†5.0	Cv1,	General History, p. 39	2.5
Ms6,	Analytical Geometry, p. 44,	5.0	Ms7,	Calculus, p. 44	5.0
Nh1,	Cryptogamic Botany, p. 51,	2.5	Ms11,	Advanced Algebra, p. 45	2.5
Nh2,	Laboratory Botany, p. 52	†2.0	Ch14,	Qualitative Analysis, p. 50,	†5.0
			Ht8,	Histology of Plants, p. 57, 9 w.	†5.0
			Ag13,	Bacteriology, p. 56, 9 w.	

JUNIOR YEAR.

Required.			*Required.*		
Eh8,	English Literature, p. 34	2.5	Eh9,	English Literature, p. 34	2.5
M13, M17,	French, p. 35 or German, p. 36	2.5	M14, M18,	French, p. 35, or German, p. 36,	2.5
P11,	Psychology, p. 38	2.5	Cv3,	American History, p. 39	2.0
			P12,	Logic, p. 39	2.5
			Cv2,	English History, p. 39	2.5

JUNIOR YEAR—Concluded.

Elective.

M19, Spanish, p. 36 ..... 2.5
M111, Italian, p. 36 ..... 2.5
M113, Old French, p. 36..... 2.5
Cv4, Philosophy of History, p.39, 2.5
Cv11, International Law, p. 40... 2.5
Ms8, Calculus, p. 44 ..... 2.5
Ms12, Advanced Integral Calculus, p. 45..... 2.5
Ms20, Solid Analytical Geometry, p. 45..... 2.5
Ps8, Math. Physics, p. 47..... 2.5
Ps9, Adv. Lab. Physics, p. 47..... †5.0
Ps11, Electrical Measurements and Testing, p. 47..... †4.0
Ch14, Qualitative Analysis, p. 50, †5.0
Nh5, Invertebrate Zoology, p.52, 2.5
Nh6, Laboratory Zoology, p. 52, †5.0
Nh8, Comp. Vert. Zoology, p. 52, 3.5
Me5, Analytic Mechanics, p. 63.. 5.0
Ee1, Electricity and Magnetism, p. 65..... 2.0

Elective.

Eh9, European Literature, p. 34, 2.5
M110, Spanish, p. 36 ..... 2.5
M112, Italian, p. 36 ..... 2.5
M114, Old French, p. 36 ..... 2.5
Ms9, Descrip. Astronomy, p. 44, 2.5
Ms10, Practical Astronomy, p. 45, 2.5
Ms13, Adv. Integ. Calculus, p. 45, 2.5
Ms15, Differential Equations, p. 45 ..... 2.5
Ps7, Advanced Optics, p. 47..... 2.5
Ps10, Laboratory Physics, p. 47.. †5.0
Ch13, Mineralogy, p. 50..... †2.0
Ch14, Qualitative Analy., p. 50.. †5.0
Ch16, Quantitative Analy., p. 50.. †4.0
Nh7, Helminthology, p. 52..... †4.0
Nh9, Laboratory Zoology, p. 52, †4.0
Nh10, Entomology, p. 53 ..... 2.5
Me6, Analytic Mechanics, p. 63, 8 w. } 5.0
Me7, Applied Mechanics, p. 63, 10 w. }
Ee2, Electricty and Magnetism, p. 65. ..... 3.0

SENIOR YEAR.

Required.

Cv9, Constitutional Law and History, p. 40 ..... 5.0

Elective.

Eh10, English Literature, p. 34 .. 2.5
Pl3, Hist. of Philosophy, p. 39, 2.5
Ms12, Advanced Integral Calculus, p. 45..... 2.5
Ms20, Solid Analytic Geometry, p. 45 ..... 2.5
Ms16, Practical Astronomy, p.45, 2.5
Nh11, Geology, p. 53..... 2.5

Required.

Cv8, Political Economy, p. 39... 5.0

Elective.

Eh11, English Literature, p. 34.. 2.5
Cv10, Municipal Law, p. 40..... 1.0
Cv12, Library Work, p. 40. ..... †5.0
Ms13, Adv. Integral Calculus, p. 45..... 2.5
Ms15, Differential Equations, p. 45..... 2.5
Ms17, Practical Astronomy, p. 45, 2.5
Nh3, Advan. Physiology, p. 52.. 2.5
Nh4, Lab. Physiology, p. 52 ..... †2.0

THE CHEMICAL COURSE.

This course is designed for those who wish to become professional chemists and analysts, managers, or chemists of industries which require an extensive knowledge of chemistry, or teachers of chemistry. Attention is given to the preparation of students for the work of the agricultural experiment stations. In addition to a theoretical knowledge of chemistry, the student acquires, in his biological studies, knowledge of comparative anatomy, and of the lower forms of life, and in his work in the chemical laboratory, facility in the manipulation of chemical apparatus and the microscope.

The lectures and recitations are closely associated with practical work in the laboratories where the student, under the guidance of the instructors, becomes acquainted with the methods and apparatus of qualitative and quantitative analysis and metallurgy. The student is drilled in the use of chemical apparatus, in accurate observation, and in careful interpretation of directions.

Upon graduation the student receives the degree of Bachelor of Science; three years later, on proof of satisfactory advancement and on presentation of a thesis embodying original work or investigation, he receives the degree of Master of Science.

STUDIES OF THE CHEMICAL COURSE.

For the Freshman Year see page 70; for Declamations and Themes see page 33; for Military Science see page 67.

SOPHOMORE YEAR.

FALL TERM—18 WEEKS.	Hours.	SPRING TERM—18 WEEKS.	Hours.
Ml1, French, p. 35 or Ml5, German, p. 35.	5.0	Ml2, French, p. 35 or Ml6, German, p. 35	5.0
Ps1, General Physics, p. 46 or Ps12, General Physics, p. 46	5.0 2.5	Ps2, General Physics, p. 46 or Ps13, General Physics, p. 46	2.5
Ch5, Chemical Theory, p. 49	2.5	Ps5, Laboratory Physics, p. 46	†5.0
Ch14, Qualitative Analysis, p. 50.	†10.0	Ms5, Analytic Geometry, p. 44	2.5
Nh1, Cryptogamic Botany, p. 51.	2.5	Ch6, Inorganic Chemistry, p. 49.	2.5
Nh2, Laboratory Botany, p. 52	†2.0	Ch18, Quantitative Analysis p. 50,	†7.0

JUNIOR YEAR.

Pl1, Psychology, p. 38	2.5	Pl2, Logic, p. 39	2.5
Ml7, German, p. 36	2.5	Ml8, German, p. 36	2.5
Ch7, Inorganic Chemistry, p. 49	2.5	Ch8, Organic Chemistry, p. 49	2.5
Ch10, Chemical Readings, p. 49	1.0	Ch13, Mineralogy, p. 50	†2.0
Ch18, Quan. Analysis, p. 50	†10.0	Ch19, Volumetric Analysis and Assaying, p. 51	†13.0
Ch20, Agricultural Analysis, p. 51	†5.0		
Nh5, Invertebrate Zoology, p. 52 or Eel, Electricity and Magnetism, p. 65 (2 hrs.) or Eh8, English Literature, p. 34	2.5	Nh10, Entomology, p. 53 or Eh9, English Literature, p. 34	2.5

SENIOR YEAR.

Cv9, Constitutional Law and History, p. 40	5.0	Cv8, Political Economy, p. 39	5.0
Ch12, Organic Chemicals, p. 50	†5.0	Ch11, Laboratory Processes, p. 50,	2.5
Ch21, Toxicology and Biological Analysis, p. 51	†10.0	Ag13, Bacteriology, p. 56, 5 w. Ch22, Thesis Work, p. 51, 13 w.	†15.0
Ch23, Organic Chemistry, p. 51	2.5	Ch24, Industrial Chemistry, p. 51,	2.5
Nh11, Geology, p. 53	2.5		

THE PREPARATORY MEDICAL COURSE.

This course is arranged to meet the needs of those students who purpose becoming physicians, but also offers to those who

are interested in the biological sciences a very desirable training for teaching or investigation.

The course, outside of certain general subjects, including mathematics, language, and philosophy, consists mainly of two lines of study, chemical and biological. The chemical studies of the course, general and special, are continued for three and a half years, and include advanced inorganic and organic chemistry, biological chemistry, qualitative and quantitative analysis, toxicology, and the testing of drugs. The biological studies begin in the freshman year and continue throughout the course. They include botany, both phænogamic and cryptogamic, invertebrate zoology, comparative vertebrate zoology, human anatomy, advanced physiology, bacteriology, plant histology, and animal histology.

Important features of the course are: a study of animal parasites, particularly those affecting the human subject; a free use of the microscope in studying vegetable and animal tissues; experience in identifying and cultivating pathogenic organisms; a thorough consideration of the chemistry of foods, of the animal body, and of digestion and metabolism. Students graduated in this course are received into medical schools without examination, and by many of the best schools are given credit for the work of the first year.

Upon graduation the student receives the degree of Bachelor of Science; three years later, on proof of satisfactory advancement and on presentation of a thesis embodying original work or investigation, he receives the degree of Master of Science.

STUDIES OF THE PREPARATORY MEDICAL COURSE.

For the Freshman Year see page 70; for Declamations and Themes see page 33; for Military Science see page 67.

SOPHOMORE YEAR.

FALL TERM—18 WEEKS.	Hours.	SPRING TERM—18 WEEKS.	Hours.
M11, French, p. 35, or M15, German, p. 35,	5.0	M12, French, p. 35, or M16, German, p. 35,	5.0
Ps1, General Physics, p. 46, or Ps12, General Physics, 46	5.0 / 2.5	Ps2, General Physics, p. 46, or Ps12, General Physics, p. 46	2.5
Ch5, Chemical Theory, p. 49	2.5	Ps5, Laboratory Physics, p. 46	†5.0
Ch14, Qualitive Analysis, p. 50	†6.0	Ch6, Inorganic Chemistry, p. 49,	2.5
Nh1, Cryptogamic Botany, p. 51,	2.5	Ch15, Qualitative Analysis, p. 50,	†8.0
Nh2, Laboratory Botany, p. 52	†2.0	Ht8, Histology of Plants, p. 57, 9 w.	†5.0
		Ag13, Bacteriology, p. 56, 9 w.	

JUNIOR YEAR.

M17, German, p. 36	2.5	Pl2, Logic, p. 39	2.5
Pl1, Psychology, p. 38	2.5	Cv2, English History, p. 39	2.5
Ch9, Organic Chemistry, p. 49	2.5	Ch21, Toxicology and Biological Analysis, p. 51	†12.0
Chl7, Quantitative Analy., p. 50	†6.0	Nh7, Helminthology, p. 52	†4.0
Nh5, Invertebrate Zoology, p. 52,	2.5	Ag2, Biological Chemistry, p. 54,	5.0
Nh6, Laboratory Zoology, p. 52	†5.0		
Ag1, Biological Chemistry, p. 54,	2.5		

SENIOR YEAR.

Cv9, Constitutional Law and History, p. 40	5.0	Cv8, Political Economy, p. 39	5.0
Nh8, Comparative Vertebrate Zoology, p. 52	3.5	Nh3, Advanced Physiology, p. 52,	2.5
Nh11, Geology, p. 53	2.5	Nh4, Laboratory Physiology, p.52,	†2.0
Pm3, Laboratory Pharmacy, p.59,	†10.0	Nh12, Human Anatomy, p. 53	2.5
Pm7, Materia Medica, p. 59	2.5	Ag11, Veterinary Science, p. 56	2.5
		Ag14, Animal Histology, p.56, 9w. / Ag15, Lab. Bacteriology, p.56, 9w.	†10.0

COLLEGE OF AGRICULTURE.

The aim of the College of Agriculture is to prepare young men to become farmers, teachers, or investigators of agricultural subjects. The instruction is arranged; first, to secure for the student that intellectual development which is a condition fundamental to the highest success in any calling, and second, to give the necessary technical knowledge. The college comprises:

1. The Agricultural Course.
2. The Special Courses in General Agriculture.
3. The Special Course in Horticulture.
4. The Special Course in Dairying.
5. The Agricultural Experiment Station.

The Agricultural Course.

This course is broadly educational, particularly in the natural sciences and their relations to human needs and activities, and gives an admirable preliminary training for either business or professional life. The distinctive studies are along technical lines, but the branches pertaining to general culture, and to social and civil relations, occupy an important place.

The theoretical instruction, especially that of the last two years, is associated with practical work and observation. Practice is combined with theory whenever it is necessary for the demonstration of a principle or involves skilled labor, but the student's time is not consumed in merely manual operations.

Upon graduation the student receives the degree of Bachelor of Science; three years later, on proof of satisfactory advancement and on presentation of a thesis embodying original work or investigation, he receives the degree of Master of Science.

STUDIES OF THE AGRICULTURAL COURSE.

For the Freshman Year see page 70; for Declamations and Themes see page 33; for Military Science see page 67.

SOPHOMORE YEAR.

FALL TERM—18 WEEKS	Hours.	SPRING TERM—18 WEEKS.	Hours.
Ml1, French, p. 35 or Ml5, German, p. 35	5.0	Ml2, French, p. 35 or Ml6, German, p. 35	5.0
Ps1, General Physics, p. 46 or Ps12, General Physics, p. 46	2.5	Ps2, General Physics, p. 46 or Ps13, General Physics, p. 46	2.5
Ch5, Chemical Theory, p. 49	2.5	Ps5, Laboratory Physics, p. 46	†5.0
Ch14, Qualitative Analysis, p.50,	†6.0	Ch6, Inorganic Chemistry, p. 49	2.5
Nh1, Cryptogamic Botany, p. 51,	2.5	Ch16, Quan. Analysis, p. 50.	†8.0
Nh2, Laboratory Botany, p. 52	†2.0	Ht8, Hist. of Plants, p. 57, 9 w. Ag13, Bacteriology, p. 56, 9 w.	†5.0

JUNIOR YEAR.

Ml7, German, p. 36	2.5	Pl2, Logic, p. 39	2.5
Pl1, Psychology, p. 38	2.5	Cv2, English History, p. 39	2.5
Ch9, Organic Chemistry, p. 49	2.5	Nh10, Entomology, p. 53	2.5
Ch20, Agricultural Analysis, p.51,	†6.0	Ag2, Biological Chemistry, p. 54,	5.0
Nh5, Invertebrate Zoology, p.52,	2.5	Ag4, Agricultural Physics, p. 54, 9 w. Ag5, Agricultural Engineering p. 54, 9 w.	2.5
Nh6, Laboratory Zoology, p. 52	†5.0		
Ag1, Biological Chemistry, p. 54	2.5	Ht2, Pomology, p. 57, 9 w. Ht3, Olericulture, p. 57, 9 w.	2.5
		Ht6, Laboratory Hort. p. 57	†4 0

SENIOR YEAR.

Cv9, Constitutional Law and History, p. 40	5.0	Cv8, Political Economy, p. 39	5.0
Nh8, Comparative Vertebrate Zoology, p. 52	3.5	Nh3, Advanced Physiology, p. 52,	2.5
Nh11, Geology, p. 53	2.5	Ag6, Stock Feeding, p. 55, 7 w. Ag8, Stock Breeding, p. 55, 7 w. Ag9, Poultry Industry, p.55,4 w.	5.0
Ag3, Agricultural Chemistry, p. 54, 9 w. Ag7, Dairying, p. 55, 9 w.	2.5	Ag11, Veterinary Science, p. 56	2.5
Ht4, Plant Variation, p. 57, 9 w. Ht5, Landscape Gardening, p. 57, 9 w.	2.5	Ag12, Dissecting, p. 56, 6 w. Ag10, Dairy Practice, p. 55, 12 w.	†7.0
Ht7, Lab. Horticulture, p. 57	†5.0		

THE SHORT COURSES IN AGRICULTURE.

For those who can meet the expense, the investment of time and money necessary to complete the four years' course, is most wise, but there are many young men who conclude that they cannot command so much money and time, and to such the Short Courses in Agriculture are offered. In addition to the regular four years' course, students are admitted to special courses in agriculture of such length as their time will allow, and of such breadth as their previous training will permit. Stu-

dents will be admitted to these short courses, with the exception of the winter course of six weeks in dairying, at any time during the college year.

For admission to these courses, applicants should possess a good common school education. No formal entrance examination is required for admission to courses of one term or less, but the professor in charge will satisfy himself of the fitness of candidates to pursue the course with success. The requirements for admission to one and two years' courses are given on page 18.

These courses are intended to give the greatest amount of valuable and directly useful knowlege that can be acquired in the time allotted. The studies pursued must usually be selected from those announced in the catalogue, but in order to adapt them to the varying conditions and preparation, and to the time that can be given, the courses will be arranged, so far as practicable, to meet the needs of each student.

The annual expenses for courses of one year or more, are the same as those of students in the four years' courses. No charge is made for rooms. Short course students who are in attendance for one term or less are not charged tuition.

These courses, including the work in Agriculture, Horticulture, Animal Industry, and Veterinary Science, are in the general charge of the Professor of Agriculture, to whom inquiries should be addressed.

The outline of the subjects which may be profitably pursued, and which a student may expect to complete within the time alotted, are listed below:

SUBJECTS WHICH MAY BE TAKEN IN ONE TERM OR LESS.

General Agriculture. Plant and Animal Nutrition; Fertilizers and Manures; Breeds, Breeding and Feeding; Farm Machinery; Farm Drainage; Veterinary Science; Bacteriology; Injurious Insects and Fungi; Crops and Crop Production; Farm Gardening; Carpentry; Blacksmithing; Farm Accounts; Business Law.

Horticulture. Injurious Insects; Injurious Fungi; Bacteriology; Propagation of Plants; Vegetable Gardening; Spraying and Spraying Machines; Fruit Culture; Economic Botany;

Ornamental Gardening; Greenhouse Construction and Management.

SHORT WINTER COURSE IN DAIRYING.

The Course in Dairying is intended to meet the needs of those who wish to fit themselves for managers of creameries and cheese factories. If the course is pursued during two terms and two seasons' satisfactory work is performed in a butter or cheese factory, the student will be granted a certificate of proficiency.

This course begins on the first Tuesday of January and continues six weeks.

An outline of the subjects taken up in this course follows:

First Winter. Plant and Animal Nutrition; Diseases of Dairy Animals; Milk, Butter and Cheese; Cows,—Breeding, Handling and Judging; Building and Furnishings; Barns, Creameries, etc.; Accounts.

Second Winter. Milk, Butter and Cheese; Bacteriology of the Dairy; Veterinary Science; Boiler and Engine; Business Law; Carpentry; Feeding of Cows.

SUBJECTS WHICH MAY BE TAKEN IN A ONE YEAR COURSE IN AGRICULTURE.

General Chemistry; Agricultural Chemistry; Cryptogamic Botany; Laboratory Botany; Plant Variation; Landscape Gardening; Laboratory Horticulture; Pomology; Vegetable Gardening; Invertebrate Zoology; Laboratory Zoology; Entomology; Stock Feeding; Poultry Industry; Dairy Practice; Veterinary Science; Agricultural Physics; Agricultural Engineering; Business Law; Carpentry; Forge Work.

SUBJECTS WHICH MAY BE TAKEN IN A TWO YEARS' COURSE IN AGRICULTURE.

First Year. Rhetoric; Elementary Physics; General Chemistry; Agricultural Mechanics; Cryptogamic Botany; Laboratory Botany; Invertebrate Zoology; Laboratory Zoology; Drawing; Business Law; Entomology; Laboratory Horticulture; Pomo-

logy; Vegetable Gardening; General Botany; Carpentry; Forge Work.

Second Year. Laboratory Chemistry; Biological Chemistry; Agricultural Chemistry; Vertebrate Zoology; Physiology; Dissection; Veterinary Science; Stock Feeding; Plant Variation; Landscape Gardening; Laboratory Horticulture; Geology; Agricultural Physics; Agricultural Engineering; Dairying; Stock Feeding; Poultry Industry; Dairy Practice; Bacteriology.

The Agricultural Experiment Station.

The Maine Agricultural Experiment Station owes its existence to an act of Congress, approved March 2, 1887, popularly known as the Hatch Act. The act of the Legislature accepting the Congressional grant, made the Station a department of the University of Maine.

The affairs of the Station are considered by an advisory council consisting of a committee of the trustees of the University, the president of the University, members of the station staff, and representatives from the State Board of Agriculture, the State Pomological Society, and the State Grange. The recommendations of the council are referred to the trustees for ratification. The Station receives $15,000 annually from the general government.

The inspection of fertilizers, the inspection of concentrated commercial feeding stuffs, and the testing of the graduated glassware used in creameries, are entrusted to the Station through its director, who is responsible for the execution of the public laws relating to these matters.

The publications of the Station consist of annual reports and frequent short bulletins. The latter are intended to convey to the farmer the results that relate to farm practice. The annual reports contain a fuller statement of the proceedings of the Station, involving the technical language of science. These reports include nothing of value to practical agriculture not set forth in the bulletins. All station bulletins are sent to farmers on request, free of expense. The edition of the annual report is limited and this document is sent only when expressly requested. It is reprinted in the report of the State Board of Agriculture.

COLLEGE OF ENGINEERING.

The College of Engineering provides instruction along the lines indicated by the divisions made below. Two years of general studies, including the natural sciences, modern languages, philosophy and economics, are followed by two of technical training. Opportunity is offered for special work in addition to that of the required courses which are planned to furnish not only technical instruction, but also the basis of a liberal education. The college comprises:

1. The Civil Engineering Course.
2. The Mechanical Engineering Course.
3. The Electrical Engineering Course.

The Civil Engineering Course.

The object of this course is to give the student a knowledge of mathematics, mechanics, and drawing, experience in the care and use of engineering instruments, and a drill in the application of mathematical principles and rules, with a view to fitting him at graduation to apply himself at once to engineering work.

The methods of instruction are recitations, lectures, original problems, work in the testing laboratories, field practice, and designing, including the making of original designs and the preparation of the necessary drawings. Effort is made to acquaint the student with the best engineering structures, and with standard engineering literature.

The engineering building contains recitation rooms, designing rooms, testing laboratories, drawing rooms, and instrument rooms, and is well equipped.

Upon graduation the student receives the degree of Bachelor of Civil Engineering; three years later, on proof of satisfactory advancement and on presentation of a thesis embodying original work or investigation, he receives the degree of Civil Engineer.

STUDIES OF THE CIVIL ENGINEERING COURSE.

For the Freshman Year see page 70; for Declamations and Themes see page 33; for Military science see page 67.

SOPHOMORE YEAR.

FALL TERM—18 WEEKS.	Hours.	SPRING TERM—18 WEEKS.	Hours.
M13, French, p. 35, or M17, German, p. 36,	2.5	M14, French, p. 35, or M18, German, p. 36,	2.5
Ms6, Analytical Geometry, p. 44,	5.0	Ms7, Calculus, p. 44	5.0
Ps1, General Physics, p. 46	5.0	Ps2, General Physics, p. 46	2.5
Dr4, Mechanical Drawing, p. 48,	†7.0	Ps5, Laboratory Physics, p. 46	†5.0
Dr6, Descriptive Geometry, p. 48,	2.5	Dr7, Descriptive Geometry, p. 48,	1.5
		Ce1, Plane Surveying, p. 60	2.5
		Ce2, Field Work in Surveying, p. 60	†4.0

JUNIOR YEAR.

P11, Psychology p. 38	2.5	Cv2, Engish History, p. 39	2.5
Ms8, Calculus, p. 44	2.5	P12, Logic, p. 39	2.5
Ms12, Adv. Int. Calculus, p. 45, or Ms20, Solid Analytic Geometry, p. 45, or Nh11, Geology, p. 53, or Ps8, Mathematical Physics, p. 47, or Ps9, Laboratory Physics, p. 47, †5	2.5	Ms13, Adv. Integral Calculus, p. 45, or Ms15, Differential Equations, p. 45, or Ms9, Descriptive Astronomy, p. 44, or Ps7, Advanced Optics, p. 47, or Ps10, Adv. Lab. Physics, p. 47, †5	2.5
Ce3, Railroad Engineering, p. 60,	2.5		
Ce4, Railroad Work, p. 60	†5 0	Dr5, General Drawing, p. 48, 5 w. Dr8, Stereotomy, p. 48, 5 w. Ce9, Higher Surveying, p. 61, 8 w,	†10.0
Ce5, Highway Engineering, p. 60,	1.0		
Ce6, Mechanics, p. 60	5.0	Ch13, Mineralogy, p. 50	†2.0
		Ce7, Mechanics, p. 61	5.0

SENIOR YEAR.

Cv9, Constitutional Law and History, p. 40	5.0	Cv8, Political Economy, p. 39	5.0
Ce8, Sanitary Engineering, p. 61 or Mathematics or Physics as in Junior Year	2.5	Ms10, Practical Astronomy, p. 45,	2.5
		Ce13, Structures, p. 62	5.0
Ce10, Hydraulics, p. 61	2.5	Ce15, Designing and Thesis Work, p. 62, or Mathematics or Physics as in Junior Year, elective with †5 hours of Ce15.	†12.0
Ce12, Structures, p. 61	5.0		
Ce11, Hydraulics Field Work, p. 61, 9 w. Ce14, Designing, p. 62, 9 w.	†7.0		

THE MECHANICAL ENGINEERING COURSE.

This course is designed to give such a training in mathematics, mechanics, the principles of mechanism, drawing, and manual arts, as shall make the student competent to deal successfully with the problems of mechanical engineering. The technical courses include the geometry of machinery; gearing, with problems and practice; transmission of motion and power by belts, cams, couplings and links; the study and designing of the valve

and link motions used in the steam engine; analytic mechanics; the strength of materials; expansion of steam; construction of steam engines; the designing of steam boilers, and hydro-mechanics.

The methods of instruction include lectures, recitations, practice in the various branches of shop-work, the solution of numerous problems, the testing of theoretical results by comparison with modern machinery, the inspection of important plants, and the use of journals and catalogues.

The department shares Wingate Hall with the departments of civil engineering and physics. The machine shop is equipped with iron working and wood working machinery of the most approved forms.

Upon graduation the student receives the degree of Bachelor of Mechanical Engineering; three years later, on proof of satisfactory advancement and on presentation of a thesis embodying original work or investigation, he receives the degree of Mechanical Engineer.

STUDIES OF THE MECHANICAL ENGINEERING COURSE.

For the Freshman Year see page 70; for Declamations and Themes see page 33; for Military Science see page 67.

SOPHOMORE YEAR.

FALL TERM—18 WEEKS.	Hours.	SPRING TERM—18 WEEKS.	Hours.
Ml3, French, p. 35, or Ml7, German, p. 36	2.5	Ml4, French, p. 35, or Ml8, German, p. 36,	2.5
Ms6, Analytical Geometry, p. 44,	5.0	Ms7, Calculus, p. 44	5.0
Ps1, General Physics, p. 46	5.0	Ps2, General Physics, p. 46	2 5
Dr6, Descriptive Geometry, p.48,	2.5	Ps5, Laboratory Physics, p. 46..	†5.0
Me1, Carpentry, p. 62	†7.0	Dr7, Descriptive Geometry, p.48,	1.5
		Me2, Forge Work, p. 63	†5.0
		Me3, Kinematics, p. 63	†5.0

JUNIOR YEAR.

Pl1, Psychology, p. 38	2.5	Cv2, English History, p. 39	2.5
Ms8, Calculus, p. 44	2.5	Pl2, Logic, p. 39	2.5
Nh11, Geology, p. 53, or Ms12, Advanced Integral Calculus, p. 45, or Ms20, Solid Analytical Geometry, p. 45, or Ps8, Mathematical Physics, p. 47, or Ps9, Laboratory Physics, p.47. †5	2.5	Me6, Analytical Mechanics, p. 63, 8 w. Me7, Applied Mechanics, p. 63, 10 w.	5.0
Me5, Analytical Mechanics, p.63,	5.0	Me9, Machine Design, p. 64	3.5
Me4, Machine Work, p. 63, or Ps11, Electrical Measurements and Testing, p. 47, elective with †4 hrs of Me4	†8.0	Me4, Machine Work, p. 63, or Ms13, Advanced Integral Calculus, p. 45, 2.5 hrs. or Ms15, Differential Equations, p. 45, 2.5 hrs. or Ps7, Advanced Optics, p. 47, 2.5 hrs., or Ps10, Adv. Lab. Physics, p.47, †5 hrs., elective with †5 hrs. of Me4	†10.0
Ee1, Electricity and Magnetism, p. 65	2.0		

SENIOR YEAR.

Cv9,	Constitutional Law and History, p. 40.....	5.0	Cv8, Political Economy, p. 39.. 5.0
Me8,	Applied Mechanics, p. 64..	2.5	Me13, Testing, p. 64..... ..... 2.5
Me10,	Hydro-Mechanics, p.64....	2.5	Me14, Steam Engine, p. 64. ..... 3.5
Me11,	Heat and Steam, p. 64.....	2.5	Me15, Steam Engine Design, p. 65, 9 w. and Me16, Thesis Work, p.65, 9 w. or Mathematics or Physics as in Junior year, elective with †5 hrs. of Me15 and Me16. †15.0
Me12,	Steam Boiler Design, p. 64, or Mathematics or Physics, as in Junior year, elective with †5 hrs. of Me12	†12.0	

THE ELECTRICAL ENGINEERING COURSE.

This course is designed to give the student the training necessary to prepare him to meet successfully the problems of the practical electrical engineer. It is identical with the course in Mechanical Engineering for the first two years. During the last two years the student devotes his time about equally to mechanical and electrical work. He gets a knowledge of steam engineering, boiler management, mechanics and kindred subjects, and at the same time becomes familiar with the various branches of electrical engineering. The work consists of lectures, recitations, designing and drafting, laboratory practice, and plant testing. This course is in the charge of the professor of physics.

The lecture-room, drafting-room, and junior laboratory are located in Wingate Hall. The electric lighting plant and dynamo laboratory occupy a building adjoining the Shop. The equipment is ample to give the student a thorough preparation for the work of designing, constructing, testing and operating the various machines and instruments found in an electric plant.

Upon graduation the student receives the degree of Bachelor of Mechanical Engineering; three years later, on proof of satisfactory advancement and on presentation of a thesis embodying original work or investigation, he receives the degree of Mechanical Engineer or Electrical Engineer, as his professional work may make proper.

STUDIES OF THE ELECTRICAL ENGINEERING COURSE.

For the Freshman Year see page 70; for Declamations and Themes see page 33; for Military Science see page 67.

SOPHOMORE YEAR.

FALL TERM—18 WEEKS.	Hours.	SPRING TERM—18 WEEKS.	Hours.
Ml3, French, p. 35, or Ml7, German, p. 36	2.5	Ml4, French, p. 35 or Ml8, German, p. 36	2.5
Ms6, Analytical Geometry, p. 44	5.0	Ms7, Calculus, p. 44	5.0
Ps1, General Physics, p. 46	5.0	Ps2, General Physics, p. 46	2.5
Dr6, Descriptive Geometry, p. 48	2.5	Ps5, Laboratory Physics, p. 46	†5.0
Me1, Carpentry, p. 62	†7.0	Dr7, Descriptive Geometry, p.48,	1.5
		Me2, Forge Work, p. 63	†5.0
		Me3, Kinematics, p. 63	†4.0

JUNIOR YEAR.

Pl1, Psychology, p. 38	2.5	Cv2, English History, p. 39	2.5
Ms8, Calculus, p. 44	2.5	Pl2, Logic, p. 39	2.5
Nh11, Geology, p. 53, or Ms12, Advanced Integral Calculus, p. 45, or Ms20, Solid Analytic Geometry p. 45 or Ps8, Mathematical Physics, p. 47 or Ps9, Laboratory Physics, p. 47 †5	2.5	Me6, Analytical Mechanics, p. 64, 8 w. Me7, Applied Mechanics, p. 63 10 w.	5 0
Ps11, Electrical Measurements and Testing, p. 47	†4.0	Me9, Machine Design, p. 64 or Ms13, Advanced Integral Calculus, p. 45, 2.5, or Ms15, Differential Equations, p. 45, 2.5, or Ps7, Adv. Optics, p. 47, 2.5, or Ps10, Adv. Lab. Physics, p. 47, †5	3.5
Me5, Analytical Mechanics, 63	5.0		
Ee1, Electricity and Magnetism, p. 65	2.0	Ee2, Electricity and Magnetism, p. 65	3.0
Me4, Machine Work, p. 63	†4.0	Me4, Machine Work, p. 63	†5.0

SENIOR YEAR.

Cv9, Constitutional Law and History, p. 40	5.0	Cv8, Political Economy, p. 39	5.0
Me11, Heat and Steam, p. 64	2.5	Me14, Steam Engine, p. 64 or Mathematics or Physics as in Junior Year,	3 5
Ee3, Electrical Machinery, p. 65.	2.5		
Ee5, Electrical Design, p. 66	†7.0	Ee4, Electrical Engineering, p. 66, 9 w. 1st	5.0
Ee7, Laboratory Electricity, p.66,	†5.0	Ee6, Electrical Design, p. 66, 9 w 1st	†10.0
Ee9, Power Stations, p. 66, or Ee12, Telephony, p. 67, or Me8, Applied Mechanics, p.64, or Mathematics or Physics as in Junior Year	2.5	Ee8, Theoretical Electricity, p. 66, 9 w. 2nd	2.5
		Ee11, Thesis Work, p. 67, 9 w. 2nd	†15.0

COLLEGE OF PHARMACY.

The College of Pharmacy comprises:

1. The Pharmacy Course. (Four years.)
2. The Short Course in Pharmacy. (Two years.)

THE PHARMACY COURSE.

This course is offered in response to a demand for a thorough training, both general and technical, for those who are to become pharmacists. It aims to combine a broad general culture and thorough preparation along its special lines, with the design of affording both the intellectual development necessary for the well rounded professional or business man, and the necessary technical training. To this end, it includes the same instruction in modern languages, civics, and the sciences, offered in other college courses.

Those who intend to fit themselves for pharmaceutical work are urged to consider carefully the superior advantages of this course. The growing importance of biological, sanitary, and medical sciences, and the pharmacist's relation to them, make it increasingly necessary to his success, that he be not only a well trained man in the technical branches, but an educated man in the broadest sense.

Instruction in pharmaceutical studies is given by means of lectures, recitations, and tests, supplemented by work in the laboratories of chemistry and pharmacy, and embraces qualitative, quantitative, and volumetric analysis, toxicology, bacteriology, prescriptions, the preparation of pharmaceutical compounds, and original investigations.

The library contains valuable reference literature in chemistry and pharmacy, and the best chemical and pharmaceutical journals.

Upon graduation the student receives the degree of Bachelor of Science; after one year, on proof of professional work or further study, he receives the degree of Graduate in Pharmacy; two years later, on proof of satisfactory advancement and on presentation of a thesis embodying original work or investigation, he receives the degree of Master of Science.

STUDIES OF THE PHARMACY COURSE.

For the Freshman Year see page 70; for Declamations and Themes see page 33; for Military Science see page 67.

SOPHOMORE YEAR.

FALL TERM—18 WEEKS.

	Hours.
M11, French, p. 35 or M15, German, p. 35	5.0
Ps1, General Physics, p. 46 or Ps12, General Physics, p. 46	2.5
Ch5, Chemical Theory, p. 49	2.5
Ch14, Qualitative Analysis, p. 50.	†10.0
Nh1, Cryptogamic Botany, p. 51.	2.5
Nh2, Laboratory Botany, p. 52	†2.0

SPRING TERM—18 WEEKS.

	Hours.
M12, French, p. 35 or M16, German, p. 35	5.0
Ps2, General Physics, p. 46 or Ps13, General Physics, p. 46	2.5
Ps5, Laboratory Physics, p. 46	†5.0
Ch6, Inorganic Chemistry, p. 49.	2.5
Ch15, Qualitative Analysis, p. 50.	†10.0

JUNIOR YEAR.

P11, Psychology, p. 38	2.5
M17, German, p. 36	2.5
Ch7, Inorganic Chemistry, p. 49.	2.5
Ch10, Chemical Readings, p. 49.	1.0
Ch17, Quantitative Analysis, p. 50	†10.0
Ag1, Biological Chemistry, p. 54.	2.5
Pm5, Inorganic Pharmacognosy, p. 59	2.5
P12, Logic, p. 39	2.5
Ch8, Organic Chemistry, p. 49	2.5
Ag2, Biological Chemistry, p. 54.	5.0
Ch21, Toxicology and Biological Analysis, p. 51	†5.0
Ht8, Histology of Plants, p. 57 9 w. / Ag13. Bacteriolgy, p. 56, 9 w.	†5.0
Pm6, Organic Pharmacognosy, p. 59	4.0

SENIOR YEAR.

Cv9, Constitutional Law and History, p. 40	5.0
Pm2, Pharmacy, p. 59	5.0
Pm3, Laboratory Pharmacy, p. 59	†10.0
Pm7, Materia Medica, p. 59	2.5
Cv8, Political Economy, p. 39	5.0
Nh3, Advanced Physiology, p. 52,	2.5
Pm4, Pharmacopœia and Prescriptions, p. 59	3.0
Pm8, Thesis Work, p. 59	†10.0
Ag15, Laboratory Bacteriology, p. 56	†5.0

THE SHORT COURSE IN PHARMACY.

This course is designed for those who, for lack of time or for other reasons, are unable to take the four years' course in pharmacy. The more general educational studies of the full course

are omitted, but it is the aim to offer as broad a range of subjects as can be undertaken without sacrifice of thoroughness in the technical work. The course corresponds, in general, to the usual full course of the pharmaceutical college. The work required of the student will occupy his whole time during the college year of nine months, and will usually exclude work in drug stores, during term time.

Students who complete this course in a satisfactory manner receive a certificate. Three years later, on presentation of a satisfactory thesis and proof of professional work, or further study, they receive the degree of Graduate in Pharmacy.

STUDIES OF THE SHORT COURSE IN PHARMACY.

For Declamations and Themes see page 33; for Military Science see page 67.

First Year.

Fall Term—18 Weeks.	Hours.	Spring Term—18 Weeks.	Hours.
Ps3, Elementary Physics, p. 46	2.5	Ps4, Elementary Physics, p. 46	2.0
Ch1, General Chemistry, p. 48	2.5	Ps6, Laboratory Physics, p. 46	†1.0
Ch14, Qualitative Analysis, p. 50,	†12.0	Ch2, General Chemistry, p. 48	2.5
Pm1, Pharmacy, p. 58	5.0	Ch16, Quantitative Analysis, p. 50, 9 w.	†14.0
Pm5, Inorganic Pharmacognosy, p. 59	2.5	Ch19, Volumetric Analysis and Assaying, p. 51, 9 w.	
		Ht1, General Botany, p. 56	†5.0
		Pm6, Organic Pharmacog., p. 59,	4.0

Second Year.

Ch9, Organic Chemistry, p. 49	2.5	Ch21, Toxicology and Biological Analysis, p. 51, 9 w.	†13.0
Nh2, Laboratory Botany, p. 52	†2.0	Ag13, Bacteriology, p. 56, 9 w. (5 hrs.)	
Ag1, Biological Chemistry, p. 54,	2.5	Ag2, Biological Chemistry, p. 54,	5.0
Pm2, Pharmacy, p. 58	5.0	Pm4, Pharmacopœia and Prescriptions, p. 59	3.0
Pm3, Laboratory Pharmacy, p. 59	†10.0	Pm8, Thesis Work, p. 59	†10.0
Pm7, Materia Medica, p. 59	2.5		

SCHOOL OF LAW.

ADVISORY BOARD.

Hon. HENRY BRADSTREET CLEAVES,.....Portland.
Hon. WILLIAM HENRY FOGLER,.....Rockland.
Hon. CHARLES HAMLIN, M. A.,.....Bangor.
Hon. HERBERT MILTON HEATH, M. A.,.....Augusta.
Hon. ANDREW PETERS WISWELL, B. A.,.....Ellsworth.

FACULTY.

ABRAM WINEGARDNER HARRIS, Sc. D., President of the University.

GEORGE ENOS GARDNER, M. A., Dean, and Professor of Law.

ALLEN ELLINGTON ROGERS, M. A., Professor of Constitutional Law.

CHARLES HAMLIN, M. A., Lecturer on Bankruptcy.

LUCILIUS ALONZO EMERY, M. A., LL. D., Lecturer on Roman Law.

ANDREW PETERS WISWELL, B. A., Lecturer on Evidence.

LOUIS CARVER SOUTHARD, M. S., Lecturer on Medico-Legal Relations.

FOREST JOHN MARTIN, LL. B., Lecturer on Pleading and Maine Practice.

HUGO CLARK, C. E., Lecturer on Equity Pleading.

RALPH KNEELAND JONES, B. S., Librarian.

ROBERT HARPER MURRAY, B. A., LL. M., Instructor in Law.

The School of Law, a department of the University of Maine, was opened to students in the fall of 1898. It occupies a suite of rooms in the Exchange Building, corner of State and

Exchange streets, Bangor. In Bangor are held annually one term of the U. S. District Court, five terms of the Maine Supreme Judicial Court, one term of the Law Court, and daily sessions of the Municipal Court. The library of the school contains about fifteen hundred volumes, including full sets of the United States, Maine, Massachusetts, and Vermont Reports; of the American Digest, American Reports and American State Reports, and a carefully selected list of text-books.

Students have access to the Penobscot Bar Association Library of about 4,000 volumes. The Bangor Public Library contains about 43,000 volumes.

Admission.

Graduates of colleges, or satisfactory preparatory schools, will be admitted to the junior class as candidates for the degree of Bachelor of Laws without examination. Other applicants must give satisfactory evidence of the necessary educational qualifications for the pursuit of the required course of study. These will be fixed in each case, on a consideration of its merits.

Special students, not candidates for a degree, will be admitted without examination, and may pursue any studies for which they are prepared.

Students who produce from another law school of good standing a certificate showing that they have completed satisfactorily the equivalent of one year's work in this school, will be admitted to the senior class without examination. Other candidates for advanced standing will be required to pass an examination satisfactory to the faculty of the school on the studies of the first year, or equivalent studies.

Members of the bar of any state will be admitted to the senior class, without examination, as candidates for the degree of Bachelor of Laws.

Method of Instruction.

Three methods of instruction are used by law schools. These are the lecture system, the text-book system, and the case system.

The officers of the school are convinced that the case system is the most vital, effective, and satisfactory method of law study, and, while text-books will be used to some extent, and certain parts of the law will be covered by lectures, the careful and systematic study of cases will form the basis of the work.

Persistent use will be made of problems or hypothetical cases. In each study the student will be given problems containing a brief but adequate statement of facts, and the questions of law arising therefrom, and will be required to prepare written opinions upon them. These opinions will afterward be read in class, and the law discussed. The student will then be referred to the actual cases from which the problems are taken, will be required to read them carefully, and to compare his own treatment with that of the court. The solution of the problems will involve only the principles that have already been studied. Such problems are very effective in fixing in the memory the principles of law, and in cultivating readiness and skill in their application.

Careful attention will be given to practice, statute law, conveyancing, the drawing of contracts, wills, and other legal documents.

Moot Court.

Emphasis will be placed upon the moot court. It will hold weekly sessions, beginning early in the course. Questions of law and fact will be heard, and particular attention will be given to the trial of jury cases. The practice of all the courts of the State will be here exemplified. Work in the court will be required of every student.

Course of Study.

The course of study covers two years, in accordance with the requirements for admission to the bar in the State of Maine.* The school year consists of thirty-two weeks, and is divided into the fall, winter, and spring terms of eleven, ten, and eleven weeks respectively.

For the detailed statement of courses see pages 40-43.

Degrees.

The degree of Bachelor of Laws will be conferred on the completion of the course. The degree of Master of Laws will be granted for one year of graduate study.

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*The Legislature of 1899 increased the time of preparation required for admission to the bar to three years. The course of study in the School of Law will be arranged in accordance with this requirement, beginning with the fall term of 1899.

EXPENSES.

The tuition fee is $60 a year, payable in three installments of $20, at the beginning of the fall, winter, and spring terms. The tuition fee must invariably be paid before the student is admitted to any lectures. The graduation fee is $10. There are no other charges.

Board and furnished room, with light and heat, may be obtained for one person, in the most convenient and central locations near the School, at a price ranging from $4.00 to $7.00 per week. In other locations, lower rates may be obtained, and expenses will be further reduced if two students occupy one room.

THE LIBRARY AND READING ROOM.

The library, on the first floor of Coburn Hall, contains over thirteen thousand bound volumes, and about five thousand pamphlets. The growth of the library is about fifteen hundred volumes a year.

A large and convenient reading room adjoins the book room. About one hundred and eighty of the most important literary, scientific, and technical papers, magazines, and reviews, both American and foreign, are kept on file.

The library is open for eight hours daily, except Sunday. Students are allowed direct access to the shelves. Students may have two books each at a time, to be kept two weeks, when they may be renewed, unless some one else has filed an application for them. There is a fine of two cents a day for books kept over time. If additional books are needed for special work they may be obtained upon application to the librarian.

A reading room, located on the first floor of Oak Hall, is provided with the principal daily and weekly newspapers.

THE MUSEUM AND HERBARIUM.

The museum is located in two stories of the wing of Coburn Hall. In the upper story are exhibited the mineral collection, geological specimens and plant models. The mineral cabinet embraces a general collection of three hundred species of the more common minerals, arranged for study according to Dana's system. There is a fine collection of economic minerals, presented by the National Museum; and an educational series of rocks, given by the U. S. Geological Survey. The geological cabinet. embraces a collection of plant and animal fossils, and a collection of the more important fragmental, crystalline, and volcanic rocks.

On the lower floor are the collections of vertebrate and invertebrate animals, and a set of animal models. The invertebrates include working collections and interesting native and exotic exhibition specimens of sponges, hydroids, corals, echinoderms, vermes, mollusks, crustaceans, and insects. The vertebrates include the nucleus of a collection of the fishes, reptiles, birds, and mammals of the State, and a set of type exotic mammals. The collection of animal models embraces a human manikin, the human eye, ear, and larynx, an insect, leach, snail, fish, snake, and bird.

The herbarium consists of the original collection of Maine plants of about 500 species; the new collection of Maine plants of 800 species; the Blake herbarium of 7,000 species, including phænogams and cryptogams; Ellis and Everhard's North American Fungi, comprising thirty-five centuries; Halsted's Lichens of New England; Underwood's Hepaticæ; Cummings and Seymour's North American Lichens; Cook's Illustrative Fungi; Collins's Algæ of the Maine Coast; a collection of illustrative cryptogams in boxes; Harvey's Weeds and Forage Plants of Maine of 300 species; Halsted's Weeds; a collection of grasses and forage plants of 400 species; a collection of United States woods prepared by the United States Department of Agriculture; a collection of seeds and fruits; numerous slides for the microscope.

FIELD DAY.

One day in each year, usually the fourth Wednesday in May, is known as the Field Day of the agricultural departments. The usual exercises are omitted and all departments are thrown open to visitors. Special effort is made to exhibit the facilities of the agricultural departments in the most thorough manner. Special rates are obtained on the railroad for those who come from a distance. The attendance has ranged from twelve hundred to seventeen hundred persons. The program includes informal addresses by members of the faculty in regard to the collections; demonstrations with some of the more important apparatus; exhibitions of improved agricultural machinery; the operation of the dairy building; an exhibit of agricultural products, tools and supplies contributed by manufacturers and dealers. The experimental work of the Experiment Station is explained by the investigators. The students give an exhibition drill.

Circulars in regard to Field Day may be obtained by addressing the Professor of Agriculture.

GENERAL REGULATIONS.

The regulations in regard to the selection of studies, standings and grades, absences from recitations and examinations, rhetorical exercises, entrance conditions, leaves of absence, attendance upon church and chapel, penalties, examinations, and athletics, are printed in full in the annual report of the President for the year ending December 31, 1894.

By these regulations, the quota of regular studies for each student is, for a minimum, seventeen hours, and, for a maximum, twenty hours of class room work each week. In the application of this rule, two hours of laboratory work or of other exercises not requiring preparation, count as one hour.

Excuses for absence from individual exercises are not required. Each student is expected to be present at all recitations and other exercises, except when imperative reasons require absence. Of these reasons he is the judge, but a student who is absent from ten per cent. or more of the exercises in any study, is not admitted to the final examination. A student who fails to pass at an examination, is absent from an examination, or is excluded from an examination, may make up his deficiency at the special examinations held at the times noted in the calendar. The arrearage examinations during the Christmas recess include only studies of the spring term; the examinations during the Easter recess include only studies of the fall term. A student who fails to make up an arrearage, before the study is again taken in class, is required to attend recitations in that study.

Every student is given a report of his work shortly after the close of each term. Parents or guardians may obtain these reports from the secretary upon application.

SCHOLARSHIP HONORS.

Honors for scholarship are of two kinds, general and special. General honors are given at graduation to students who attain an average standing, after the freshman year, of ninety on a scale of one hundred. Special honors are granted for the satisfactory completion of an honor course in addition to the work required for a degree. An honor course must involve at least ninety recitations or an equivalent. The methods of work are determined by the instructor. The list of honor courses, with full description, is published by the secretary of the faculty four weeks before commencement. Honor courses are open to

juniors and seniors who have attained an average standing of eighty per cent. in all previous work, and an average standing of ninety per cent. in the previous work of the department in which the honors are sought. A student cannot register for an honor course without the consent of the faculty, nor later than the fourth week of the fall term. Upon completion of a course the student's work will be tested by an examination or thesis, under the direction of the faculty committee on honor courses, and the result, together with the instructor's report, will be laid before the faculty. The faculty may grant special honors to those students who receive the approval of the committee, but will not do so if the general work is unsatisfactory. Honors, and their nature, are stated upon the commencement program and published in the annual catalogue.

STUDENT EXPENSES.

Many students go through college for an annual expenditure of a little more than $200, exclusive of the expense of clothing, traveling and vacations, and very many earn a part of this sum, by vacation work. An estimate of the necessary annual expenses of a student in any department, except the School of Law, may be made from the following table. For the expenses of students in the School of Law, reference is made to the article on that school. It should be noticed that clothing, traveling, vacation, society and personal expenses are not included in the table. These vary according to individual tastes and habits. The table is made up for men students who room in the dormitory, and board at the Commons. The necessary expenses of other students are sometimes lower, but usually slightly higher. In all cases an allowance must be made for personal incidental expenses. The expenses of the first year are higher than those of later years.

Annual Student Expense.

Tuition, 2 terms at $15.00,	$30 00
Registration fee, 2 terms at $5.00,	10 00
Incidentals, 2 terms at $10.00,	20 00
Laboratory fees, average, about,	8 00
Text-books, about,	15 00
Board, 34 weeks at $3.00,	102 00
Heat and light for half room, and general care of dormitory, about,	15 00
Total,	$200 00

The tuition charge is $15.00 a term, or $30.00 a year, and all students are subject to this charge, except those in short courses in agriculture, for which no tuition charge is made. Worthy students, residents of Maine, who need assistance, may obtain from the University loans sufficient to cover the tuition charge. The regulations in regard to these loans are fully stated in the article on loans, page 102.

The registration fee of $5.00 must be paid at the beginning of each term, before the student enters any classes.

The incidental fee is $10.00 a term or $20.00 a year, and covers heat and light for public buildings, reading-room charges, care and cleaning of public rooms, and miscellaneous expenses.

The cost of text-books will average almost exactly $15.00 a year for the course. These may be bought from the librarian at cost, but must be paid for on delivery. The expense can be decreased by buying second-hand books and selling them when used.

Students in the laboratories and shops pay a charge, to cover cost of materials and maintenance. These charges are as follows:—biology, per term, $1.00; chemistry, per term, about $3.00; bacteriology, per course, $3.00; physics, per course, $2.00; pharmacy, per term, about $3.50; mineralogy, $2.00; natural history, per course, $2.00; electrical engineering, per course, $2.50; shop, per course, $5.00. Laboratory charges in the civil engineering course are very few, but travelling expenses in visiting engineering works will be nearly equivalent to the laboratory expenses of other courses.

In some years the students spend a week in camp, for military instruction. The expense is borne partly by the university and partly by the student. The expense is about $5.00 a student.

The largest item of expense is for board. At the Commons, the university boarding house, each student pays his share of the cost, usually about $2.75 to $3.00 a week. Board may be obtained in clubs or private families at prices ranging from $3.00 to $3.25 a week.

Rooms in the men's dormitory are free, but students supply their own furniture, and pay for heat and light, for the lighting and care of the halls and public rooms of the dormitory, and for damages. This charge may be expected to be about $15.00 a year, for each student, when two occupy a room. Furnished rooms, with light and heat, may be obtained in the village for $1.50 a week if occupied by one person, or $2.00 a week if occupied by two persons.

The estimate for furniture is made on the assumption that two students will unite in furnishing a room, and that something will be realized from the sale of furniture upon graduation.

Women students who do not live at their own homes are required to room and board at the Mt. Vernon House. The charge for board is $3.00 a week. No charge is made for the rent of rooms, but students provide their own furniture, take care of their rooms, pay for the heat and light of their rooms, and for the heat, light and care of the halls and public rooms. The charge for all these items is at cost. Students are charged for all damages done to university property or to that of other students.

Each student is required to deposit with the Treasurer, a bond, with two good names as sureties, in the amount of $150.00, to cover term bills. Blanks on which bonds should be made out will be furnished by the Secretary on application. Those who keep a sufficient deposit with the Treasurer to cover the bills of one term, will not be required to furnish a bond. The deposit required is $90.00 from those who board at the Commons or Mt. Vernon House, and $30.00 from others. No student who is in debt to the treasury will be graduated.

A circular containing a fuller statement in regard to expenses, and treating of the opportunities for self help, may be obtained on application.

LOANS.

Tuition Loans.

Worthy students, residents of Maine, who need assistance may borrow from the university treasury a sum sufficient to pay the tuition charge. This privilege is not extended to students in the School of Law.

Borrowers are required to give endorsed notes or other satisfactory security. The loans bear interest at six per cent. per annum, and are due $30.00 a year, beginning with the first year after graduation, but may be paid earlier. No member of the faculty is accepted as an endorser.

Loans are granted by a committee consisting of the President and two other members of the faculty. The number of loans may not exceed one-third of the number of students in the undergraduate departments. Loans are granted to cover the tuition charges of one year at a time.

The first grant of loans for each university year is made in June preceding. Applications for loans are considered during May, and to insure attention at this time should be forwarded to the President not later than May 15. A second award is made in the fall term. Applications should be made not later than October 10. They must be made to the President upon blanks to be obtained from the secretary of the faculty. Awards made in June may be withdrawn from students who do not register, or claim their loans by October 10.

The Kittredge Loan Fund.

This fund, amounting to nearly one thousand dollars, was established by Nehemiah Kittredge of Bangor. It is in the control of the President and Treasurer of the University, by whom it is loaned to needy students. In the deed of gift, it was

prescribed that no security should be required further than personal notes bearing interest at the prevailing rate. Loans are made on the conditions that the interest shall be paid promptly, and that the principal shall be returned from the first earnings after graduation.

THE ALUMNI.

THE GENERAL ALUMNI ASSOCIATION.

George H. Hamlin, President, Orono.
Charles P. Weston, Recording Secretary, Orono.
Ralph K. Jones, Corresponding Secretary, Orono.
Albert H. Brown, Treasurer, Old Town.
James N. Hart, Necrologist, Orono.

LOCAL ASSOCIATIONS.

THE WEST MAINE ASSOCIATION.—S. W. Bates, First National Bank Building, Portland, President; C. S. Webster, 57 Exchange St., Portland, Secretary.

THE NORTH MAINE ASSOCIATION.—Harvey B. Thayer, Presque Isle, President; N. H. Martin, Fort Fairfield, Secretary.

THE BOSTON ASSOCIATION.—L. C. Southard, 73 Tremont St., President; J. D. Lazell, 443 Tremont Building, Secretary.

THE NEW YORK ASSOCIATION.—A. E. Mitchell, 90 High St., Passaic, N. J., President; Edmund Clark, 148 E. 49 St., New York, Secretary.

THE WASHINGTON (D. C.) ASSOCIATION.—F. Lamson-Scribner, Department of Agriculture, President; George P. Merrill, National Museum, Secretary.

THE PENOBSCOT VALLEY ASSOCIATION.—J. M. Oak, Bangor, President; E. H. Kelley, Bangor, Secretary.

CLASS SECRETARIES.

E. J. Haskell, '72, *Westbrook;* J. M. Oak, '73, *Bangor;* W. H. Gerrish, '74, *Deering;* E. F. Hitchings, '75, *Waterville;* E. M. Blanding, '76, *Bangor;* S. W. Gould, '77, *Skowhegan;* John Locke, Jr., '78, *Portland;* F. E. Kidder, '79, 1362 *California St., Denver, Colo.,* J. M. Bartlett, '80, *Orono;* H. M. Plaisted, '81, *724 Commercial Building, St. Louis, Mo.;* W. R. Howard, '82, *Belfast;* L. W. Taylor, '83, *Bangor;* E. S. Abbott, '84, *Bridgton;* J. N. Hart, '85, *Orono;* R. K. Jones, '86, *Orono;* D. W. Colby, '87, *Skowhegan;* F. S. Brick, '88, *Belfast;* Nellie W. Reed, '89, *Stillwater;* E. H. Kelley, '90, *Bangor;* H. G. Menges, '91, 21 *College Ave., Medford, Mass.;* G. F. Atherton, '92, *Susquehanna, Pa.;* G. F. Rowe, '93, *Lincoln;* F. G. Gould, '94, *Orono;* F. Damon, '95, *Bangor;* P. D. Sargent, '96, *Machias;* A. J. Patten, '97, *Orono;* C. A. Pearce, '98, *Fort Fairfield.*

ORGANIZATIONS.

FRATERNITIES.—The following fraternities are represented in the University: Q. T. V., B. Θ. Π., K. Σ., Δ. T. Ω., Φ. K. Σ., Δ. P., I. Φ., Φ. Γ. (Women's).

ASSOCIATIONS.—Young Men's Christian Association, Athletic Association, Publishing Association, Electrical Society, University Press Club, University Band, Orchestra, Photographic Society, Glee Club, Debating Society, Scientific Association, French Club.

YOUNG MEN'S CHRISTIAN ASSOCIATION.—The Young Men's Christian Association, composed of students, has for its object the promotion of Christian fellowship and aggressive Christian work.

HONORARY SOCIETY.—At the end of each year the honorary society, Lambda Sigma Eta, elects to membership the five members of the Junior class having the highest standing, and during the fall term the five next highest in the same class are added.

MOUNT VERNON HOUSE.

UNIVERSITY PUBLICATIONS.

THE ANNUAL CATALOGUE OF THE UNIVERSITY OF MAINE.—This contains descriptions of the courses of study, lists of the trustees, faculty, and students, and other information relating to the University.

THE SHORT CATALOGUE OF THE UNIVERSITY OF MAINE.—This is an abbreviated form of the catalogue.

THE ANNUAL REPORT OF THE TRUSTEES, PRESIDENT, AND TREASURER, TO THE GOVERNOR AND COUNCIL OF THE STATE.—The reports of the Trustees and President include an account of the general affairs and interests of the University for the year, and the report of the Experiment Station. The report for the odd years contains the biennial catalogue of graduates.

THE UNIVERSITY BULLETINS.—These are occasional publications containing reports of the investigations or researches made by the university officers, or other information of public interest relating to the University.

THE UNIVERSITY CIRCULARS.—These are occasional pamphlets, issued for special purposes.

THE ANNUAL REPORT OF THE EXPERIMENT STATION.—This is Part II of the Annual Report of the University.

THE EXPERIMENT STATION BULLETINS.—These are popular accounts of the results of station work which relate directly to farm practice.

THE CADET.—This is a monthly magazine published during the university year by an association of the students.

THE PRISM.—This is an illustrated annual, published by the junior class.

THE MAINE BULLETIN.—This is a small publication issued quarterly by the University, to give information to the alumni.

COMMENCEMENT.

The Commencement exercises of 1898 were as follows:—

Saturday, June 18: Junior Exhibition.

Sunday, June 19: Baccalaureate Sermon, by President A. W. Harris, Sc. D.

Monday, June 20: College Convocation, including reports of departments and student enterprises, and the awarding of prizes; Class Day Exercises; Reception by Q. T. V. Fraternity.

Tuesday, June 21: Exhibition Drill; Reception by the B. Θ. Π., K. Σ. and A. T. Ω. Fraternities; President's Reception.

Wednesday, June 22: Commencement Exercises; Commencement Dinner; Meeting of the Alumni Association; Commencement Concert.

CERTIFICATES AND DEGREES.

Certificates were presented to the following persons upon completing the Short Course in Pharmacy:

Daniel Lunt Cleaves, Portland.
Fred Elmer Hall, Houlton.
Wilbur Edwin MacDougal, South Lincoln.
Curtis Boyce Mitchell, Unity.

The first degree was conferred upon the following persons:

Fred Wesley Bailey, B. S., (in Pharmacy), Belfast.
Wilson Darling Barron, B. M. E., (in Electricity), Dexter.
Louis Jefferson Brann, B. S., (in chemistry), Gardiner.
Charles Parker Crowell, B. M. E., Orono.
Edward Harmon Davis, B. M. E., Auburn.
John Washington Dearborn, B. M. E., Bradford Center.
Samuel Clark Dillingham, B. C. E., Portland.
Walter Dolley, B. S., Gorham.
Leroy Eugene Dow, B. M. E., Portland.
Rena Ethel Dunn, B. S., Orono.
Llewellyn Nathaniel Edwards, B. C. E., Oaks.
Walter Lincoln Ellis, B. M. E., Waterville.
Lottie Gertrude Farrar, B. S., (in Chemistry), Bangor.
Gracia Lillian Fernandez, B. S., North Dexter.
George Sherman Frost, B. C. E., Bridgewater, Conn.
Bernard Alston Gibbs, B. Ph., Glenburn.

Ralph Hamlin, B. C. E., Orono.
Harry Allison Higgins, B. M. E., Woodfords.
Bertrand Randall Johnson, B. S., Deering.
George Warren Lawrence, B. M. E., (in Electricity), South Gardiner.
Albion Dana Topliff Libby, B. M. E., (in Electricity), North Scarboro.
Herbert Ivory Libby, B. M. E., Biddeford.
Harry Matthew Lincoln, B. C. E., Bangor.
Ray Herbert Manson, B. M. E., (in Electricity), Gardiner.
Dana True Merrill, B. S., East Auburn.
Elmer Drew Merrill, B. S., East Auburn.
Harrison Pratt Merrill, B. M. E., (in Electricity), Wareham, Mass.
Charles Abram Pearce, B. S., Fort Fairfield.
Leon Edwin Ryther, B. S., Bondsville, Mass.
Fred William Sawtelle, B. C. E., Fryeburg.
Albert Clifford Small, B. M. E., (in Electricity), Lisbon Center.
George Albert Smith, B. M. E., Auburn.
Alden Percy Sprague, B. M. E., Vanceboro.
Alfred Andrews Starbird, B. S., (in Pharmacy), South Paris.
Ray Parker Stevens, B. M. E., (in Electricity), Brooklin.
Edwin Albert Sturgis, B. M. E., (in Electricity), Lewiston.
Roderick Desmond Tarr, B. M. E., Biddeford.
Wilfred Reuben Tolman, B. C. E., Augusta.
Charles Staples Webster, B. S., Portland.
Warner Edwin Welch, B. M. E., Orono.
Horace Loring White, B. S., (in Chemistry), Portland.
George Arthur Whittemore, B. M. E., Framingham, Mass.
Carl Gardner Wiswell, B. M. E., East Machias.

The second degree was conferred upon the following persons, upon presentation of satisfactory theses, and proof of professional and scientific work extending over a period of not less than three years:

Harold Sherburn Boardman, C. E., Bangor.
Hosea Ballou Buck, C. E., Bangor.
George Walter Chamberlain, M. S., Weymouth, Mass.
Ora Willis Knight, M. S., Bangor.
Charles Norton Taylor, C. E., Natick, Mass.

SCHOLARSHIPS AND PRIZES.

THE KIDDER SCHOLARSHIP.—The Kidder Scholarship was endowed by Frank E. Kidder, Ph. D., Denver, Colorado, a graduate of the University in the class of 1879, to be awarded to a member of the Junior class to be selected by the President and the Faculty.

THE PRENTISS PRIZE, the gift of Mrs. Henry E. Prentiss, Bangor, will be awarded to that member of the Junior class who shall present the best oration at the Junior exhibition. In the award of this prize, both the composition and the delivery of the oration will be considered.

THE PRENTISS DECLAMATION PRIZE, the gift of Mrs. Henry E. Prentiss, Bangor, for excellence in elocution, will be awarded to the best speaker in the Sophomore class.

THE LIBBEY PRIZE, the gift of the Hon. Samuel Libbey, Orono, will be awarded to the student who shall present the best essay upon an agricultural topic. The essays must be handed to the Professor of Agriculture on or before the first Monday in June.

THE WALTER BALENTINE PRIZE, the gift of Whitman H. Jordan, Sc. D., Geneva, N. Y., will be awarded to that member of the Junior class who shall excel in biological chemistry.

THE KENNEBEC COUNTY PRIZE, the gift of the Hon. William T. Haines, Waterville, will be awarded to that member of the Senior class who shall write the best essay on applied electricity.

THE FRANKLIN DANFORTH PRIZE, the gift of Edward F. Danforth, Skowhegan, a graduate of the University in the class of 1877, in memory of his father, Franklin Danforth, will be awarded to that member of the Senior class in the agricultural course who shall attain the highest standing.

The prizes were awarded last year as follows:

The Kidder Scholarship to Alden Bradford Owen, West Pembroke.

The Prentiss Prize to Pearl Clayton Swain, Skowhegan.

The Prentiss Declamation Prize to Frank McDonald, Portland.

The Libbey Prize to Elmer Drew Merrill, East Auburn.

The Walter Balentine Prize to Walter Jean Morrill, Madison.

The Algebra Prize to Thomas Buck, Orland.

APPOINTMENTS.

Speakers at Commencement, June, 1898.

Charles Staples Webster, Portland; Charles Abram Pearce, Fort Fairfield; Walter Dolley, Gorham; Rena Ethel Dunn, Orono; Elmer Drew Merrill, East Auburn; George Arthur Whittemore, Framingham, Mass.; Gracia Lillian Fernandez, North Dexter.

Speakers at the Junior Exhibition, June, 1898.

John Wilson Brown, Brimfield, Mass.; Charles Elmer Crosby, Albion; Mildred Louise Powell, Orono; Clinton Leander Small, Auburn; Pearl Clayton Swain, Skowhegan; Oliver Otis Stover, Freeport; Reginald Lovejoy Fernald, Orono; Wallace Edward Belcher, Plymouth, Mass.

Speakers at the Sophomore Prize Declamation Contest, December, 1897.

George Collins, Athol, Mass.; Frank McDonald, Portland; Dana Leo Theriault, Caribou; Walter Neal Cargill, Liberty; Fred Carlton Mitchell, West Newfield; Joseph Onon Whitcomb, Morrill; Roy Huntley Brown, Montague City, Mass.; Clinton Llewellyn Cole, Pleasantdale; Charles Omer Porter, Cumberland Mills.

REPORTED TO THE ADJUTANT GENERAL OF THE U. S. ARMY.

Samuel Clark Dillingham, Portland; Herbert Ivory Libby, Biddeford; Bernard Alston Gibbs, Glenburn.

MEMBERS OF LAMBA SIGMA ETA.

Samuel Clark Dillingham, Portland; George Sherman Frost, Bridgewater, Conn.; Bernard Alston Gibbs, Glenburn; Ralph Hamlin, Orono; Harry Allison Higgins, Woodfords; Herbert Ivory Libby, Biddeford; Albion Dana Topliff Libby, North Scarboro; Elmer Drew Merrill, East Auburn; Dana True Merrill, East Auburn; George Arthur Whittemore, Framingham, Mass.

PUBLIC WORSHIP.

Religous services of a simple character are held in the chapel every day except Saturday and Sunday. All undergraduate students are required to be present. Every undergraduate student is required to attend one church service on Sunday. Voluntary religious services, under the direction of the Young Men's Christian Association, are held weekly.

LOCATION.

The University has a beautiful and healthful location in the town of Orono, Penobscot county, half way between the villages of Orono and Stillwater, three miles from the city of Oldtown, and nine miles from the city of Bangor. The Stillwater river, a branch of the Penobscot, flows in front of the build-

ings, forming the western boundary of the campus. Orono is upon the Maine Central Railroad and is easy of access from all parts of the State.

The Bangor, Orono, and Oldtown Electric Railroad, runs through the university grounds. Visitors will find it convenient to take the electric cars at Bangor, Veazie, or Oldtown, as the electric road does not run to the railroad station at Orono. Baggage may be sent to Orono by railroad.

The School of Law is located in the city of Bangor, nine miles from Orono, in the Exchange Building, on the corner of Exchange and State streets.

MILITARY INSTRUCTION.

Military instruction is required by law. The department is under the charge of an officer of the regular army, detailed by the President of the United States for this purpose. Cadet rifles, ammunition, and accoutrements are furnished by the War Department. The course has special reference to the duties of officers of the line. The students are organized into an infantry battalion of four companies, a band, and a signal corps, officered by cadets selected for their character, soldierly bearing, and military efficiency. The corps is instructed and disciplined in accordance with rules prescribed by the President of the United States.

The trustees have prescribed a uniform consisting of dark blue blouse, with State of Maine buttons, and gold braid on cuffs; trousers of light blue; blue cap with gold wreath ornament; white duck trousers for hot weather. The officer's blouse is of the pattern prescribed by U. S. army regulations, without collar ornaments. Students are required to wear their uniforms during military exercises, and are allowed to do so at other times. Students must purchase uniforms subject to the approval of the

military instructor, who is required to see that the quality and fit are satisfactory. The prices for the year ending November 30, 1898, were as follows: blouse $7.00; cloth trousers $5.00; three pairs of duck trousers $3.00; cap $1.50; three pairs of gloves 60c.; three belts 30c.; total, $17.40.

The three seniors who attain the highest standing in the military department are reported to the Adjutant General of the U. S. Army, and their names are printed in the U. S. Army Register. Cadets who have satisfactorily completed the course in military science receive at graduation a certificate of military proficiency and are reported to the Adjutant General of Maine.

During the senior year students are permitted to substitute an equivalent amount of work in some other department in place of military drill.

THE COBURN CORP OF CADETS.

Instructor Perley Walker, Commanding.

General Staff.

Captain and Chief of Staff—Charles Comfort Whittier.
First Lieutenant and Chief Signal Officer—Wallace Edward Belcher.
First Lieutenant and Quartermaster—Oliver Otis Stover.

Field and Staff.

Major—Clinton Leander Small.
First Lieutenant and Adjutant—Eben Price Bassett.

Non-Commissioned Staff.

Sergeant Major—Frank Henry Bowerman.
Quartermaster Sergeant—Clinton Llewellyn Cole.
Color Sergeant—Arthur Southwick Page.

COMPANY A.

Captain.....Frank Lothrop Batchelder.
First Lieutenant.....Herman Henry Oswald.
Second Lieutenant.....Edwin Melcher Smith.
First Sergeant.....Charles Hutchinson Lombard.
Sergeant.....Leo Bernard Russell.
Sergeant.....William Goldsbrough Jones.
Sergeant.....Wilfred Harold Caswell.
Sergeant.....William Joseph Burgess.
Corporal.....Lewis Goodrich Varney.
Corporal.....LeRoy Harris Harvey.
Corporal.....Herbert Henry Leonard.
Corporal.....Gardner Percival Shorey.
Corporal.....Fred Hammond Hanson Bogart.

COMPANY B.

Captain.....Arthur Clement Wescott.
First Lieutenant.....Alson Edwin Boynton.
Second Lieutenant.....Allen Whitmore Stephens.
First Sergeant.....John Gardner Lurvey.
Sergeant.....Philip Ross Goodwin.
Sergeant.....Malcolm Cole Hart.
Sergeant.....Wallace Augustus Weston.
Sergeant.....Benjamin Thomas Weston.
Corporal.....William Harris Boardman.
Corporal.....Henry Perez Hoyt.
Corporal.....Fred Lewis Martin.
Corporal.....Lewis Robinson Cary.
Corporal.....Lawrence Mabry Swasey.

COMPANY C.

Captain.....William Augustus Murray.
First Lieutenant.....Walter Jean Morrill.
Second Lieutenant.....Bert Whitaker Flint.
First Sergeant.....Frank McDonald.
Sergeant.....Joseph Onon Whitcomb.
Sergeant.....James Arthur Hayes.
Sergeant.....Howard Clinton Strout.

Corporal.....Clement Whittier.
Corporal.....Walter Henry Rastall.
Corporal.....Ernest Lauren Watson.
Corporal.....Fred Albert Willard.

COMPANY D.

Captain.....Rufus Houdlette Carlton.
First Lieutenant.....Howard Brett.
Second Lieutenant.....Edwin St. Elmo Mosher.
First Sergeant.....Charles Omer Porter.
Sergeant.....Fred Hale Vose.
Sergeant.....Roy Huntley Brown.
Sergeant.....Fred Carlton Mitchell.
Corporal.....George Estyn Goodwin.
Corporal.....Bertrand Clifford Martin.
Corporal.....Fred Merrill Davis.
Corporal.....William Bruce Hunter.

BAND.

Captain and Musical Director...Irving Harry Drew.
First Lieutenant.....Charles Elbert Blackwell.
First Sergt. and Drum Major..Guy Alfred Hersey.
Sergeant.....Fred Albert Noyes.
Corporal.....Clifford Dawes Harvey.
Corporal.....Charles William Bartlett.

SIGNAL CORPS.

Second Lieutenant.....Maurice Henry Powell.
First Sergeant.....Julian Sturdevant Dunn.
Corporal.....Stephen Edward Woodbury.

CATALOGUE OF STUDENTS.

GRADUATES.

Crathorne, Arthur Robert, B. S.,	Champaign, Ill.,	Mt. Vernon [House.
Hamlin, Ralph, B. C. E.,	Orono,	Mrs. L. Hamlin.
Manson, Ray Herbert, B. M. E.,	Gardiner,	Mt. Vernon House.
Merrill, Elmer Drew, B. S.,	East Auburn,	Mt. Vernon House.
Rogers, Allen, B. S.,	Hampden,	Prof. A. B. Aubert.
Ryther, Leon Edwin, B. S.,	Bondsville, Mass.,	Mt. Vernon [House.

SENIORS.

Bassett, Eben Pierce,	Bangor,	201 Oak Hall.
Batchelder, Frank Lothrop,	Machias,	Miss A. T. Emery.
Belcher, Wallace Edward,	Plymouth, Mass.,	B. Θ. Π. [House.
Blackwell, Charles Elbert,	Madison,	Q. T. V. House.
Boynton, Alson Edwin,	Alna,	Q. T. V. House.
Brett, Howard,	Bangor,	201 Oak Hall.
Brown, John Wilson,	Brimfield, Mass.,	Mr. J. I. Park.
Carlton, Rufus Houdlette,	Cedar Grove,	K. Σ. House.
Caswell, Winfield Benson,	Waterville,	A. T. Ω. House.
Clark, Harold Hayward,	Ellsworth,	A. T. Ω. House.
Cleaves, Daniel Lunt,	Portland,	Mr. H. Perkins.
Collins, George,	Athol, Mass.,	203 Oak Hall.
Crockett, Cyrenius Walter,	Rockland,	B. Θ. Π. House.
Downing, Marshall Buckland,	Dover,	B. Θ. Π. House.
Drew, Irving Harry,	Bar Harbor,	Q. T. V. House.
Fernald, Reginald Lovejoy,	Orono,	Prof. M. C. Fernald.
Flint, Bert Whitaker,	Bangor,	Bangor.
Ford, Leonard Harris,	Bangor,	Bangor.

Grover, Archer Lewis,	Bethel,	205 Oak Hall.
Haney, William Wallace,	Eastport,	Mr. O. T. Goodridge.
Hayes, Clarence Morrill,	Milton, N. H.,	Q. T. V. House.
Hersey, George Woodman,	Portland,	A. T. Ω. House.
Heyer, Harry Sanford,	Friendship,	203 Oak Hall.
Hilton, George Libby,	Bradley,	Mrs. S. Gee.
Hoxie, Hall Farrington,	Waterville,	209 Oak Hall.
Mansfield, Edward Raymond,	Orono,	Mr. E. W. Mansfield.
Mayo, Herbert Palmer,	South Boston, Mass.,	301 Oak Hall.
Morell, William Bradley,	Amherst, Mass.,	B. Θ. Π. House.
Morrill, Walter Jean,	Madison,	K. Σ. House.
Mosher, Edwin St. Elmo,	Presque Isle,	205 Oak Hall.
Murray, William Augustine,	Pittsfield,	K. Σ. House.
Nelson, William,	Cumberland Centre,	305 Oak Hall.
Oswald, Herman Henry,	Philadelphia, Pa.,	A. T. Ω. House.
Palmer, Edward Everett,	South Bridgton,	B. Θ. Π. House.
Powell, Maurice Henry,	Orono,	Mr. S. H. Powell.
Powell, Mildred Louise,	Orono,	Mr. S. H. Powell.
Pretto, Joseph Henry,	Orono,	Mr. J. Pretto.
Sidensparker, Stanley,	Warren,	Mrs. Buck.
Small, Clinton Leander,	Auburn,	202 Oak Hall.
Smith, Edwin Melcher,	Gardiner,	207 Oak Hall.
Stephens, Allen Whitmore,	Oldtown,	Oldtown.
Stinson, Frank Minott,	Bath,	301 Oak Hall.
Stover, Oliver Otis,	Freeport,	202 Oak Hall.
Swain, John Henry,	Skowhegan,	K. Σ. House.
Swain, Pearl Clayton,	Solon,	Mt. Vernon House.
Veazie, Marcellus Maurice,	Islesboro,	Mrs. Ada Strout.
Wescott, Arthur Clement,	Portland,	Q. T. V. House.
Whittier, Charles Comfort,	Skowhegan,	Q. T. V. House.

JUNIORS.

Beedle, Harry Woodward,	South Gardiner,	207 Oak Hall.
Bird, Alan Laurence,	Rockland,	B. Θ. Π. House.
Bowerman, Frank Harvey,	Victor, N.Y.,	Prof. J. S. Stevens.

Brown, Roy Huntley,	Montague City, Mass.,	Still-[water.
Burgess, William Joseph,	Calais,	Mr. H. H. Finn.
Burnham, Agnes Rowena,	Oldtown,	Oldtown.
Cargill, Walter Neal,	Liberty,	Mr. O. T. Goodridge.
Caswell, Wilfred Harold,	Bridgton,	A. T. Ω. House.
Clark, Wilkie Collins,	Skowhegan,	Q. T. V. House.
Closson, James Edward,	Monson, Mass.,	208 Oak Hall.
Cole, Clinton Llewellyn,	Pleasantdale,	311 Oak Hall.
Cross, Harry,	Brewer,	Ktaadn Building.
Cushman, Harvey Barnes,	Rockland,	A. T. Ω. House.
Davis, Harry Ashton,	Orono,	Orono.
Drummond, Henry Frank,	Bangor,	K. Σ. House.
Dunn, Julian Sturdevant,	Cumberland,	K. Σ. House.
Eaton, Herbert Davidson,	Bangor,	Bangor.
Forbush, Ernest Carlton,	Marlboro, Mass.,	Mr. W. F. [Chase.
Fortier, Arthur Henry,	Oldtown,	Oldtown.
Goodwin, Philip Ross,	Randolph,	B. Θ. Π. House.
Gray, Charles Perley,	Oldtown,	Oldtown.
Hamlin, George Otis,	Orono,	Dr. H. Hamlin.
Hart, Malcolm Cole,	Willimantic,	Q. T. V. House.
Hatch, Howard Andrew,	Lindenville, O.,	B. Θ. Π. House.
Hayes, James Arthur,	Randolph,	211 Oak Hall.
Hersey, Guy Alfred,	Bangor,	K. Σ. House.
Holley, Clifford Dyer,	Farmington,	Mrs. S. Gee.
Horner, Leon Herbert,	Springfield, Mass.,	K. Σ. House.
Johnson, Frank Ortelle,	North Berwick,	Q. T.V. House.
Jones, William Goldsbrough,	Orono,	Rev. T. F. Jones.
Judge, Thomas Francis,	Biddeford,	208 Oak Hall.
Leslie, Raymond Everett,	Patten,	Mr. J. P. Spearin.
Lombard, Charles Hutchinson,	Portland,	307 Oak Hall.
Love, Alexander,	East Bluehill,	K. Σ. House.
Lurvey, John Gardner,	Portland,	307 Oak Hall.
McDonald, Frank,	Portland,	Q. T. V House.
McPheters, Ralph Herbert,	Orono,	Mr. A. S. McPheters.
Maddocks, Howard Lewis,	Skowhegan,	Q. T. V. House.
Mann, Edwin Jonathan,	West Paris,	206 Oak Hall.

Merrill, Wilbur Louis,	East Parsonsfield,	K. Σ. House.
Mitchell, Fred Carleton,	West Newfield,	Q. T. V. House.
Mitchell, Frank Henry,	Charleston,	Q. T. V. House.
Monohon, George Robert,	Cherryfield,	A. T. Ω. House.
Murphy, George Ferguson,	Alewive,	109 Oak Hall.
Noyes, Frank Albert,	Berlin, N. H.,	K. Σ. House.
Owen, Alden Bradford,	West Pembroke,	109 Oak Hall.
Page, Arthur Southwick,	Fairfield,	211 Oak Hall.
Perkins, DeForest Henry,	North Brooksville,	111 Oak Hall.
Philoon, Daniel Lara,	Auburn,	312 Oak Hall.
Porter, Charles Omer,	Cumberland Mills,	K. Σ. House.
Ricker, Percy Leroy,	Westbrook,	303 Oak Hall.
Robbins, Charles Alphonso,	Patten,	Mr. J. P. Spearen.
Rollins, Clarence Herbert,	Veazie,	Veazie.
Rollins, Frank Morris,	Waterville,	A. T. Ω. House.
Russell, Leo Bernard,	Farmington,	Q. T. V. House.
Smith, Edward Henry,	East Sullivan,	303 Oak Hall.
Smith, Freeman Ames,	Thorndike, Mass.,	K. Σ. House.
Stickney, Grosvenor Wilson,	Clinton, Mass.,	206 Oak Hall.
Stowell, Clarence Warner,	Brimfield, Mass.,	305 Oak Hall.
Strange, Edward Moore,	Calais,	112 Oak Hall.
Strout, Howard Clinton,	Orono,	Mrs. Ada Strout.
Tate, Edwin Morrel,	South Corinth,	Mr. Spaulding.
Tate, Fred Foy,	South Corinth,	Mr. Spaulding.
Thombs, William Brackett,	Gorham,	A. T. Ω. House.
Trim, Amariah Colby,	Islesboro,	Mrs. Ada Strout.
Vose, Fred Hale,	Milltown, N. B.,	B. Θ. Π. House.
Webster, Frank Elijah,	Patten,	Mr. E. Webster.
Weston, Benjamin Thomas,	Madison,	309 Oak Hall.
Weston, Wallace Augustus,	Madison,	309 Oak Hall.
Whitcomb, Joseph Onon,	Morrill,	111 Oak Hall.
Wormell, Ralph Geddes,	Waterville,	A. T. Ω. House.

SOPHOMORES.

Adams, Nathan Herbert,	Notch,	Mr. J. P. Spearen.
Armes, Will Addison,	Gardiner,	Mr. H. H. Finn.
Bartlett, Charles William,	North New Portland,	K. Σ. [House.
Bartlett, Mark Jonathan,	Montville,	Miss A. T. Emery.
Bartlett, Wales Rogers,	Center Montville,	306 Oak Hall.

Bennett, Waldo Horace,	Newport,	Q. T. V. House.
Boardman, William Harris,	Calais,	Mr. H. H. Finn.
Bogart, Fred Hammond Hanson,	Chester, Conn.,	112 Oak Hall.
Bryer, Theodore Stevens,	Boothbay,	Q. T. V. House.
Buck, Henry Alfred,	Bucksport,	102 Oak Hall.
Buck, Thomas,	Orland,	Mr. H. H. Finn.
Cary, Lewis Robinson,	Bowdoinham,	Prof. G. M. [Gowell.
Clark, Samuel,	Waterville,	A. T. Ω. House.
Cobb, Arthur Leroy,	South Vassalboro,	Mr. O. T. [Goodridge.
Crosby, Robert Augustine,	Benton Falls,	Q. T. V. House.
Davis, Edmund Ireland,	Bangor,	B. Θ. Π. House.
Davis, Fred Merrill,	Lewiston,	209 Oak Hall.
Davis, George Harold,	Auburn,	K. Σ. House.
Fitzgerald, Elsie Eunice,	Oldtown,	Oldtown.
Fraser, Gertrude Lee,	Oldtown,	Oldtown.
Freeman, George Leonard,	West Gray,	K. Σ. House.
Glass, Ralph Rigby,	Bangor,	Bangor.
Goodwin, George Estyn,	Gorham,	K. Σ. House.
Greene, James Arthur,	Bluehill,	204 Oak Hall.
Hall, Warren Callamore,	Brunswick,	A. T. Ω. House.
Hamlin, Emily,	Orono,	Mrs. L. Hamlin.
Harvey, Clifford Dawes,	Lewiston,	Q. T. V. House.
Harvey, Leroy Harris,	Orono,	Prof. F. L. Harvey.
Hoyt, Henry Perez,	Fort Fairfield,	A. T. Ω. House.
Hunter, William Bruce,	Vanceboro,	306 Oak Hall.
Keller, Percy Raymond,	West Rockport,	A. T. Ω. House.
Leonard, Herbert Henry,	Orono,	Mr. G. Leonard.
Libby, Wilbert Andrew,	Standish,	304 Oak Hall.
Linn, Robert Wilson,	Hartland,	Q. T. V. House.
Lowell, Frank Holt,	North Penobscot,	Mr. O. T. [Goodridge.
Maddocks, Lillian Maude,	Stillwater,	Stillwater.
Martin, Bertrand Clifford,	Fort Fairfield,	Q. T. V. House.
Martin, Fred Lewis,	Bluehill,	106 Oak Hall.
Merrill, Maurice Barnaby,	Stillwater,	Stillwater.
Mitchell, Charles Augustus,	West Newfield,	Q. T. V. House.
Nickerson, Percy Lee,	Swanville,	Mrs. Ada Strout.

Pritham, Harry Charles,	Freeport,	210 Oak Hall.
Rastall, Walter Henry,	Chicago, Ill.,	K. Σ. House.
Robinson, Alson Haven,	Orono,	Rev. P. J. Robinson.
Ross, Mowry,	West Woodstock, Conn.,	Ktaadn [Building.
Saunders, Harry Augustus,	Bluehill,	204 Oak Hall.
Shaw, Scott Parker,	North Gorham,	304 Oak Hall.
Shorey, Percival Gardner,	Belfast,	A. T. Ω. House.
Stilphen, Arthur Melvin,	Dresden Mills,	Mrs. T. Shatney.
Stilphen, Charles Augustus,	Dresden Mills,	Mrs. T. Shatney.
Swasey, Lawrence Mabry,	Limerick,	210 Oak Hall.
Thompson, Samuel Day,	Bangor,	B. Θ. Π. House.
Varney, Lewis Goodrich,	Windham Centre,	K. Σ. House.
Ward, Thomas Hale,	Fryeburg,	302 Oak Hall.
Watson, Ernest Lauren,	Brunswick,	302 Oak Hall.
Watts, Frank Erwin,	West Falmouth,	Stillwater.
Webster, William Bryant,	Coventry, Vt.,	Mr. C. Crowell.
Whittier, Clement,	Orono,	Rev. C. E. Whittier.
Willard, Fred Albert,	Lisbon,	K. Σ. House.
Woodbury, Stephen Edward,	Beverly, Mass.,	210 Oak Hall.

FRESHMEN.

Abbott, Horace Percy,	Eliot,	Mr. W. Colburn.
Alexander, Clayton Clifford,	Franklin, Vt.,	Mrs. Collins.
Allen, Roy Parker,	North Sedgwick,	Mrs. M. Wilson.
Bacheldor, Arthur Willis,	North Sebago,	305 Oak Hall.
Bartlett, Enoch Joseph,	Monroe,	Stillwater.
Blaisdell, Melvin Merle,	Fort Fairfield,	308 Oak Hall.
Bodge, Byron Hodgkins,	Wells,	Q. T. V. House.
Brown, Arthur Fred,	Belfast,	A. T. Ω. House.
Burns, Harry Buckman,	Westbrook,	104 Oak Hall.
Bussell, Edith Mae,	Oldtown,	Oldtown.
Butman, James Warren,	Readfield,	A. T. Ω. House.
Carr, Harold Malcolm,	Sangerville,	K. Σ. House.
Chadbourne, Henry Wilmott,	Mattawamkeag,	Ktaadn Build-[ing.
Chamberlain, Charles Edward,	Wilton,	Q. T. V. House.
Chase, Nathan Ajalon,	South Paris,	212 Oak Hall.
Cimpher, Orman Taylor,	Guilford,	Q. T. V. House.

Cole, Henry Ernest,	Pleasantdale,	311 Oak Hall.
Crowell, William Henry,	Middletown, Conn.,	Q. T. V. [House.
Davis, Alfred Ricker,	Auburn,	K. Σ. House.
Davis, Samuel Prince,	Portland,	B. Θ. Π. House.
Delano, Edward Warren,	Abbot Village,	B. Θ. Π. House.
Dow, Ernest Hillgrove,	Saco,	Mr. J. P. Spearen.
Dow, Roy Gay,	Bridgton,	Mrs. Marsh.
Dudley, Carl Child,	Bryant's Pond,	212 Oak Hall.
Duren, Harry Elwood,	Richmond,	405 Oak Hall.
Durgan, George Washington, Jr.	Sherman Mills,	310 Oak Hall.
Dyer, William Norman,	Harrington,	A. T. Ω. House.
Eldridge, Walter Hampton,	Bucksport,	Mr. J. P. Spearen.
Farrington, Herbert Oscar,	Portland,	Stillwater.
Fessenden, Lothrop Edwin,	Bridgton,	Mrs. Marsh.
Fogg, Walter S.,	Cornish,	401 Oak Hall.
Foster, Arthur Brookhouse,	Beverly, Mass.,	308 Oak Hall.
French, Henry Carter,	Rumford Centre,	Mr. E. Webster.
Gilbert, Eugene Clarence,	Orono,	Mr. T. Gilbert.
Graves, William,	Presque Isle,	A. T. Ω. House.
Greene, James Marquis,	Putnam, Conn.,	Q. T. V. House.
Hall, William Asbury,	Freeport,	Mrs. A. Graves.
Hamilton, Andrew George,	Orono,	Mr. H. Hamilton.
Hamlin, Horace Parlin,	Orono,	Mrs. L. Hamlin.
Hennessy, Harold Stewart,	Bangor,	B. Θ. Π. House.
Holmes, Fred Eugene,	East Machias,	Mr. J. P. Spearen.
Hunting, Eugene Nathan,	Plymouth, Mass.,	409 Oak Hall.
Johnson, Elbridge Augustus,	Deering,	Mrs. A. Cowan.
Kallom, Frank Winthrop,	South Berlin, Mass.,	Mrs. M. [Wilson.
Kelley, Burchard Valentine,	Centerville, Mass.,	Mr. J. P. [Spearen.
Kneeland, Henry Wilton,	Searsport,	204 Oak Hall.
Knight, Perley Charles,	South Gorham,	Mr. O. T. Good- [ridge.
Larrabee, Fay Frederick,	Prospect Harbor,	Mr. J. P. [Spearen.
Larrabee, George Pearson,	Pride's Corner,	310 Oak Hall.

Libbey, Joseph Metcalf,	Mattawamkeag	Mrs. J. A. Walton.
Livermore, Leon Forrest,	South Sebec,	K. Σ. House.
Lowe, Sumner Sturdivant,	Cumberland,	Mrs. A. Cowan.
Lyon, Alpheus Crosby,	Bangor,	Q. T. V. House.
McCarthy, Patrick Edward,	Lewiston,	Oak Hall.
McLaughlin, Ella,	Sprague's Mills,	Mt. Vernon House.
Maddocks, John Henry,	Oldtown,	Oldtown.
Mansfield, Harold Wilder,	Union,	Mr. J. P. Spearen.
Margesson, Charles William,	Bangor,	Q. T. V. House.
Mitchell, Ezra Getchell,	Auburn,	Q. T. V. House.
Moore, Byron Newcomb,	Biddeford,	107 Oak Hall.
Mosher, Ira Enoch,	Richmond,	Stillwater.
Mosher, Percival Hildreth,	Pleasantdale,	Miss A. Fitzgerald.
Packard, Harry Elton,	Guilford,	Mr. L. P. Harris.
Pease, Irving,	Bean,	Ktaadn Building.
Peck, Luther,	Monson, Mass.,	204 Oak Hall.
Pipes, Harry Rufus,	Presque Isle,	A. T. Ω. House.
Pressey, Frank Ethelbert,	Bangor,	407 Oak Hall.
Rackliffe, Clinton Nathan,	Easton,	411 Oak Hall.
Rice, Marie Cecilia,	Bangor,	Bangor.
Ross, Edwin Bishop,	Bangor,	B. Θ. Π. House.
Russell, Roy Elvert,	Livermore,	310 Oak Hall.
Sewell, Herbert Willis,	Wilton,	Q. T. V. House.
Shaughnessy, James,	St. Stephen, N. B.,	Mr. J. P. Spearen.
Silver, Arthur Elmer,	Silver's Mills,	Mrs. S. Gee.
Small, Silas Gilman,	Lubec,	Mr. J. P. Spearen.
Smith, Royal Holland,	Orono,	Mill Street.
Spearen, Ella Elmira,	Orono,	Mr. J. P. Spearen.
Taft, DeForest Reed,	Winchester, N. H.,	Mr. W. Colburn.
Towle, Jessie Craig,	Sherman Mills,	Miss A. Fitzgerald.
True, Edwin Stanley,	Portland,	B. Θ. Π. House.
Vickery, Frank Spencer,	Woodstock, N. B.,	Mr. C. Crowell.
Warren, John Clifford,	Westbrook,	K. Σ. House.

Watson, Alvin Morrison,	Portland,	K. Σ. House.
Webb, Arnold Stedman,	Portland,	B. Θ. Π. House.
Wheeler, Allen Francis,	Brunswick,	A. T. Ω. House.
Whittier, Ralph,	Orono,	Rev. C. E. Whittier.
Wight, James Herman,	Naples,	Mrs. Collins.
Wilkins, Harry Fred,	Monson,	Mrs. A. D. Merry.
Williams, Thomas Herbert,	Topsham,	403 Oak Hall.

SPECIAL STUDENTS.

Barney, John E.,	Canaan, N. H.,	Oldtown.
Barrows, William Edward, Jr.,	Augusta,	B. Θ. Π. House.
Bean, Ida May,	Oldtown,	Oldtown.
Benson, Frank Smith,	Bangor,	B. Θ. Π. House.
Douglass, Carroll Stephen,	Guilford,	Mr. E. Webster.
French, Joseph Edwin,	South Chesterville,	Mr. J. P. [Spearen.
Gilman, Francis Alleine,	Orono,	Q. T. V. House.
Hellier, Maude Winifred,	Bangor,	Bangor.
Jeffery, Perley Eugene,	Monmouth,	Ktaadn Building.
Loud, Herbert Spencer,	Round Pond,	104 Oak Hall.
MacGregor, Roderick James,	South Lincoln,	Mrs. A. D. Merry.
Nichols, Mrs. Mabel Carlton,	Orono,	Mt. Vernon House.
Phillips, Irving Wadsworth,	Somers, Conn.,	Mr. J. P. Spearen.
Sabine, Ralph Harvey,	Pomfret, Conn.,	Mr. J. P. [Spearen.
Sawyer, William McCrillis,	Bangor,	B. Θ. Π. House.
Snow, Charles Wyman,	South Brewer,	Mrs. T. Shatney.
Tolford, Arthur Roebuck,	Portland,	107 Oak Hall.
Wells, Charles Nelson,	Minot,	Mr. W. Page.
Young, Burt Linwood,	Augusta,	Prof. W. M. Munson.

STUDENTS IN SHORT THE WINTER COURSE IN AGRICULTURE.

Andrews, Henry Asa,	Otisfield Gore,	Mr. J. P. Spearen.
Boothman, Hiram John,	South Portland,	Mr. J. P. [Spearen.
Brown, Irving Elwood,	Norway,	Mr. J. P. Spearen.
Colson, Charles Alfred,	Winterport,	Mr. J. P. Spearen.

Colson, Franklin Asbra,	Winterport,	Mr. J. P. Spearen.
Newell, Bertrand Allard,	South Waterboro,	Mr. J. P. Spearen.
Tyler, Eugene,	Greenville,	Mr. W. Page.
Wells, Charles Nelson,	Minot,	Mr. W. Page.

STUDENTS IN THE SCHOOL OF LAW.

SENIORS.

Fenderson, Frank Devereux,	East Parsonsfield,	260 Hammond Street.
Graham, Herbert Lewis,	Bar Harbor,	Penobscot Exchange.
Jones, Freeland,	Bangor,	37 Fifth Street.
McGill, Laurence Vincent,	East Rochester, N. H.,	17 Harlow Street.
Williams, Charles Evarts,	Brewer,	Brewer.

JUNIORS.

Cook, Harold Elijah,	Vassalboro,	17 James St.
Dolan, John Frederick,	Bangor,	77 Second St.
Foss, Paul Frank,	Weston,	17 Prospect St.
Gibbs, Bernard Alston, B. S., *University of Maine.*	Glenburn,	70 Grove St.
Graton, Claude Dawing,	Burlington, Vt.,	11 Cedar St.
Hobson, Ernest Emery,	Palmer, Mass.,	50 Charles St.
Hutchings, Edward, B. A., *Bowdoin College.*	Brewer,	Brewer.
Leathers, Joseph Wesley, B. A., *Bates College.*	Bangor,	27 Forest Ave.
McCarthy, Matthew,	Bangor,	182 York St.
Mackay, John Daniel,	Lake Ainslie, N. S.	
Oliver, Charles Richard,	Bangor,	182 Cedar St.
Price, Arthur Wellington, B. A., *Wesleyan University.*	Dresden Mills,	65 Summer St.
Robinson, Agnes May,	Sherman Station,	90 Grove St.
Sawyer, William McCrillis,	Bangor,	64 Forest Ave., Bangor.
Sargent, Walter Joseph, B. A., *Bowdoin College.*	Brewer,	Brewer.

Small, Frank Jackson, B. A., *Bowdoin College.*	Oldtown,	Oldtown.
Theriault, Dana Leo,	Caribou,	182 York St.
Thompson, Frederick E., *Brown University.*	Bangor,	27 Sixth St.
Waterhouse, William H.,	Oldtown,	Oldtown.
Williams, Dana Scott,	Lewiston,	11 Cedar St.

SPECIAL STUDENTS.

Barker, Lewis Appleton,	Bangor.	292 Hammond St.
Dennett, Carl Pullen,	Bangor.	17 Forest Ave.
Robinson, William Henry,	Bangor.	9 South St.
Snare, Austin White, B. A., *Colby College.*	Hampden Corner,	Hampden Corner.
Trask, Allen Pierce,	Bangor.	176 Ohio St.

SUMMARY.

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